Message

It is a great honor for me to be involved with the 2nd International Conference on Business and Management (ICBM 2019), organized by Brac Business School, Brac University. I am overwhelmed to know that more than 160 research papers will be presented by 200 local and international participants. Definitely, it reflects an outstanding team work and profound activities which were accompanied by the organizing committee of ICBM 2019.

I firmly believe that this conference will help the scholars to develop their career and it will be a great experience for them. Moreover, this conference would help the industry people to think more creatively.

It is a great initiative taken by Brac University which will contribute towards the development of the business arena. It is creating opportunities and helping the students to explore themselves in order to fit in the workplace based on global phenomena. I am confident that in future Brac University will take such initiatives by which the society will be benefited at large.

Finally, I would like to conclude with best wishes.

K M Khalid MP
State Minister
Ministry of Cultural Affairs
Government of the People’s Republic of Bangladesh
Welcome to the second International Conference on Business and Management (ICBM 2019) taking place on April 25-27 in Dhaka, Bangladesh.

The theme for this year’s conference is ‘Industry Focused Global Research Trends in Business and Management.’ As such the conference aims to bring both practitioners and academics together, to promote a valuable exchange of ideas, and to facilitate discussion on current affairs in business and management.

As management researchers meticulously investigate how the world’s needs can be met through business activities that promote a better quality of life, that goal can be achieved only by fostering enduring partnerships between industry and academia. And ICBM 2019 is a purposeful step toward cultivating such partnerships right here in Bangladesh.

The context for both business activities and management research is not only global, but highly interdisciplinary. Following the success of the previous conference, ICBM is set to welcome international participants yet again this year, and we are delighted to have four distinguished international scholars as keynote speakers. The range of topics is sufficiently broad with submissions covering exciting new areas in addition to traditional management disciplines.

We are grateful to have the support of key players in the local industry, particularly of our Platinum Sponsor, ACI Limited, one of the largest conglomerates in the country. We are also thankful to Gold Sponsors Abdul Monem Ltd., Brac Bank, IPDC Finance and Runner Automobiles, and to Silver Sponsors Mutual Trust Bank and bKash.

We hope you will enjoy this three-day conference and be able to utilize this platform to enhance your knowledge and explore new ideas.
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Industry 4.0: Driving Logistic Innovation
Guidelines for the use of Internet of Things and Cyber-Physical System

Hui-Ming Wee
Professor, Department of Industrial and Systems Engineering, Chung Yuan Christian University, Taiwan
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Abstract – Although in its conceptual state, Industry 4.0 promises a revolutionary leap in manufacturing industries for the next 10-20 years. Industry 4.0 is defined as a computerized manufacturing industry with connected intelligent devices, machines and physical objects; the goal is to construct an intelligent factory which is characterized by adaptability, resource efficiency and ergonomics. It integrates customers and business partners to enhance the value chain. Its advantages are: i) Communicate independently and without wire. ii) Optimized individual customer product manufacturing, iii) Resource efficient production. iv) Create energy saving efficiencies and reduce costs, and v) Lower the amount of carbon emitted.

This talk provides some insights and guidelines for designing a successful adaptation of Industry 4.0 using the Internet of Things (IoT) and Cyber-Physical Systems as part of Big Data Analytics. Several insights from published surveys, research papers and journals are collected in order to support our view in constructing the guidelines.

Keyword – Logistics, Internet of things; Cyber-physical system; Industry 4.0.
To Set Up APMI Index by Using Open Data of Taiwan Hog Industry

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Abstract – APMI is PMI (Purchasing Managers’ Index) application in Agriculture. It means that the focus of this paper is to build APMI based on PMI. PMI is popular in manufacturing sector in Taiwan. In this paper, we will show what variables we choose for building APMI and what data that we collected from Taiwan government open data. Then, we will show what methodology that we used to form APMI equation and calculate the APMI. The result for readers to know how we build APMI in reality, we use Taiwan hog industry as numerical example.

Keywords – Purchasing Managers’ Index (PMI), Agriculture Purchasing Managers’ Index (APMI), Taiwan Hog Industry, Open data

Introduction
Purchasing managers’ Index (PMI) has been used and published in the U.S since 1930 from the Institute for Supply Management (ISM). Chung-Hua Institution for Economic Research has introduced PMI for manufacturing industry in Taiwan since 2006 and the results have been released monthly from 2011 till today. In 2015, Chung-Hua Institution for Economic Research released PMI results for non-manufacturing industries as well. The results for non-manufacturing industries were not include agriculture industry.

However we discovered most of the agricultural researches and forecasting are focus on individual industry or products. Due to the GDP of agriculture for Taiwan was under 2 percent that Taiwan still not had the index to represent the agricultural status. Therefore, there is an absence of Taiwan’s agricultural index to describe economic status in the market. Then, we found PMI could solve the problem, because it shares the features of presenting economic status in non-agriculture industry. In order to better conduct Taiwan’s agricultural economic status analysis, the motivation is to create Taiwan’s agriculture PMI which is Agriculture Purchasing Managers’ Index (APMI). These APMI are able to provide Taiwan agricultural macro-economic status

Through analysis Taiwan’s important agriculture industries to construct specific APMI equation for the most important agriculture industry, hog industry that farmers, government and business decision makers can invest in accordance with the result of these index. The purpose of this research is to find one feasible variables combination that can represent hog industry.

Literature review
Chen & Huang (2013) mentioned that there are about 40 countries or regions in the world conducting PMI surveys at present. PMI is also highly valued by central banks, stock market investors and business decision makers because of its simple intuition but still its significance. The ISM survey’s indexes are highly regarded by business analysts because they have proven to be a reliable gauge of economic activity over a long period. The ISM’s extensive history is a result of purchasing managers’ long-standing desire to obtain industry-level information (Harris, Owens and Sarte, 2004). Hence, we could know PMI index has a certain influence and indicator in the world.

The application of PMI is to forecast inflation and industrial production using 224 monthly time series. (Watson et al, 1998)

The results above show that diffusion indexes (DI) are able to be used in macroeconomic forecasting and thus, PMI, which are composited of diffusion indexes also share the features of diffusion indexes to contribute in manufacturing as well as non-manufacturing business forecasting.

In the research, we used The Trial Compilation of Agriculture Purchasing Manager’s Index for Taiwan: The case of Taiwanese Hog industry (Tien, 2018) as the key paper and focused on its research and analytical methods. The key paper showed the top 20 volume of agricultural field in the figure
The revenue of Hog industry in 2016 was top one. Therefore, it means hog industry played a key role for the GDP of Taiwan’s agriculture industry. In this paper we chose hog industry as the base to calculate APMI.

**Research methods**

The research has two key points that make the research different from the key paper "The Trial Compilation of Agriculture Purchasing Manager’s Index for Taiwan: The case of Taiwanese Hog industry (Tien, 2018)." First, collected 6 variables in the key paper from Council of Agriculture Executive Yuan, including total traded amount, weight per pig, average price per kilogram, slaughtered amount, farms amount and total weight. We used the PMI variables from Chung-Hua Institution for Economic Research and fitted in hog variables with similar definition. Then conducted one combination of hog data sets from these 6 variables. Second, the software has been used in the key paper is XLSTAT. XLSTAT is a statistical software & data analysis add-on for Excel. In order to enhance analytical efficiency, we decided to use the new software, SAS. SAS are more common and also provide more data-analysis functions. Considering whether SAS effect the analytical results. We inserted same open data into two different software to compare and test analytical path. The test demonstrated the same result between XLSTST and SAS that these two software have similar analytical path and method. Therefore SAS would not affect the effectiveness of the data.

<table>
<thead>
<tr>
<th>Chung-Hua Institution for Economic Research selected variables for non-manufacturing index (called “key paper”)</th>
<th>Hog industry for APMI</th>
<th>Data resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity</td>
<td>Total traded amount, Council of Agriculture Executive Yuan*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weight per pig Council of Agriculture Executive Yuan*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total weight Council of Agriculture Executive Yuan*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slaughtered amount Council of Agriculture Executive Yuan*</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 1 APMI variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Note: Website of open data: <a href="https://eng.coa.gov.tw/">https://eng.coa.gov.tw/</a></td>
</tr>
</tbody>
</table>
The research methods consisted with three steps. Step one, conducted feasible hog data sets of principal component analysis (PCA) with new software, SAS. PCA technique is applied to transform a large set of correlated variables into a smaller set of uncorrelated variables. The principal component are linear combination of the original variables with mathematically characteristic vector or correlation matrix from the original variables weight. Therefore it can be claimed that PCA provide another weighting scheme.

Then collect 2012 to 2016, January to December total 59 months’ open data from government-website open data. According to the definition of PMI which use the data for latter month minus data for previous month that get variation of each month. The diffusion index are followed by the volume of open data variation, including positive, unchanged and negative variation. Diffusion indexes (DI) has 3 level and each has represent one specific number, when variation is positive that DI equal 1, variation is unchanged that DI equal 0.5 and variation is negative that DI equal 0.

Step two, conduct principal component analysis for feasible hog data sets in the new software, SAS. Calculated the contributions of variables with eigenvector in excel. The equation of contribution: eigenvector multiplied by the sum of square of each principal component.

Table 2 Eigenvector of one of feasible hog data set

<table>
<thead>
<tr>
<th>Eigenvector</th>
<th>PRIN1</th>
<th>PRIN2</th>
<th>PRIN3</th>
<th>PRIN4</th>
<th>PRIN5</th>
<th>PRIN6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade amount</td>
<td>0.558476</td>
<td>0.11078</td>
<td>0.0782</td>
<td>-0.076983</td>
<td>-0.405992</td>
<td>0.706372</td>
</tr>
<tr>
<td>Weight per pig</td>
<td>0.260088</td>
<td>-0.587611</td>
<td>-0.281934</td>
<td>0.701899</td>
<td>0.108298</td>
<td>0.056474</td>
</tr>
<tr>
<td>Average price per kilogram</td>
<td>-0.09849</td>
<td>0.749496</td>
<td>-0.060683</td>
<td>0.648899</td>
<td>-0.061629</td>
<td>0.00234</td>
</tr>
<tr>
<td>Slaughtered amount</td>
<td>0.538584</td>
<td>0.227004</td>
<td>0.087635</td>
<td>0.701899</td>
<td>0.108298</td>
<td>0.056474</td>
</tr>
<tr>
<td>Total Weight</td>
<td>0.563557</td>
<td>0.059667</td>
<td>0.051839</td>
<td>-0.096137</td>
<td>0.800634</td>
<td>-0.021429</td>
</tr>
<tr>
<td>Farmer amount</td>
<td>-0.05558</td>
<td>-0.160018</td>
<td>0.948867</td>
<td>0.266156</td>
<td>0.010834</td>
<td>-0.00077</td>
</tr>
</tbody>
</table>

Table 3 Contribution of one of feasible hog data set

<table>
<thead>
<tr>
<th>Contribution</th>
<th>Trade amount</th>
<th>0.312</th>
<th>0.012</th>
<th>0.006</th>
<th>0.006</th>
<th>0.165</th>
<th>0.499</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight per pig</td>
<td>0.068</td>
<td>0.345</td>
<td>0.079</td>
<td>0.493</td>
<td>0.012</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>Average price per kilogram</td>
<td>0.010</td>
<td>0.562</td>
<td>0.004</td>
<td>0.421</td>
<td>0.004</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Slaughtered amount</td>
<td>0.290</td>
<td>0.052</td>
<td>0.008</td>
<td>0.009</td>
<td>0.641</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Total Weight</td>
<td>0.318</td>
<td>0.004</td>
<td>0.003</td>
<td>0.000</td>
<td>0.179</td>
<td>0.497</td>
<td></td>
</tr>
<tr>
<td>Farmer amount</td>
<td>0.003</td>
<td>0.026</td>
<td>0.900</td>
<td>0.071</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Step three, Use the contribution from first principal component multiplier by the diffusion index of each variable to get the APMI. Due to the GDP of Taiwan’s agriculture industry presented yearly. To meet the definition of PMI, we computed total weight multiplied by average price per kilogram to have the total revenue that represent the GDP of hog industry. After that, analysis the coefficient correlation with regression between monthly APMI and total revenue. They will be used to interpret relationship between variable and macroeconomic index.

Table 4 The correlation coefficient of feasible data set

Findings

Findings of this research had found one of the PCA data set is able to interpret 68 percent of variability of total revenue in hog industry. In this PCA data set, variables: total traded amount, weight per pig, average price per kilogram, slaughtered amount, farms amount and total weight are included.
Pearson correlation coefficient, N = 59  
Prob > |r| : Rho=0

<table>
<thead>
<tr>
<th></th>
<th>APMI</th>
<th>Total revenue variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>APMI</td>
<td>1.00000</td>
<td>0.68536</td>
</tr>
<tr>
<td></td>
<td>&lt;.0001</td>
<td>1.00000</td>
</tr>
<tr>
<td>Total revenue variation</td>
<td>0.68536</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Table 5 the contribution of feasible data set

<table>
<thead>
<tr>
<th>Contribution</th>
<th>PRIN1</th>
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<th>PRIN3</th>
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<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Construct the equation with first principal contribution of feasible data set.  
APMI for hog industry = 0.312(Trade amount) + 0.068(Weight per pig) + 0.01(Average price per kilogram) + 0.029(Slaughtered amount) + 0.318(Total Weight) + 0.003(Farmer amount)

Considering the persuasion of the finding, we interviewed with specialists to know whether these variables of APMI meets the practical status. In further research, we would put the efforts on finding the highest data set of hog industry, and develop APMI for other agriculture industries as well.
Connecting the Dots between University Research and Industrial Revolution

Ahmad Bashawir Abdul Ghani
Vice Chancellor, Universiti Utara Malaysia

Paper ID: ICBM-19-1173

Abstract – Do we realize that most of the researches done at universities are not in sync with the dictates of industrial revolution? There are many researches in business and management published in multitude of journals. However, it has a low level of industry take up and focused. The reason being scholars were misled to believe that the citation count receives are indications of the positive impact of their research as opposed to the potential to improve the decision making of practitioners or the industry. To address this issue and connect the dots, there is a need to fundamentally change the research approach that engenders a significant increase in industry focused research while ensuring that the existing academic research capability continues to develop. This study proposes a mechanism for connecting the dots between research on managerial or corporate processes and the processes affecting organizational competitiveness and societal well-being. Universiti Utara Malaysia (UUM) addresses the issue by setting up the Tun Dr. Mahathir Mohamad’s Thought Institute (IPDM) where key clusters are established with focused research activities that contribute to the socio-economic development and sustainability of the industry and people. The said institute undertakes collaborative ventures with the industry and also research collaborations with distinguished universities especially with the world's top 100 Universities. In the context of Bangladesh, the country researchers can look at UUM’s experience in assisting Malaysia forge ahead economically and socially. Bangladesh universities can play a significant role in increasing the Bangladesh industrial competitiveness globally. There are several research areas that the academics can undertake relevant and impactful industry focused research. If this is feasible, eventually you can see the dots connected. As academicians and researchers, our role is to act as the bridge that links the two sides. Overall, this keynote will address the following questions that will provide significant benefits to both academia and industry: What is the current problem in overall university academic research in business and management?; The importance of connecting the dots between university research and industrial revolution.; How to enhance the practical relevance of industry focused research in academia?; How UUM is gearing up towards industry focused research to have more impact?; and How Bangladesh universities can align academic research with Bangladesh industrial competitiveness and societal wellbeing?

Introduction

The theme of the 2nd International Conference on Business and Management (ICBM, 2019) is Industry Focused Global Research Trends in Business and Management – simply said, relevance. This emphasizes that business and management researches need to be more relevant to the world outside academia. Do we realize that most of our university research is not in sync with industrial revolution? Globally, we produce high-level researches in business and management. However, it has a low level of industry take up due to low levels of industry focused researches. In response, we need a fundamental change in approach that engenders a significant increase in industry-focused research while ensuring the existing academic research capability continues to develop.

Before we go further, we need to consider the main reasons why academics undertake research activities. Some of us are interested in understanding the world around them and this is referred to as passion. Others see research as a means of enhancing their teaching. Some are doing for promotion purposes and lifestyle in order to go for conference and securing research grants. If we see from the university’s perspective, research agenda is a significant source of revenue for universities. In a sense, academic research is now a vehicle to generate income for universities. Furthermore, universities increasingly look at research as necessary to maintain their ranking and academic reputation locally, regionally and globally in various ranking bodies such as Quacquarelli Symonds (QS) Ranking, Times Higher Education (THE) and Academic Ranking of World University (ARWU) and also to fulfill the requirement of accreditation bodies for instance Association to Advance Collegiate Schools of Business (AACSB), Association of MBAs (AMBA), EFMD Quality Improvement System (EQUIS) and Accreditation Council for Business Schools and Programs (ACBSP).

From here, we can see where we are heading actually. We need a fundamental change here in order to carry out more industry-focused research, which can improve the decision making of practitioners and policy makers. The research interests of academics and industry are often quite different however; there are opportunities to produce good research that can assist industry. First, it is imperative to understand industry needs. Mostly, scholars measure the impact of research based on the citation count, but in the true term, research is relevant if it has the potential to improve the decision making of practitioners. Relevant research should articulate implications that encourage practitioners to take action based on the findings. There are several ways academic researchers can enhance the relevance of industry focused research.

In academic world, some scholars have industrial experience and some without industrial experience, but
we need to fill the gap between our perceptions and realities in industrial issues and operational matters. One of the easiest ways to learn about industry needs is by reading reputable industry related magazines or newspapers such as Forbes, Bloomberg Business Week, Entrepreneur, Fortune, The Economist, Harvard Business Review, Wall Street Journal, Financial Times and The Business Times. Furthermore, academics may participate in industry exhibitions and trade shows to know the current developments in fourth industrial revolution.

Next, academicians can learn about the industry needs by conducting field visits and interviewing practitioners. By doing field visit, academics can observe the real practice in the workplace which can help to write teaching cases. On the other hand, by interviewing the practitioners, scholars can learn how they perceive the real problem in industry and able to seek their ideas for constructing research questions, research objectives and hypotheses development that more relevant to the industry needs. Next, academicians can be co-author with practitioners to get access to vast amount of internal data and this will lead to construct relevant research issues. This will also encourage academicians to share their research findings with practitioners. By doing this, we can integrate theory and practice. I personally believe that theoretical concept should be learnt through practice.

As we know, every business school aims to be accredited by AACSB. This is because: AACSB accredits business schools that meet standards of excellence in research, teaching, and outreach. As the largest and longest standing accrediting body for business schools, AACSB ensures business schools deliver high-quality education to their students by demanding that accredited colleges develop and implement high academic standards and demonstrate processes in place for continuous improvement.

AACSB’s mission is to foster engagement, accelerate innovation, and amplify impact in business education. According to Le Clair, AACSB’s Chief Strategy and Innovation Officer, currently AACSB has enlarged its mission to “fostering engagement between academia and practice, to accelerate innovation to amplify the impact”. Therefore, they organized Co-Lab: Connecting Business Schools with practice conference series, which brings together academicians and industry partners such as General Motor, Coca-Cola, Booz Allen, Patagonia, Microsoft, Dropbox, KPMG and others. It is also making an effort to involve industry partners in programme accreditation process.

Hence, AACSB requires intellectual contributions that impact society both by advancing management knowledge and practice by addressing important policy questions. Other accreditation bodies also emphasize on academia and industry engagement as important criteria to be fulfilled by universities to merit the accreditation. What appears to be important is a mechanism for connecting the dots between research on managerial or corporate processes and processes affecting organizational competitiveness and societal well-being. Consequently, the need for more relevant research is a concern in all the disciplines and academic departments beyond business schools.

I am honored and humbled to be given this opportunity to share my experience and in my capacity as the Vice-Chancellor of Universiti Utara Malaysia (UUM), on how we address the issue of Connecting the Dots between University Research and Industrial Revolution here in this conference. UUM espouses three core values; Knowledge, Virtue and Service. Since its inception in 1984, the university has evolved and progressed in tandem with the rapid changes around the world specifically in the field of research. We are now ranked at 128th position in QS-Asia University Rankings 2019 and 601-650 in the QS World University Rankings 2019. We are also one of the top 20 universities in ASEAN. Meanwhile, among nations of Emerging Economies University Rankings 2019, UUM soared up to the 201-250 position compared to its previous position at the 251-300 rung.

In terms of professional accreditations, UUM receives AACSB, AMBA, EPAS, ABEST 21, IQA CEEMAN and AUN-QA. I wish to highlight that one of our graduate schools, the Othman Yeop Abdullah Graduate School of Business (OYAGSB UUM), has received the ISO9001:2015, ISO14001:2015, SR10:2015, and GC-Mark (Verified Green University) certifications. Despite the phenomenon of ‘mad rush’ by many universities to attain better rankings and ratings, UUM will continue to focus on integrating education based on its core values—Knowledge, Virtue Service and to champion the philosophy of “humanizing education”.

A case worth highlighting, at UUM, we have established an institute with a clear mission and that is to act as the ‘bridge’ that links the two different worlds, namely academic and industry. The Tun Dr. Mahathir Mohamad’s Thought Institute (IPDM) has a number of key clusters that undertake research activities that have high impacts on the socio-economic development and sustainability of the industry and people. In addition, the IPDM is embarking on collaborative ventures with the industry and also research collaborations with leading universities especially those in the top 100 universities in the world. We do not rest in our laurels for the challenge to achieve success is huge! We have also created six (6) University Centers of Excellence (UCoE) and twenty five (25) School Centers of Excellence (SCoE) to strengthen the industry focused research agenda and engagement with stakeholders.

With regard to Bangladesh, the country has the world’s attention with its fast growing manufacturing sector especially in the garment industry. The slogan “Digital Bangladesh” of the Government of Bangladesh has special significance for national development. Bangladesh has an impressive track record of growth and development and aspires to achieve middle-income status by its 50th birthday in 2021. Currently, Bangladesh has been ranked 103 out of 140 countries in

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the Global Competitiveness Index (GCI) 2018 by the World Economic Forum. Bangladesh’s overall score has marginally improved in 2018, but its competitiveness has been weakened in most of the indicators, both in rank and score. Bangladesh has not fare well in the rankings for business dynamism and product market development. The main issues compounding are the cost of doing business, time needed to start a business, insolvent regulatory framework, growth of innovative companies, taxes and subsidies, extent of market dominance, tariff and non-tariff barriers, and efficiency of clearing processes. Corruption is the evil and disease that plague every country! This remains the main stumbling block or problematic factor for doing business in Bangladesh and further compounded by inadequate infrastructure and inefficient bureaucracy. It is here that we, the academics, can assist and see it as a tremendous opportunity to contribute towards creating a better and sustainable society.

Bangladesh universities can play significant role to increase the Bangladesh industrial competitiveness globally. These are several research focus areas which require more relevant and impactful industry focused research. If this is feasible, eventually you can see the dots connected.

In conclusion, in my keynote address, I have put forth the following questions that can shed lights to significant benefits to both academia and industry namely; What is the current problem in overall university academic research in business and management?; The importance of connecting the dots between university research and industrial revolution.; How to enhance the practical relevance of industry focused research in academia?; How UUM is gearing up towards industry focused research to have more impact?; and How Bangladesh universities can align academic research with Bangladesh industrial competitiveness and societal wellbeing? I totally believe that we can ultimately connect the dots between university research and industrial revolution.

References
Business Analytics – Leveraging The Power of Data

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Paper ID: ICBM-19-0338

Abstract – Data Analytics is gaining considerable momentum due to the emergence of data in large volumes, from variety of sources, at high velocity with the rapid advancement of technology and computational power. In this article, leveraging of data for analytics in the perspective of a Manager is discussed. The power of data in decision making is highlighted. Data-driven decision making has a larger influence in business outcomes. The data sources and data structure are presented. Descriptive, predictive and prescriptive analytics are described. A brief account of the domains of Business analytics is given. Applications of Analytics in specific service sector industries like Consumer Packaged Goods (CPG), telecom, utilities and health care are also presented.

Keywords – Data, Analytics, Data Structure, Data Warehouse, Data Mining

I. INTRODUCTION
Data has become one of the most important assets of the present day business world irrespective of the size of the organization. Technological developments which used to happen in a century is now taking place within a decade. With the development of Information Communication Technology (ICT), there is an exponential growth of data from multiple sources including business interactions, transactions, social networking and sensors. Data is the building block for data driven decisions. Data-driven organizations have better productivity and higher profitability compared to their peers who do not implement the principles of Business Analytics. Business Analytics is defined as the analysis of enterprise data on multiple perspectives to gauge and enhance the performance of the business. Analytics envisages the use of data, information technology, statistical analysis, quantitative methods and mathematical or computer based models to help managers gain improved insights about their business operations and make better fact-based decisions. The data driven decisions result in changing the business process and actions so that they are focussed towards achieving organizations’ target objectives. Business Analytics is relevant for big business as well as small business. Business Analytics delivers the right decision support to the right people in the organization at the right time so as to arrive at rational decisions to suit the strategic, operational or market conditions. The analytics is not for standard reporting but to support innovation and will be linked to the organizational strategy. Business Analytics gives the answers to the questions such as ‘Why did it happen?’, ‘Will it happen again?’, ‘What will happen if we change X?’, ‘What else the data tell us what we never thought to ask?’ and ‘What is the best that can happen? Business Analytics Information System consists of three elements namely Technological Elements, Human Competencies and Business Process. The information strategy should be in tune with the overall business strategy and the Business Analytics based on the business driven environment. The information requirement is passed down from the business driven environment to the technology driven environment and the information supply moves upwards from technologically driven environment to business driven environment. In between there are different layers consisting of top management, operational decision makers, analysts, controllers and report developers, ETL(Explore, Transform and Load) developers and database specialists and IT professionals.

Scope of Business Analytics
Some common type of decisions that can be enhanced by using analytics include pricing decisions, decision to target consumer segments, merchandizing decisions, decisions on operation and supply chain, finance, marketing and human resources management. Business Analytics has the advantage of eliminating guess work and it gets faster answers to the queries. It gets insights into the customer behaviour and identifies opportunities for cross selling and upselling. Business Analytics finds extensive application in market analysis, consumer behaviour, social networking, crime detection, health care, cyber security, risk analysis and fraud analysis. Business Analytics gets business metrics reports when and where it is needed and it has got a strong relationship with profitability of the business, revenue of the business and shareholder’s return. It enhances understanding of the data which is very vital for the business to remain competitive. It enables the creation of informative reports.

The scope of data analytics includes descriptive analytics to understand past and present with the use of data, predictive analytics to analyse past performance to predict future and prescriptive analytics for optimization techniques. Descriptive analysis is most commonly used and it involves categorizing, characterizing, consolidating and classifying data for getting insights on the business performance. Data can be summarized in the form of meaningful charts and reports. Predictive analysis analyses past performance to predict the future by examining historical data, identifying relationships in these data and extrapolating for the future. Predictive

decision models often incorporate uncertainty to help managers analyse the risk. Prescriptive analytics uses optimization techniques for the identification of best alternatives. Companies engaged in health care, telecom, retail and consumer packaged goods draw insights from data analytics for achievement of steady growth. The potential of web analytics and social media analytics is exploited by business organizations.

II. LITERATURE REVIEW
The subject of this paper is an emerging area and only few published materials are available. The available published materials and observations during the researcher’s long industrial experience is taken in to account in preparing the paper.

III.METHODOLOGY
The study is based only on published materials and observations.

IV.DISCUSSION
Business Analytics Process
Business Analytics should be linked to the business strategy. The business analytics process starts with an understanding of what the business would like to improve on or the problem it wants to solve. The key questions to be answered are ‘What data is available?’,’ How can it be used?’, and ‘Is sufficient data available?’.

The data requirements are decided by the stakeholders, business users with the domain knowledge and the business analysts. Exploring the data involves cleaning the data, making computations for missing data, removing outliers and transforming combinations of variables to form new variables to make better sense of data. The data is analysed and prediction of what is likely to happen be made. The optimization can be attempted for finding the best solution. Then decisions can be made and outcome can be measured. The system can be updated with the results of the decision.

Commercial software packages are available to facilitate the application of business analytics. The software is not only expensive and requires special training to understand and apply, but also requires specific computer program. Spreadsheet software is widely used and it is an effective platform for manipulation of data and developing models.

Big Data
The massive amount of data, known as big data, is of no value to business if it is not utilized after sorting and analysis, to make use of for decision making and predicting the future. Business world is moving towards transforming transactional data into business insights. The use of big data becomes prominent since internet and social media enterprises like Amazon and Google started taking advantage of it. The ecosystem of the information system has undergone a dramatic change with the inclusion of a variety of data from social media, mobile applications, financial data and several other data generating applications. Clean and defect free data are vital to business. Poor quality data leads to wastage of time in reconciling and loss in credibility of the system. Qualitative data can only lead to right business decisions. Characteristics of good quality data are accuracy, validity, timeliness, reliability, relevance, completeness and accessibility. The major challenge is in the storage, integration, reconciliation of data from multiple disparate sources across several business functions and continuous updates to the data warehouse.

Data Structure
The data is available in three forms namely Structured, Semi structured and Unstructured. The structured data can be easily stored and is scalable. Such data conforms to a data model stored in rows and columns. Updating, deleting, ensuring security and easy retrieval is possible and indexing, searching, data mining and Business intelligence operations can be attempted. Business intelligence refers to a set of concepts and methodologies to improve decision making in business through facts and facts-based systems. Since data is in an organized form it depicts relationship between entities. Similar entities are grouped and attributes in a group are the same. Data stored in a database corresponds to a structured data. But semi structured data does not conform to a data model, but has some structure. Such data is not in the form which can be easily processed using a computer program. Meta data may be available but not sufficient. Meta data is a set of data that describes and give information about other data. Semi structured data include e-mail, XML and HTML. Semi-structured data can be managed using schemas, which consists of a collection of database tables and field in each table and relationship between fields and table are taken into account. Graph based models are also employed. The examples of unstructured data include PPT, videos, letters, memos and, body of an email. The challenges faced in the case of unstructured data includes storage space, scalability, retrieval of information, ensuring security due to varied sources, updating, indexing and searching. Unstructured data does not confirm to a data model and data in such form cannot be easily processed using a computer program. Content Addressable Storage (CAS) and Unstructured Information Management Architecture (UIMA) are used for processing unstructured data. CAS is based on meta data and retrieval is based on content and not location. UIMA is an open source platform from IBM.

Database and Data Warehouse
A database is a logically coherent collection of data with some inherent meaning and it represents some aspects of real world. Database is designed, built and populated with data for specific purpose. Relational database is a collection of data items organized as a set of formally described tables from which data can be accessed or reassembled in many different ways without having to reorganize the database tables.

Data warehouse is subject oriented, integrated, time variant and non-volatile collection of data in support of
management decision making process. Data from several heterogeneous data sources can be extracted and brought together in a data warehouse. Data can be conveniently retrieved for analysis and generating reports. Data warehouse supports fact based decision making. Data mart is a focussed subset of a data warehouse that deals with a single area of data that can be used for analysis, reporting and decision support.

**OLTP and OLAP**

OLTP stands for On-Line Transaction Processing and it supports online transactions and query processing. Data captured by OLTP systems are stored in commercial relational data bases. OLTP is widely used in industries like retail stores, airlines, banking and insurance. The source of data is from operations or transactions. The system is simple, efficient and fast in simple query processing. It helps in the day to day operations. OLTP systems are concerned with entry, storage and retrieval of data. The data content in this system is not suitable for decision making since it manages only the current data within an enterprise. OLTP system requires support for concurrency control (locking) and recovery mechanisms (logging).

On-Line Analytical Processing (OLAP) differs from OLTP. The data is held in dimensional form than the relational form and carries multi-dimensional data model viewing data in the form of a data cube. Unlike OLTP, the OLAP capture data from multiple operational sources, transformed and loaded into the data warehouse. It enables planning, budgeting, forecasting and decision making and makes complex queries involving aggregations possible. OLAP systems need separate data warehouse built for them. OLAP system requires a read only access to data records for summarization and aggregation. Examples of OLAP include Data Mining, Text Mining and Web Mining. OLAP data cube operations consists of Slicing, Dicing, Rolling Up or Drilling-up, Drilling-down. Pivoting, Drilling across and Drilling-through.

Slicing refers to filtering or selecting data using one dimension of the cube whereas dicing is filtering data using two or more dimensions. Roll-up or drill-down is viewing data at a higher level of hierarchy of a dimension and rolling-down is viewing the data at a lower level of hierarchy of a dimension. Pivoting relates to rotating the data to an alternate representation. When data is viewed across two or more fact tables, it is called drill-across. If the data is traced back to the operational data source it is named as drill through.

**Data Mining**

Data mining refers to processing of large volume of data stored in the data warehouse, searching for patterns and relationship within the data. Assessment of business performance is viewed from four angles namely financial, customer, internal processes, learning and growth.

**Data Visualization**

Data visualization can help the business users to understand analytics’ insights and shows the reasons behind certain recommendations making sense. Data visualisation technologies and platforms are offered by traditional business intelligence and analytic vendors.

**Enterprise Reporting**

Balanced Score card and dashboards are performance measurement systems, built on integrated data, usually a data warehouse. Scorecards measure performance against strategic goals and dashboard resembles an automobile panel, indicating real time information using graphical elements. Balance scorecards and Dash boards use Key Performance indicators (KPI) which are tied to a target. It indicates how far a metric deviates from the pre-determined targets.

**Domains of Business Analytics**

**Analytics in Finance**

Financial controllers are under pressure to manage cash flow and meet the challenges in capital acquisition for growth in revenue and enhancing margin. This necessitates more proactive use of data to drive business outcomes. The analytics employed include reactive analytics, decision analytics, forecasting analytics and predictive analytics. Leveraging analytics as a continuous process enables Finance Managers to improve business metrics. Data Analytics enables to identify patterns and help in developing heuristic models to predict inefficiencies in process. Predictive analytics make known the possibility of default before its happening, paving the way for corrective action.

**Analytics in Banking**

Drivers of analytics in banking are competitive advantage, compliance, profitable growth, and solvency. Major challenges in competitive advantage are the i) eroding product differentiation and customer loyalty, ii). explosion in volume, velocity and variety of data and iii). faster response to changing macroeconomic variables. As regard to compliance the major challenges are evolution of more stringent regulatory environment, increasing cost of compliance and significant risk of non-compliance. Greater volatility across asset class, losing money in traditional banking, increasing incidence of fraud and integrated risk management at enterprises level influence profitable growth and solvency of banking institutions. The analytics deployed by banks ranges from basic reporting to descriptive, prescriptive and predictive analytics. Key challenges in implementing business analytics in banking are the multiple competing priorities, talent crunch, functional silos and inadequate data and system infrastructure.

**Credit Risk Analysis**

Credit risk exists when the borrower fails to repay a loan according to the terms and conditions of a loan, either making a total default or making late payments of the interest and principal. Goal for credit risk analytics is to make profitable loans with minimum risk. Credit risk analysis consists of collection of past history of borrower in paying bills(Character), borrowers wealth position(Capital), possession of assets by the borrower of assets that backup the loan(Collateral), trends, volatility of the borrower’s industry(Conditions) and legal
standing and the ability of the borrower to generate loan payments on a consistent basis (Capacity).

**Fraud Detection and Prevention Analytics**

Fraud Analytics refers to identification of wrong actions and its prevention, actions by wrong people and suspicious actions. Fraud analytics process includes data mining, discovering meaningful new relationships, patterns and trends by sifting through the data using pattern recognition technologies as well as mathematical and statistical techniques. Non-fraudulent behaviour is assumed as normal and exceptions are found.

**HR Analytics**

The role of HR is very critical to an organization in designing policies and procedures to foster right behaviour and actions delivering business performance. The recent challenge is to demonstrate a link between the HR function, business strategy and performance using data. Recent developments highlights the benefits of data based decisions in HR management and opened up a new field called HR analytics or workforce analytics or people analytics. It involves a systematic collection, analysis and interpretation of data for improving talent management decisions. HR functions include the process of collection of different types of data regarding employees to gather inputs on attritions, rates of absenteeism, cost per hire, training hours per employee, etc. which provide status on what has happened or what is happening. The deployment of HR analytics can impact business outcome such as productivity, sales, profitability, and consumer satisfaction by the adoption of an HR management system covering all HR practices. Performance and skill gap analytics, Compensation and benefit analytics, Training and learning analytics, succession planning analytics, Attrition and retention analytics form part of HR analytics.

**Marketing Analytics**

Successful marketing involves sending right content over right channel at right time with right frequency to right customers. Analytics help to determine what is right. Customer is the key element in the value creation process. A marketer should focus on creation, enhancement and maintenance of customer value. Marketing data analytics help to optimize the marketing effort and ensure focus on the right set of customers. Marketing Data Analytics gives actionable insight right from the identification of best customers to decisions on where to invest marketing budget. Creation, enhancement and maintenance of customer value has become the cornerstone for enhancing the value of a firm in the present day business environment. The logic of marketing data analytics involves exploration, explanation, prediction, validation and updating. The collection of customer data consists of contact information, demographic indicators and behaviour indicators. Customer data can be collected from sources like websites, social media, landing pages, in-store tablets, and from marketing tools capturing user behaviour. The collected data is to be cleaned by removing duplicate data, ensuring consistency and updating missing data. Analytical techniques such as RFM (Recency, Frequency and Monetary), LTVC (Life Time Value of a Customer), and Segmentation and Clustering can be applied. RFM gives an insight into how recent was the purchase, how often the customer purchase and how much the customer has spent. This enables to find out the best customers quantitatively. RFM results can be used for reaching out to the best customers, making them brand ambassadors and aligning the marketing expenses in a better manner. LTVC enables to identify the value the customer will bring over his/her life time. This helps to determine the right amount of money to invest in acquiring customers and to analyse customer acquisition strategy and to consolidate marketing budgets. Segmentation is the subdivision of a market into discrete customer groups that share similar characteristics. Clustering is putting together similar individuals to target them better. Statistical packages like SPSS, SAS etc. can be used for converting data into tangible results.

**Analytics in Operations**

Efficient and effective operations management forms the key functional area in defining an organizations success in the present day business environment. Data Analytics in operations covers forecasting, operations planning, inventory analytics, supply chain analytics, product/process management etc.

**Web Analytics**

In the present world of enriched data, web analytics helps to evolve effective marketing policy, achieve true connectivity with the audience, provide improved customer experience on the sites, manage investment of the meagre resources and attain an improved business outcome. Web Analytics Association defines web analytics as the practice of measuring, collecting analysing and reporting on internet data for the purpose of understanding how a web site is used by its audience and how to optimize its usage. Web Analytics refers to the study of the behaviour of visitors of websites. The data collected from a website is used to determine which aspects of the website achieve business objectives. The study of the visitor, navigation and traffic patterns enables to determine the success of a website. The data sources include server logs, visitor’s data, search engine data and defined conversation funnels. The tools for web analytics that are commonly used are W-usage, Urchin 5 software and Google Analytics. The web site uses cookies to maintain information about a visitor’s interaction with the website, for authentication or for simple tracking purpose. Web cookies refer to tiny text files sent from the web server to visitor’s browser to provide some information about the visitor.

**Social Media Analytics**

Information about customers’ opinion and suggestions play a critical role in the growth and development of an organization. Any flaws in the product offerings can be captured and corrective decisions can be taken based on the same. Internet based social media has opened up a new way for companies to communicate with prospects.
or existing customers and communication between prospects and consumers. Social media has become a channel of acquisition of new customers for many organizations. The communication from consumer to consumers, happening beyond the control of consumer, poses challenges to the marketers. Social media analytics can be used for different purposes such as crisis management; market management and... brand management. Social media data supplements existing data sources for new marketing capabilities. Analysis of social media and customer information data sources are used to gain customer insights and results in informed sales, marketing and service actions. The new marketing capabilities include understanding consumer sentiments to protect and improve brand and corporate image, improving consumer value and loyalty through trade promotion optimization and creating innovative products and services based on consumer desire. A major challenge with social media big data is in deriving contextual information. Social media data is unstructured unlike other customer data from retail and banking which are structured. Organizations are interested in capturing contextual conversations and other widely available sources of unstructured data from social media such as blog commentaries and other sources on real time and put them side by side with the structured data in their information eco system for a much clearer picture of what is going on. Sentiment Analysis can be carried out using data from social media. Sentiment analysis is the computational study of people’s judgements, emotions, behaviour and opinions towards a product or an event or their attributes.

**Business Analytics in Service Sectors**

Business Analytics finds applications in service sectors such as consumer packaged goods, telecom utilities and healthcare.

**Consumer Packaged Goods**

Consumer Packaged Goods (CPG) companies, are facing challenges due to changing consumer behaviour along with shortening customer loyalty periods. Hence those companies are in search of innovative methods to reach the end consumer. Those companies apply analytics with the right data to get insights for translating into action. Retailers and CPG companies used to track items sold to every customer at every store through bar coding. They also use market research techniques and social media to collect variety of data. Data analytics has roles to play in inventory management, portfolio optimization, marketing mix and pricing.

**Telecom**

Communication service providers are very well aware of the fact that they must not only deliver targeted personalized products and services but also use the software based advanced analytical tools to retain their best customers, acquire new customers, generate innovative opportunities and effectively resolve issues to improve their competitive and market place position. An integrated location analytics platform gives decision makers the tools to assemble, explore and display wide range of location oriented data sets like transactions, channels and customer locations by network type which enable them to perform advanced analytics, leading to faster and smart decisions. A deeper insight into customer usage, transactions and behaviour enables telecom companies to decide on their investment in new generation networks.

**Utilities**

Big data and analytics are transforming energy and utility sectors. It enables to better understand and shape customer usage, improve service levels and availability, and detect and prevent energy theft. Big data and analytics can drive real business value from grid operations, smart metering, and assets and workforce management.

**Healthcare**

Analytics plays a very critical role in health care industry. Predictive analytics uses technology and statistical methods to search through the massive amount of data to analyse and predict outcomes for individual patients. Doctors cannot possibly commit to memory all the knowledge they need for every situation and probably they do not have it all at their fingertips. Even if they have access to massive amounts of data needed to compare treatment outcomes for all the cases they encounter, they would require more time and expertise to analyse the information and integrate with patient’s medical profile. This type of in-depth research and statistical analysis is beyond the scope of a doctor’s work. Hence now doctors as well as insurance companies prefer predictive analytics. Predictive analytics is used to search through massive data and analyse it to predict outcomes for individual patients. The data can be from past medical treatment outcomes as well as from the latest medical research published in peer reviewed journals and data bases. Predictive analytics can also reveal surprising associations in data that human brains would never suspect. Predictions can range from responses to medications to hospital re-admission rates. It also predicts infections from methods of suturing, determines the likelihood of disease, helps physicians with diagnosis and even predicts future wellness. Prediction modelling uses techniques such as Artificial Intelligence to create a prediction profile based on data from old patients. The model is then deployed for prediction in the case of new patients for accurate diagnosis. Predictive analytics enhance the accuracy of diagnosis, help to administer preventive medicines and provide physician with the answers they are seeking for individual patients. The administrators of hospitals and insurance companies get predictions concerning insurance product costs. Pharmaceutical companies are also benefitted by getting insights regarding how to meet the needs of the public on medicines. The patient will also get the benefit of better outcomes.

**V. CONCLUSION**

Business Analytics will help managers in getting greater insights for successful business operations by making fact- based decisions, leading to improved competitive
advantage and performance. Unless appropriate strategies and execution plan are put in place, creating a data driven organization will be difficult. Big data analytics should be driven by business needs and not by technology. Building a culture that infuses analytics everywhere in the organization and investment in big data and analytics can transform the business to success in the present day competitive environment.

REFERENCES
Malaysian Harmony Index Based on Culture and Identity of the Nation

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Abstract – Culture and identity vary across the nation of a country where social norms of individual citizens would shape the individual behaviour thus the whole society. As Malaysia is moving towards a developed country, the stability of its nation is one of the benchmark that any potential investors and businesses look for. Thus, in this sense, it is important to maintain a harmonious environment throughout the country, which are greatly influenced by culture and identity of its multi-ethnicity of the people. Therefore, this study took the effort to develop a harmony index based on the existence of various culture and identity of the Malaysian nation. In the process of developing the index, a Multi-Criteria Decision Making (MCDM) approach is utilized in determining the importance of all relevant criteria as classified under national culture and identity. These criteria are those identified as contributing factors that support the harmonious living in the context of diverse Malaysian population. Subsequently, the concepts of weight and rank are embedded in the development of the index. As a result, a unique instrument is established such that the harmony level of a population or nation can be measured. The findings also reveal the degree of importance of each criteria under culture and identity. The index value obtained can be used to guide for national policy establishment and plan for appropriate activities by relevant government authorities.

Keywords – National Culture, National Identity, Harmony Index, Multi-Criteria Decision Making, Harmonious Environment
An Innovative Method of Retaining Best Faculty Through Faculty Performance Based Incentives

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Paper ID: ICBM-19-0857

Abstract – In any accreditation procedure ‘teaching learning process’ parameter plays a significant role. Best faculty are required to improve the quality of ‘teaching learning processes’. This paper discusses the biggest challenge of retaining best faculty in any educational institution through an innovative method called ‘faculty performance based incentives’. There are numerous methods to gauge the faculty performance globally and each educational institution has got its unique method. Student feedback, university results, teaching aids and attitude towards institution are considered for evaluating faculty performance in this method. This method was tried and tested continuously for three years in an institute and the results were appreciated by National Board of Accreditation (NBA) team of All India Council for Technical Education (AICTE).

Keywords – Faculty performance, Accreditation, Incentives, Teaching learning process, NBA, AICTE

1. Introduction:
The success of any educational institution lies in faculty strength. Retaining the best faculty is the biggest challenge faced by any organization rather than attracting them. All the successful institutions have their own innovative ways [3][4][5] of retaining the best faculty. This paper deals with ‘Faculty Performance Based Incentives’ a proven method of retaining the best faculty and thereby improving the quality of ‘Teaching Learning Process’ which is the major parameter for any accreditation process.

Faculty performance evaluation is a continuous process for the whole academic year. It is to be conducted for each semester and the benchmarks are to be updated at regular intervals. This process has been successfully implemented with good results in my previous institution Jagannadh Institute for Technology and Management (now Centurion University of Technology and Management, Paralakhemundi, Odisha, India).

2. The Evaluation Process:
The faculty performance evaluation process contains basically four aspects.

2.1 Feedback [1] from students: This is to be obtained through Hard Copy/Online format (Online advisable which saves lot of time, money and also accurate) twice a semester preferably immediately after internal exams (MID Exams) where we can get full attendance (100%) of students. This process carries 30% points.
Sample Feedback Analysis

Fac: Prof. XXXX

Code, Subject & Credits: ME 111 Engineering Graphics, 2 Credits

Semester & Batch: Sem II, B.Tech 2014-2018
Section: C

<table>
<thead>
<tr>
<th>Scale</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>No. of Students</th>
<th>Weighted Average</th>
</tr>
</thead>
</table>

Subject:
1. The Subject meets my expectations
2. The contents of the Subject are very useful
3. The Subject is well designed and structured
4. The Subject is useful to my career
5. Assignments and Examinations were very well designed to test my understanding of the Subject
6. Overall, this is an excellent Subject

Instructor:
1. Explains the material clearly and to the point
2. Is clear with the subject concepts
3. Is able to handle the class effectively
4. Involves the students in the class
5. Accessible to students in and out of the class
6. Relates subject matter with practical examples
7. Provides timely feedback on Tests and Assignments
8. Is very fair and objective in assessment
9. Overall, he/she is an excellent Instructor

Scale:
5. Strongly Agree
4. Agree
3. Neither Agree nor Disagree (Neutral)
2. Disagree
1. Strongly Disagree

Remarks from Office of the Dean:
Out of 58 students, 39 students have submitted their feedback.

Date: 07th Jul 2015
Prepared by: XXXXX
Director

Fig.1 Sample Student Feedback Format

Table 1 (Student Feedback)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Faculty</th>
<th>Subjects</th>
<th>Student Feedback in Odd Semester %</th>
<th>Average 100%</th>
<th>30% Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prof. Rama Swamy</td>
<td>MPMC(EEE), BE( Sec D)</td>
<td>70, 76, 73</td>
<td>73</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>Dr. Shaheeda Ali</td>
<td>EMT(ECE,EIE), SCI(EIE,IT)</td>
<td>80, 82, 77</td>
<td>80</td>
<td>24</td>
</tr>
</tbody>
</table>
2.2. University Results: The University results of the particular faculty’s subjects (average of the total number of subjects taken in that semester and average of both semesters for that academic year). This process also carries 30% points. The Table 2 shows the university results for odd semester for one particular department.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Faculty</th>
<th>Subjects</th>
<th>University Results in Odd Semester</th>
<th>Average 100%</th>
<th>30% Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1st</td>
<td>3rd</td>
<td>5th</td>
</tr>
<tr>
<td>1</td>
<td>Prof.Rama Swamy</td>
<td>MPMC(EEE), BE( Sec D)</td>
<td>46</td>
<td>35</td>
<td>74</td>
</tr>
<tr>
<td>2</td>
<td>Dr.Shaheeda Ali</td>
<td>EMT(ECE,EIE), SC( EIE,IT)</td>
<td>74</td>
<td>56</td>
<td>63</td>
</tr>
<tr>
<td>3</td>
<td>Dr.Anthony</td>
<td>MPMC(CSE), ACT( ECE)</td>
<td>37</td>
<td>86</td>
<td>70</td>
</tr>
<tr>
<td>4</td>
<td>Dr.Naidu</td>
<td>AEC( EEE,IT)</td>
<td>70</td>
<td>64</td>
<td>67</td>
</tr>
<tr>
<td>5</td>
<td>Prof.Khurana</td>
<td>AdEC(EEE), VLSI(EIE,ECE)</td>
<td>76</td>
<td>64</td>
<td>70</td>
</tr>
</tbody>
</table>

2.3 Teaching Aids: This section carries 20% points. This process is evaluated by judging the faculty preparedness and innovative methods to teach a subject in a classroom, like the class notes, Models (2D, 3D solid models), PPTs, Videos, and Use of web based materials, Computer Based Tutorials (CBTs) etc.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Faculty</th>
<th>Subjects</th>
<th>Feedback 30%</th>
<th>Results 30%</th>
<th>Teaching Aids 20%</th>
<th>Total 80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prof.Rama Swamy</td>
<td>MPMC(EEE), BE( Sec D)</td>
<td>22</td>
<td>13</td>
<td>14</td>
<td>49</td>
</tr>
<tr>
<td>2</td>
<td>Dr.Shaheeda Ali</td>
<td>EMT(ECE,EIE), SC( EIE,IT)</td>
<td>24</td>
<td>20</td>
<td>16</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>Dr.Anthony</td>
<td>MPMC(CSE), ACT( ECE)</td>
<td>25</td>
<td>19</td>
<td>14</td>
<td>58</td>
</tr>
<tr>
<td>4</td>
<td>Dr.Naidu</td>
<td>AEC( EEE,IT)</td>
<td>26</td>
<td>21</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>5</td>
<td>Prof.Khurana</td>
<td>AdEC(EEE), VLSI (EIE,ECE)</td>
<td>27</td>
<td>21</td>
<td>16</td>
<td>64</td>
</tr>
</tbody>
</table>

2.4 Attitude towards Institute: This is a very crucial and sensitive issue. This process judges the faculty’s seriousness towards teaching and institute. Like the way the faculty utilizes Casual Leaves, Earned Leaves,
Medical Leaves. How they are utilizing the permissions? How many times they are availing leaves even on loss of pay (ROP)? How many complaints (Academic and Non-Academic) are there during the academic year? This is to be carried out in a very confidential way (only Principal/Director’s office should monitor the details), yet transparent to the concerned faculty. This also carries **20% points.** This is for the whole academic year. To be added to the first 80% points of two semesters put together.

### Table 4 (Final Performance Sheet)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Faculty</th>
<th>Subjects</th>
<th>Overall Performance, 80%</th>
<th>Attitude 20%</th>
<th>Final 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Odd</td>
<td>Even</td>
<td>Average</td>
</tr>
<tr>
<td>1</td>
<td>Prof. Rama Swamy</td>
<td>MPMC(EEE), BE( Sec D)</td>
<td>49</td>
<td>57</td>
<td>53</td>
</tr>
<tr>
<td>2</td>
<td>Dr. Shaheeda Ali</td>
<td>EMT(ECE, EI E), SC(EIE, IT)</td>
<td>60</td>
<td>58</td>
<td>59</td>
</tr>
<tr>
<td>3</td>
<td>Dr. Anthony</td>
<td>MPMC(CSE), ACT(ECE)</td>
<td>58</td>
<td>64</td>
<td>61</td>
</tr>
<tr>
<td>4</td>
<td>Dr. Naidu</td>
<td>AEC(EEE, IT)</td>
<td>65</td>
<td>70</td>
<td>68</td>
</tr>
<tr>
<td>5</td>
<td>Prof. Khurana</td>
<td>AdEC(EEE), VLSI(EIE, ECE)</td>
<td>64</td>
<td>71</td>
<td>68</td>
</tr>
</tbody>
</table>

After accumulating all the data we can counsel the faculty on one to one basis and explain about the points obtained and we can give a hard copy of the details (only final points). The performance benchmarks are to be set and updated every year by an Internal Quality Assurance Committee (IQAC) which will decide incentives based on the above performance. These incentives are separate from the regular time based increments.

3. **Conclusions:**

After implementing this method successfully for three consecutive years (six semesters) it is observed that a significant improvement in the performance levels of the faculty. The attitude towards the institution also changed surprisingly. Since it is linked to monetary benefits, the attrition rate also reduced. Initially there will be resistance by the employees, but we have to counsel them with the benefits they are going to enjoy after a period of time. The method of implementation may be modified according to the existing framework of ‘performance evaluation’

4. **Acknowledgements:** The author is grateful to the management of Centurion University of Technology and Management, Paralakhemundi, Odisha for encouraging innovative ideas and giving a free hand in implementing the ‘faculty performance evaluation process’ successfully which was appreciated by the All India Council for Technical Education (AICTE) National Board of Accreditation (NBA) team.

5. **References:**


Artificial Intelligence Based Health Policy Drafting for Farmers of Odisha

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Abstract – Sixty nine percentage of Odisha population are farmers and they have increasing health related problems. The chronic diseases like poor hearing, poor eyesight, asthma, blood pressure, diabetes, cholesterol, skin disease, cancer and dementia are spreading fast among the farmers of Odisha. Disease related to BP and blood sugar affects 30% of the farmers of Odisha and is increasing every year. The have a sustainable development and food production, good health of farmers is of prime importance. The irregular food habit of the farmers during the cropping season and poor water for consumption affect their health. The outcome is many diseases with fatal consequences. Detailed study with clinical data are collected, analyzed to arrive at a conclusion that the chronic diseases are spreading fast among labor class of in agriculture sector. This has far reaching consequences. Planners and implementers have to join hands to see that the health issues of the poorest of poor farmer is resolved. Questionnaire has been developed, data collected using the random stratified sampling technique. The analysis has been made to find central tendencies and conclude the present status of communicable disease and chronic diseases. Dimension reduction analysis (PCA) has been conducted to fine the factors affecting jointly as principal and second principal component. The policy to be framed to decrease occurrence of disease in villages using the key players like government, political party, line department, agricultural workers, NGOs, private and government hospitals, medicine companies, interdepartmental convergence and finance (government / insurance company). The secondary stakeholders like climate and disease, trained doctors team, clean water and sanitation, nutritional security, pace of implementation of short term and long term curative and preventive plan, location specific remedial measures and web based governance. The data from the farmers are to be collected in raw accuracy format (low, medium and high) and using fuzzy logic and rules to be developed by the experts to know the action to be taken in different situations. The drafted policy will have most correlated and less numbers of factors to be considered so that the implementation efficiency is high. Similarly rule based FL will help the ground level workers to take correct decision and implement it for best efficient implementation. Web based governance will help to located the exact location of occurrence of the disease and plan remedial measure accordingly. Visible changes will help in building the confidence of the public and goal can be achieved in time.

Keywords — PCA – Principal component analysis, FL – fuzzy logic, LIC – Life Insurance Corporation of India. NGO – Non Government Organization.

I. INTRODUCTION

Food, cloth and shelter are required for survival; education and health are considered to be second top priority for human race. 68% to 72% of the population of many developing countries depend upon agriculture. The health of such agriculture worker group and planning for maintain good health for them is addressed in this research. Food habit, working style, water, addiction and its effect on health has been surveyed. Random, clustered, stratified sampling method has been used to select the peoples to be surveyed. 75 questions have been asked to all category of workers to know their health status. Six districts and 10 % of the villages are selected for such survey. 30% farmers from each village has been randomly selected to determine their physical, mental and social health. Attempt has been made to find out the status of chronic diseases (hypertension, diabetes, skin diseases, high cholesterol, and dementia) acquired by the farmers due to improper food and related habit. Identification of important parameters really causing such chronic diseases are to be determined using one dimension reduction analysis technique (PCA). Short term policy will be suggested to the state as well as central government to implement it on pilot scale in a cluster. GIS tools has been used to find out be clusters and their remedial measure. It has been planned to involve many line departments to help in achieving the target. Increasing farmers’ income can be achieved through such interventions. The parameters to be controlled and developed in the policy will be highlighted. The stakeholders are to be identified, the path of short term and long term goal are to be put in the policy. The experimental and implementation of the policy are to be done in phase manner as the acceptance of the recommendations may be accepted by the farmers in a low pace.

II. METHODOLOGY

Survey questionnaire was made with choice and radio buttons so that it can be filled in easily. The google form has used for collection of data. Validation has been conducted in nearby village of CUTM, Odisha. All surveyors are trained accordingly. [1]. Analysis of data was
Carried out using MINI TAB software. Dimension reduction tools (PCA) was used for the purpose [2].

Table 1 Demography of districts selected for survey

<table>
<thead>
<tr>
<th>District</th>
<th>Area (in km²)</th>
<th>No. of C.D. Blocks</th>
<th>No. of villages</th>
<th>Total population (in million)</th>
<th>% Rural population</th>
<th>Literacy %</th>
<th>Workers: cultivators &amp; agricultural labourers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayurbhanj</td>
<td>10,418</td>
<td>26</td>
<td>3,950</td>
<td>2.52</td>
<td>92.3</td>
<td>63.2</td>
<td>66.0</td>
</tr>
<tr>
<td>Jajapur</td>
<td>2,899</td>
<td>10</td>
<td>1,783</td>
<td>1.83</td>
<td>92.6</td>
<td>80.1</td>
<td>55.6</td>
</tr>
<tr>
<td>Gajapati</td>
<td>4,325</td>
<td>7</td>
<td>1,612</td>
<td>0.58</td>
<td>87.8</td>
<td>53.5</td>
<td>74.3</td>
</tr>
<tr>
<td>Balangir</td>
<td>6,575</td>
<td>14</td>
<td>1,783</td>
<td>1.65</td>
<td>88.0</td>
<td>64.7</td>
<td>68.4</td>
</tr>
<tr>
<td>Rayagada</td>
<td>7,073</td>
<td>11</td>
<td>2,665</td>
<td>0.97</td>
<td>84.8</td>
<td>49.8</td>
<td>74.4</td>
</tr>
</tbody>
</table>

**Fuzzy logic**: a proven tool was used to collect raw data which are inadequate to conclude with the best controllable output. The rules based controls will be developed and used for implementation of the policy [4]. Policy stake Holders analysis and data collection will be useful to draft a police for the state [5]. Draft policy will have short term – 5 years goal and a long term vision. It must cover climatic change factors.

All the stakeholders are to be pointed out, their responsibilities are to be spelled with job specification. Rule based governance will help all implementing persons to use the rule and implement it without any approval of the boss and other formalities.

**Questionnaire design:**
The questionnaire designed to collect the information on geographical location, individual health, alcoholism/consumption of tobacco, hearing, eyesight, blood pressure, diabetes, skin disease, cancer, dementia, anemic, side effect of pesticide use, safety during use of machinery, mental and psychological health, air / water born disease, food habit, farm accidents, open defecation, land holding, home, qualification and income. Google form was used to collect and upload data. All answer was codified for analysis in SPSS package.

Experts spend two days in Focus Group Discussion mode to finalize the questionnaire. The trial and validation test conducted and corrections are incorporated. The surveyors for NGOs were trained for two days to collect the data, upload to google form. The teams from NGO, academia and individuals visited the village with height, weight, measuring tape, sphygmomanometer, sugar and cholesterol movement instrument with kits were used in the survey for collecting the data. All the team members are trained for a day to measure the blood pressure, blood sugar and blood cholesterol of the team members and then tested and recorded it in the field under supervision of doctors.

Design of survey: Districts with presence of known NGOs were selected for study. The NGOs have links with the villagers, this has been used to build confidence with the villagers. This was useful in obtaining personal data. These data are very much useful for drafting a policy for the farmers and farm laborers. 945 numbers of farmers are interviewed for the health policy drafting purpose (Table 1.)

Survey: The details of the survey has been enclosed. Questionnaire was developed, coded and tested before going for the actual data collection. All are trained for the survey job.

**Analysis:**
Dimension reduction analysis (PCA) will be collected to know the correlation among the parameters. The group having synergy are also noted and named as PVAs. Considering these parameter and pace of development of this parameter the players and resources to be used are considered for drafting the health policy.

**Policy framework:**
The policy document will be prepared with due consultation of the stakeholders. Identification of primary and secondary stakeholders are very important. The pace of development and responsible stakeholder are to be mapped. Present status of the contagious and chronic diseases are to be obtained from primary survey data. The pace of reducing the disease are to be planned as per the funds availability and the manpower to execute it. The CSR funds from the private players like hospitals and medicine are also to be determined and imposed for better effectiveness. The balance sheet of the hospitals and the medicine companies and their sale in the state to be used as benchmark for their stake in eradication of some specific diseases. The farmers who soils himself for production of food for all must have a right on his good health through government, hospitals, medicine producing companies and life insurance companies.
Stakeholder analysis:
The stakeholders are classified as primary and secondary ones. Government, political party, line department, agricultural workers, NGOs, private and government hospitals, medicine companies, interdepartmental convergence and finance (Government / LIC) are primary stakeholders. The secondary stakeholders considered are climate and disease, remedy team, clean water and sanitation, nutritional security, pace of implementation of short term and long term curative and preventive plan, location specific remedial measures and web based governance are the identified stakeholders.

Policy must use all stakeholders’ response and fix the pace of narrowing the gap of spreading the contagious and chronic diseases. The data or the feedback from the farmers may not be that accurate. The less educated and experienced farmers with respect to health parameters need to be collected in non-quantifiable mode and AHP of FL to be used for the monitoring / implementing with greater accuracy.

FL use in policy implementation: Rule based logic to be made available to the field functionaries so that they implement it without any further feedback from the higher officials. The rules are farmed using the feedback from the experienced administrators, farmers and NGOs. Environmental changes and its effect on the health can be incorporated to make it effective over long time. Matlab 19 has been used to incorporate input rules and outputs are obtained from the experts in the respective field. The vector diseases, chronic diseases, food habit, nutrient uptake, climate and addiction has been considered to develop the rules.

III. RESULTS

Policy drafting planned in a phased manner, involving survey results to note the base line data. The diseases prevalent in the field situation identified. Out of 945 data collected, about 81.3% are farmers, 12.9% are agricultural workers and 5.8% are other labors. The percentage of farmers below age group of 35 years are 23%. 40% of the farming community are above 50 years of age. The health is of concern for such mass. These farmers suffer from diseases like hyper tension, diabetes, asthma, vision and skin diseases. It has been observed from the result that, 28.7 percentage of the farming labor community has greater chance of having diabetes.

The hygiene has been considered as an important point. Data on open defecation and use of Chapais collected and about 74% farmers still do not use the lavatory. The associated diseases are many. The policy framed must address these issues.

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Farmers of these 5 districts revealed the fact that weekly they can afford to eat non-vegetarian food. Their number is almost 80% of the total count. It has to be improved to provide protein diet for better health and energy for farming work (Fig. 5.). In the same time about 51.6% consume tobacco or cigarette instead of good food. The working environment and exhaustion prompts the farmers to have such a food habit. This results in many diseases (Fig. 6.).

Considering the hypertension as a disease, it is observed that about 67.2% suffer from hypertension. Many farmer are not aware of the hypertension. Team of doctors or paramedics must inform the farmers and make them aware of such a silent killer. The combination of high blood sugar and hypertension is lethal. No mechanism is there existing in the village for farmers to help them to come out of such a deep problem.

In addition to this the factors and their correlation with the parameters and their joint contribution as principal components are analyzed. About 14 components are identified to be more important are considered for dimension reduction analysis and their correlations. PCA (1), PCA (2), PCA (3) and PCA (4) has been considered to achieve 45.9% of the implementation efficiency. It has been observed that out or 14 parameters addressing parameters like respiratory issue, qualification, alcohol, pesticide, water supply, hypertension, chewing tobacco, addressing jaundice, diarrhea, jaundice and body pain or PCA (1); occupation, Pesticide use, Chulla, Jaundice, open defecation and hypertension or PCA (2); diarrhea, hypertension, water, Chula and consumption of alcohol or PCA (3); body pain, cancer, diarrhea, alcoholism, qualification and water or PCA (4). The details of the result has been given below.

**Eigen analysis of the Correlation Matrix**

<table>
<thead>
<tr>
<th>Eig.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>env</td>
<td>35</td>
<td>50</td>
<td>36</td>
<td>21</td>
<td>07</td>
<td>02</td>
<td>00</td>
</tr>
<tr>
<td>alue</td>
<td>43</td>
<td>51</td>
<td>01</td>
<td>32</td>
<td>56</td>
<td>71</td>
<td>79</td>
</tr>
<tr>
<td>port</td>
<td>16</td>
<td>10</td>
<td>09</td>
<td>08</td>
<td>07</td>
<td>07</td>
<td>06</td>
</tr>
<tr>
<td>ion</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Cu</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>mul</td>
<td>16</td>
<td>27</td>
<td>37</td>
<td>45</td>
<td>53</td>
<td>61</td>
<td>68</td>
</tr>
<tr>
<td>ativ</td>
<td>8</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Eigenvector**

<table>
<thead>
<tr>
<th>Variable</th>
<th>PC 1</th>
<th>PC 2</th>
<th>PC 3</th>
<th>PC 4</th>
<th>PC 5</th>
<th>PC 6</th>
<th>PC 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupati</td>
<td>0.1</td>
<td>0.6</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td>How much bodily pain you had du</td>
<td>0.2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.2</td>
<td>-</td>
</tr>
<tr>
<td>Did you drink alcohol?</td>
<td>0.1</td>
<td>0.1</td>
<td>0.4</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Do you currently use any tobacco</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>20</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Do you use chemicals (pesticide)</td>
<td>0.0</td>
<td>0.4</td>
<td>0.1</td>
<td>0.1</td>
<td>-</td>
<td>-</td>
<td>0.2</td>
</tr>
<tr>
<td>Use of traditional chullah</td>
<td>0.1</td>
<td>0.3</td>
<td>-</td>
<td>-</td>
<td>0.3</td>
<td>-</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Figure 5** Food habit of workers

**Figure 6** Farmers with vision problem

**Figure 7** Farmers with hypertension
The above detailed analysis shows that there are 14 principal components but as in case of medical the objectives must be achieved in order to achieve the confidence of the farmers some selected four principal components are considered to have 45.9% effectiveness. All components has correlation with some other parameters. It is difficult to ignore them. For practical purpose only 4 PCAs are considered. It has been observed that the data collected are mostly within normalizes data segment. It has been plotted using Mahalanobis distance principles. Illiterate farmers could not express their feelings and project their problems in correct manner. This has been significantly shoe in the Mahalanobis plot (Figure 8.).

Similarly in Scree plot the PCA (1) to PCA (14) has been presented. First PCA has higher contribution. PCA (5) and below has contribution of less than 7.7% has not been presented. First PCA has higher contribution. PCA (5) and below has contribution of less than 7.7% has not been presented. First PCA has higher contribution. PCA (5) and below has contribution of less than 7.7% has not been presented.

**Table 2 PCA Analysis**

<table>
<thead>
<tr>
<th>Variable</th>
<th>PC 8</th>
<th>PC 9</th>
<th>PC 10</th>
<th>PC 11</th>
<th>PC 12</th>
<th>PC 13</th>
<th>PC 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.5</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>49</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>Bodily pain if you had</td>
<td>0.1</td>
<td>0.2</td>
<td>-</td>
<td>0.0</td>
<td>0.2</td>
<td>0.0</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>0.4</td>
<td>10</td>
<td>02</td>
<td>13</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you drink Alcohol</td>
<td>0.3</td>
<td>-</td>
<td>-</td>
<td>0.6</td>
<td>-</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.4</td>
<td>64</td>
<td>0.0</td>
<td>0.2</td>
<td>0.0</td>
<td>47</td>
<td>0.0</td>
</tr>
<tr>
<td>Consume any tobacco</td>
<td>0.2</td>
<td>0.6</td>
<td>0.1</td>
<td>0.1</td>
<td>-</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2</td>
<td>25</td>
<td>36</td>
<td>0.1</td>
<td>17</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Use chemicals (pesticide)</td>
<td>-</td>
<td>0.1</td>
<td>0.2</td>
<td>0.3</td>
<td>0.1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.4</td>
<td>02</td>
<td>92</td>
<td>57</td>
<td>99</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>0.2</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
<td>0.4</td>
<td>-</td>
<td>0.1</td>
</tr>
<tr>
<td>Use of traditional Chulla</td>
<td>0.2</td>
<td>14</td>
<td>0.2</td>
<td>94</td>
<td>0.0</td>
<td>25</td>
<td>0.3</td>
</tr>
<tr>
<td>Diagnosed with cancer</td>
<td>0.3</td>
<td>55</td>
<td>0.4</td>
<td>0.0</td>
<td>83</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>0.2</td>
<td>69</td>
<td>99</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffer from Jaundice</td>
<td>0.1</td>
<td>0.6</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.1</td>
<td>0.0</td>
<td>0.3</td>
<td>19</td>
<td>0.3</td>
<td>0.3</td>
<td>48</td>
</tr>
<tr>
<td>Suffer from Diarrhoea</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>0.1</td>
<td>0.0</td>
<td>0.7</td>
<td>57</td>
<td>70</td>
<td>0.2</td>
<td>30</td>
</tr>
</tbody>
</table>

Source of water                  | -    | -    | 0.0   | 0.6   | -     | 0.2   | -     |
|                                 | 0.4  | 0.1  | 31    | 08    | 0.0   | 68    | 0.0   |
| Open Source of defecation       | 0.2  | 25   | 0.0   | 0.0   | 38    | 0.0   | 0.0   |
|                                 | 0.4  | 74   | 61    | 77    | 37    |       |       |

**Figure 1 normalized data plot**

The above detailed analysis shows that there are 14 principal components but as in case of medical the objectives must be achieved in order to achieve the confidence of the farmers some selected four principal components are considered to have 45.9% effectiveness. All components has correlation with some other parameters. It is difficult to ignore them. For practical purpose only 4 PCAs are considered. It has been observed that the data collected are mostly within normalizes data segment. It has been plotted using Mahalanobis distance principles. Illiterate farmers could not express their feelings and project their problems in correct manner. This has been significantly shoe in the Mahalanobis plot (Figure 8.).

Similarly in Scree plot the PCA (1) to PCA (14) has been presented. First PCA has higher contribution. PCA (5) and below has contribution of less than 7.7% has not been presented in present data interpretation. It has been observed that the cumulative contribution is about 45.9% only.
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The scree plot shows the ladder of development. To make the implementation effective generally three PCA contributes more than 80% of the target. As it is a health related survey and the health parameters are inter dependable the contribution of many PCA are less and are evenly distributed (Figure 9.)

Score plot (Figure 10.) shows that the cluster data are at the center and very few data are away from the center. The data away from the center are the data which makes contribution. These are to be pointed out and used for design of the policy. The parameters with positive slope and negative slope clearly shows the contribution to words achievement of the policy. (Figure 11). The parameters like Chula, Pesticide use, occupation and alcohol requires immediate attention for having a good health. Water has negative slope; it adversely affects the health more work is required to be done. Beside water born disease diarrhea all other diseases require immediate intervention from the health and other line departments.

IV. DISCUSSION

Health related issues especially for farmers and same category workers are not separately addressed till date in India. Drafting a health policy for farmers and their associated communities is framed first time in India in this research. The line departments must join hand to implement it in order to facilitate good health for farmers and their community. Departments like SC & ST, Farmers welfare, health, finance and rural development must join hand to implement it efficiently. This will bring many developments achievable. Doubling farmer’s income can be supported by this joint venture. The happiness of farmers will bring more peace in India.

V. CONCLUSION

The study conducted in five districts of Odisha (Gajapati, Rayagada, Jajpur, Balangir and Mayurbhanja) and analyzed. Questionnaire was designed to collect data on different parameters of health. 945 data from five districts of Odisha were collected. The central tendency data analysis was performed to know the stake holders. It was found out that 81.3 % villagers are dependent on agriculture. 24.3 % have poor health. The analysis result obtained indicates that, 45-52 percent population have eyesight problem, 11.4 % have hypertension problem, 35 % of farmers are obese. 79.4% use chapel while go for defecation. 28.7 % suffer from diabetes, 51.7 of the population are mental not well and 6.3 % are still has high disorder. 70% of the population has respiratory problem. 80% of the population take non-vegetarian diet one a week. With all above ailments, the farmers can never perform better and target for doubling income. A well-structured police for the community who has less expression power and time to exhibit it to be drafted and implemented for a win-win story. 945 X 65 data matrix was analyzed for various output. Considering pertinent issues like health condition, mental condition, contagious and non-contagious disease occurrence, water source, cleanliness, food habit details are subjected to principal component analysis. The PCA analysis was performed to reduce the dimensions so that the complex problems can be simplified and implemented well with efficiency and effectiveness.
Principal component analysis (1) address 16.8% of the achievement of good health through addressing respiratory issue, qualification, alcohol, pesticide, water supply, hypertension, chewing tobacco, addressing jaundice, diarrhea, jaundice and body pain. All above components has correlation coefficients .557, .305, .36, .462, .417, .296, .225, .259, .49, .246 respectively. All these parameters progress jointly as one single unit out of rest parameters. PCA (2) which exists in a plane perpendicular to the PCA (1). The PCA (2) contributes towards 10.8% towards achieving the good farmers' health. These components are Occupation, Pesticide use, Chulla, Jaundice, open defecation and hypertension. They have correlation values like .61, .464, .37, .308, .525, .689 respectively. PCA (3) contributes towards 9.7% towards achieving the good farmers’ health. These components are diarrhea, hypertension, water, Chula and consumption of alcohol. They have correlation values like .708, .45, .42, .302, .484 respectively, PCA (4) contributes towards 8.7% towards achieving the good farmers’ health. These components are body pain, cancer, diarrhea, alcoholism, qualification and water. They have correlation values like .54, .308, .38, .6, .42 and .42 respectively. AHP rule used to find the action to be taken under such situation so that the effectively the spread of disease of occurrence of the disease can be prevented. Any implementer of planner can use this tool to find the right action to be taken in right time. This can be tested in a locality and after proper testing will be implemented over larger area. The stake holder must be adequately aware and ethically implement it to help the farmers who without any selfish motive produce food for every human being.

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Cultural Heritage Tourism Development: A Study on Selected Tourist Sites of West Bengal, India

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Abstract – Tourism is one of the fastest growing industries in the arena of world Travel & Tourism Industry. India is also trying to get involved in the competition of Travel Market. In the entire South Asia, India plays an important role in Tourist market & vacation market segmentation. West Bengal, the sweetest Part of India, is full of all sorts of tourism products to attract International visitors. The policy of the Present Government of West Bengal is Pro tourism & people friendly tourism. Travel trade operators are also very keen to position its Brand in the Global Market. It is a fact that Tourist money is being multiplied in to various tourist destinations in different ways and means. A sizeable amount directly & indirectly reaches in the pocket of host economy & ultimately local people get the benefit. West Bengal, a beautiful state in terms of its nature and cultural heritage and one of the border states, also played a role of a hero in its glorious history of freedom struggle, presence of two World Heritage sites (Darjeeling Toy Train and the Sundarbans Mangrove forest). The author has tried to examine the attitude of residents in West Bengal (WB) towards cultural heritage tourism development, where cultural heritage tourism is not well-developed yet, although the area has great potential for development. The study was carried out with field research approach at selected Tourist destinations in WB.

Keywords – Tourism, Cultural heritage, tourist destinations, Guest satisfaction, Tourism development, West Bengal
Implementation of Research in Business Schools: The Competing Agendas of Different Stakeholders

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Paper ID: ICBM-19-1145

Abstract – The primary objective of any business school is creating trained and committed human capital which can assist in meeting the objectives of organizations that employ them. With the explosion of business school rankings – and despite the pervasive disagreements amongst different stakeholders regarding efficacy of these rankings – business schools have had to shift a lot of resources and attention to research and publications. Business schools, in the private sector in the developing world, face unique challenges on the research front. This paper discusses a conceptual model of business school research implementation and seeks to address different critiques related to the evolving role of business schools in the new accreditation and rankings era from a stakeholder perspective. Using a case study approach, this paper shall take cognizance of the unique settings within which select Indian business schools operate.

Keywords – Business schools, research, conceptual model, developing countries
Future Threats to World GDP in Agriculture: An Alarming Message for the World

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Paper ID: ICBM-19-0237

Abstract – The world’s population is expected to grow to almost 10 billion by 2050 (FAO, 2007). On the other hand, agricultural land and forests are being destroyed to build homes in order to meet the demand of increasing population. Therefore, the decline in agriculture in comparison to the increase in population has been the major challenge in this century. This paper explores the contribution of agriculture GDP all over the world. The GDP contribution from the agriculture is gradually declining due to the aggressive industrialization policy. An empirical study has been conducted taking secondary data from various sources about 200 countries (Appendix A). However, some countries data have not been considered due to insignificant amount and insufficient data. This paper shows that overall world GDP in agriculture decreases by 2% from 2005 to 2017 (Appendix A) whereas population during this time has increased by around 17% (World Population Prospects: The 2017 Revision). The most alarming situation is in Asia, where it depicts the decrease of Agriculture GDP 4.5%, whereas population has increased by 15.38% (2017 4.5bn and 2005 3.9bn). Therefore, many academicians, scholars, agriculturists, zoologist, and environmentalists are thinking how to mitigate the challenge of food supply in the world. However, the limitation of the study is the lack of sufficient data which in future opens up the greater arena for studies.

Keywords – Gross Domestic Product (GDP), Agriculture, Population, Climate

I. INTRODUCTION
The question to challenge the policy makers today is this, "What kind of system will we need when crude costs $300 per barrel? [5]. Food cannot grow forever on a damaged earth [3]. Therefore, the fertility of land is gradually decreasing which results in the decrease of world agriculture GDP significantly in last two decades. On the other hand, world population has increased tremendously during that time. As a result, the world is suffering from food and hunger. Increase in the cost of farming, decrease of farming land due to meet growing industrialization and the excessive use of pesticides, fertilizers, and chemical have made the human civilization vulnerable. New diseases are being found everyday of which many are still unidentified. This is the result of change in world climate, production of more genetically modified (GM) food and lack of pure water and sanitation system.

1.1 OBJECTIVES
This paper aims to create awareness about the future threat of the human civilization due to the lowering contribution on agriculture GDP and growth to support the huge world population. The objectives of the study are to compare the agriculture GDP contributions in various countries and in regions of the world. The study shows some analysis which explains elaborately the scenario of the world GDP in agriculture. However, there are some limitations of the study that can be considered the strength of the further studies to mitigate the burning issue in future. Furthermore, this paper also shows the effect of the rapid industrialization all over the world. Some statistical analysis and findings have also been incorporated in this paper.

II. RELATED LITERATURE FINDINGS
Some research works have been conducted in the field of agriculture regarding the increase in production, rise of the fertility of land, etc. But very few have been done on the comparisons of declining world GDP on agriculture. According to The Report Philippines 2018 “Drought and persistent water scarcity are a major issue for the Asian countries especially Middle East and the Gulf, where between 67% and 93% of diminishing groundwater resources are used for agriculture, Stanford University’s School of Earth, Energy and Environment Sciences (2017) shown that rainfall will decrease by 30% by the end of the century, while temperatures will increase by 6°C. Many countries’ GDP in industry and service have increased rapidly, but GDP in agriculture is gradually decreasing which may lead to quality food deficit in near future. Agriculture disappeared from the development agenda during 1980s and 1990s by the international community [1]. Therefore, the growth in agriculture is running behind the growth of population. Climate change, scarcity of water and using excessive fertilizers and pesticides are considered to be the major causes of declining GDP (Kalpa, 2010).

Four major threats of agriculture
2. 1. Energy constraints
Energy costs have been increasing sharply over the last decades. According to Organization of the Petroleum Exporting Countries (OPEC), the average price of per
barrel crude oil in 2018 is $65.63. The rise in oil price and scarcity of other available substitute energy sources pose a threat to agriculture growth.

2.2. Unavailability of water
Water layer under the earth is gradually going into the deep and it becomes very difficult to get pure water for irrigation. On the other hand, there is a presence of arsenic in water in various parts of the world especially in Asian countries. According to World Bank and water and sanitation program (WATSAN Report March 2005). The most affected countries are Bangladesh, China (Inner Mongolia, Xinjiang, Shanxi), India (West Bengal), Nepal, Taiwan, Vietnam, Myanmar, and Cambodia. Therefore people are mostly in health risks. China and India are drawing down water quickly (Kirschenmann, 2010) and China 80% depends on drawing water and India 60% depends on this source. Therefore, the irrigation system has been greatly hampered due to scarcity of the source of water. Kirschenmann has also shown that water is being drawn at a rate of 1.3 trillion gallons faster than it can be replaced.

2.3. Climate Change
This is the latest thinking and a great concern about the climate change which has adversely affected in the growth of agriculture. Climate has been totally unpredictable. Many places are becoming extremely hot and become impossible to cultivate crops. Dianne Dumanoski (2010), mentioned in his book The End of the Long Summer; Why We Must Remake Our Civilization to Survive on a Volatile Earth, “For the past twelve thousand years, Earth’s stable climate has allowed human civilization to flourish”. This situation is rapidly coming to an end. The frequent experiment of nuclear power and other industrial civilization are disrupting planet’s metabolism. The change of climate is already going down; heating harder and faster than it is expected. Therefore, Hurricane, Tsunami, and other calamities are now common phenomena. Another recent problem is the occurrence of huge thunderbolt all over the world. Climate change has greatly hampered the growth in agriculture.

2.4. Ecological Degradation
According to the Rodale Institute (an American farm that supports research into organic farming), healthy soil containing 1% organic matter absorbs 33 pounds of water. This level of soil quality is gradually declining which also causes the decrease in crop production. Deborah Koons Garcia mentioned in his book ‘Symphony of the Soil’, “Due to industrial agriculture systems, we have lost 75% of crop diversity over one-hundred years, and we have lost 33% of our animal species.” This report shows that in the next century the situation will be worse and many of crops and animal spices will be extinct. Therefore, there is likely to be a negative impact on agriculture production.

III. METHODOLOGY

3.1 Data Collection
This study is based on secondary data that are obtained from various articles, books, websites, FAO and magazines and other sources. Data were taken from about 200 countries’ (Appendix A) GDP in 2005 and 2017. The collected data then were analyzed with SPSS software and Excel program. However some of the countries’ data were ignored as they are very insignificant and do not have major effect if they are omitted, whereas many countries’ data were not available. However, this limitation can be overcome by conducting further research into this area. The purposes of methods are to describe certain aspects or characteristics of population and about nature of relationships within a population. Some of the important analyses have been done through some graphs which will help readers to understand the trend of the data.

3.2 Data Analysis

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Fig 1. Sector wise GDP of various continents in 2017
**TABLE II**

**COMPARISON OF CONTINENT WISE AVERAGE AGRICULTURE GDP IN 2005 AND 2017**

<table>
<thead>
<tr>
<th>SN</th>
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<td>11.5</td>
<td>-2.4</td>
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**Fig 2. Agriculture GDP Continent wise in 2017**

**TABLE III**

**COMPARISON OF AVERAGE CONTINENT WISE INDUSTRY GDP IN 2005 AND 2017**

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**Fig 4. Average continent wise industry GDP in 2005 and 2017**

**TABLE IV**

**AVERAGE CONTINENT WISE SERVICE GDP IN 2005 AND 2017**

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<th>Increase/Decrease</th>
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<td>Average</td>
<td>57.4</td>
<td>60.8</td>
<td>3.4</td>
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</table>

**Fig 3. Continent wise average GDP in agriculture in 2005 and 2017**
IV. FINDINGS

The study shows that over the last decade (2005 to 2017), GDP contribution has decreased by 2% (See Appendix 1) overall in the world, whereas contribution in industry and service sector during this period has increased by 2% and 3.4% respectively. On the other hand population in this period has increased by 17% (World Population Prospects: The 2017 Revision). This study also explains the most important reduction of agriculture GDP in Asian countries where GDP growth has declined by 4% (Appendix 2). Such downfall in agriculture indicates that by 2050 the world may suffer from food deficit significantly. The study also shows that soil fertility is gradually showering down due to excessive use of fertilizer, pesticides, scarcity of agro water, rapid drawings of underground water, climate change and the ecological degradation. However, good news is that the production capacity of land has increased with the development of new technology in the agriculture industry. There is again controversy regarding the sustainability of this fertility which resulted from the use of strong pesticides and fertilizers. On the other hand, due to the use of strong pesticides and fertilizers more genetically modified (GM) corpses are being produced which are resulting in high obesity rate and creation of other new diseases. This has become a burning issue now a day. Due to deforestation, many areas and species are now extinct. Therefore, the environment is becoming ecologically imbalanced. On the other hand, standard of living and per capita income have increased due to the industrial and service sector development, which is resulting in more consumption of food and other luxurious goods. However, this scenario still may not be the same in many Asian and African countries where more than 50% of people live below the poverty line. The climate is changing very quickly and becoming more unpredictable which causes the decrease in agriculture GDP.

V. CONCLUSION

We cannot eat some coins in the morning and pass the whole day. We need food to live. Agriculture is the only man made source of food. Other sources such as natural forests and sea foods are also decreasing. If agriculture survives, we will survive. If the source of food cannot be ensured we as human beings and other species cannot live together in the world. This is the right time to come under one umbrella and to think about the agriculture especially the growth in agriculture. The good news is that people are becoming more conscious and thinking positively for the green world. This is our world and this is our responsibility to make it sustainable, survivable and livable with happiness. Therefore, it is high time all concerned come forward to think in this matter. Further research would open up a new window regarding the improvement in the agriculture especially making the harmony of the growth between agriculture and population. In addition, it is the right time to think before wasting food, before cutting down trees, destroying cultivable land, and printing on papers. Let us have a universal slogan “Go Green, Live in agriculture” and let the world live for generations. Let us create healthy soil creating healthy plants, creating healthy humans living on a healthy planet.

REFERENCES

## APPENDIX

Sector wise GDP of various countries in 2017 and 2005 (in Percentage)

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<td>10.6</td>
<td>14</td>
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<td>3</td>
<td>0.4</td>
</tr>
<tr>
<td>57</td>
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</tr>
<tr>
<td>58</td>
<td>Gabon</td>
<td>4.5</td>
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</tr>
<tr>
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<td>41</td>
<td>22.7</td>
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<td>5</td>
<td>1</td>
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<tr>
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<td>14</td>
<td>-1.9</td>
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<tr>
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<td>3</td>
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<td>24</td>
<td>4.5</td>
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<tr>
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<td>Guyana</td>
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<td>17.5</td>
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<td>70</td>
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<td>14</td>
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<tr>
<td>71</td>
<td>Hungary</td>
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<td>4</td>
<td>-0.4</td>
</tr>
<tr>
<td>72</td>
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<tr>
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<td>India</td>
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<td>3.2</td>
</tr>
<tr>
<td>74</td>
<td>Indonesia</td>
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<td>15</td>
<td>1.1</td>
</tr>
<tr>
<td>75</td>
<td>Iran</td>
<td>9.8</td>
<td>6</td>
<td>-3.8</td>
</tr>
<tr>
<td>76</td>
<td>Iraq</td>
<td>4.8</td>
<td>7</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Papua New Guinea</td>
<td>22.1</td>
<td>21</td>
<td>-1.1</td>
</tr>
<tr>
<td>---</td>
<td>------------------</td>
<td>------</td>
<td>----</td>
<td>------</td>
</tr>
<tr>
<td>141</td>
<td>United Kingdom</td>
<td>1.1</td>
<td>188</td>
<td>34</td>
</tr>
<tr>
<td>188</td>
<td>United Arab Emirates</td>
<td>9.5</td>
<td>10</td>
<td>8.0</td>
</tr>
<tr>
<td>112</td>
<td>Peru</td>
<td>1.7</td>
<td>20</td>
<td>0.9</td>
</tr>
<tr>
<td>14</td>
<td>Papua New Guinea</td>
<td>0.2</td>
<td>20</td>
<td>1.0</td>
</tr>
<tr>
<td>34</td>
<td>United Kingdom</td>
<td>1.1</td>
<td>188</td>
<td>34</td>
</tr>
<tr>
<td>188</td>
<td>United Arab Emirates</td>
<td>9.5</td>
<td>10</td>
<td>8.0</td>
</tr>
<tr>
<td>112</td>
<td>Peru</td>
<td>1.7</td>
<td>20</td>
<td>0.9</td>
</tr>
<tr>
<td>14</td>
<td>Papua New Guinea</td>
<td>0.2</td>
<td>20</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Country</td>
<td>Exchange Rate</td>
<td>Debt Service</td>
<td>Interest Rate</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
<td>---------------</td>
<td>--------------</td>
<td>---------------</td>
</tr>
<tr>
<td>189</td>
<td>United States</td>
<td>0.9</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>190</td>
<td>Uruguay</td>
<td>6.2</td>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>191</td>
<td>Uzbekistan</td>
<td>18.5</td>
<td>28</td>
<td>9.5</td>
</tr>
<tr>
<td>192</td>
<td>Vanuatu</td>
<td>27</td>
<td>25</td>
<td>-2</td>
</tr>
<tr>
<td>193</td>
<td>Venezuela</td>
<td>4.4</td>
<td>4</td>
<td>-0.4</td>
</tr>
<tr>
<td>198</td>
<td>Zambia</td>
<td>5.4</td>
<td>16</td>
<td>10.6</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>10.4</td>
<td>12.4</td>
<td>2</td>
</tr>
</tbody>
</table>

Abstract — Readymade Garments is the backbone of the economy of Bangladesh. But the employees of the sector are facing different workplace hazards. As a result different accidents are occurring over the years. This study has been conducted to investigate the current status on health and hygiene systems, safety at work place. This is a quantitative analysis. The RMG employees of Dhaka and Gazipur district have been considered as the population. The sample garment of the study is seven factories. The sample size of the study is 200 workers which are selected randomly. ‘Z’ test has been used to test the hypotheses. The study reveals that most of the factories are away from ensuring sound health, hygiene and safety. Finally, some recommendations have been given to improve the health, hygiene and safety at the work place.

Keywords — Health, Hygiene, RMG, Safety

I. INTRODUCTION

Bangladesh is a fast growing economy powered by the Readymade Garments (RMG) industry. RMG has been promoted the country in the world through the motto ‘Made in Bangladesh’. The RMG industry has become as one of the life lines of Bangladesh economy. The RMG industry plays an important role for the development of the country. The "Made in Bangladesh" is now become as a prestigious brand across the globe. Bangladesh, which was once, termed by cynics a "bottomless basket" has now become a "basket full of wonders". The country with its limited resources has been maintaining 7.11% annual average GDP growth rate and has brought about remarkable social, infrastructural & human development.

History of the Garments Industry
The first ready-made garment factory was established in New York in 1831. During the American Civil War, the need for ready-made uniforms helped the garment sector to grow up in the United States.

Bangladesh became independent from Pakistan in 1971. After the independence, the country was one of the poorest countries of the whole world. No major industries were developed in the country when it was known as East Pakistan due to discriminatory attitude and policies of the government of the West Pakistan. As a result, rebuilding the war-ravaged country with limited resources appeared as the biggest challenge. Now the RMG sector is playing a vital role for the country’s economy. The sector is especially important for export earnings. The sector is now gaining about 81% of total export earnings of the country. Where our only major export earner "the jute industry" started losing its golden days than the RMG sector has taken the place of jute. The following milestones have been achieved by the RMG Industry of Bangladesh over the last decades:

<table>
<thead>
<tr>
<th>Year</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>Realistic Solution of child labor issue with ILO, UNICEF &amp; US Embassy</td>
</tr>
<tr>
<td>2005</td>
<td>Phase out of MFA Quota</td>
</tr>
<tr>
<td>2009</td>
<td>Successfully faced Global Recession</td>
</tr>
<tr>
<td>2010</td>
<td>Ranked as the 2nd Largest Exporting Country</td>
</tr>
<tr>
<td>2013</td>
<td>Ensuring workplace safety</td>
</tr>
</tbody>
</table>

The economy of Bangladesh is mainly dependent on agriculture. But at RMG sector has risen as the biggest earner of foreign currency. The RMG is powered by young, urbanized workers where most of them are women. About 75% of total garments are located on Dhaka. The rest 25% are located on Chittagong, Khulna, Comilla, Gazipur, Narayanganj, Rajshahi, Feni, Sylhet, Barishal, B-Baria, Mymensingh, Dinazpur, Narsingdi etc. This industry has created job opportunity for 50 lacks of people. Among them about 85% are illiterate and rural woman who has no opportunity.

The RMG industry is a strategic sector for Bangladesh. In FY 2013-14, it has provided 4.2 million direct jobs, 16% of total GDP and more than 75% of foreign exchange earnings. Over the past two decades starting from the early 1980s, Bangladesh has built a strong reputation centered on price advantage via low-cost labor, investment incentives, production capacity and satisfactory quality levels, especially in value and mid-market price point segments. The major exported items of RMG sectors from Bangladesh are Trousers, Jackets, T-shirt, Sweater and Shirts.

This sector has given women the chance to be financially independent. Now they have a voice in the family because now they are contributing financially to their family. There are approximately 5,000 garment factories where about 5
million people are employing mostly women. Large scale entry of women into the labour market especially through garments industry has been one of the most striking features of recent industrialization in Bangladesh.

Top RMG exporters of the world

The RMG sector of Bangladesh has achieved the world second position after China in exporting the apparel goods. Here the table shown below the world top 4 RMG exporters country:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country Name</th>
<th>World Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>38.6%</td>
</tr>
<tr>
<td>2</td>
<td>Bangladesh</td>
<td>5.1%</td>
</tr>
<tr>
<td>3</td>
<td>India</td>
<td>3.7%</td>
</tr>
<tr>
<td>4</td>
<td>Vietnam</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

Though Bangladesh is now the second largest RMG exporters in the world but in recent years there were several accidents have occurred in the sector which has created a negative image into the globe. According to Bangladesh Institute of Labour Studies (BILS), about 1,841 workers laid down their lives due to different accidents including fire, building collapse in the sector over the last decade. More than 9,595 garment workers have been injured in the incidents; many of them have lost their ability to work. Among them at least 1,135 workers were laid down their lives and 2,500 others have injured in the Rana Plaza collapsed on April 24, 2013 at Savar. The United States (US) scrapped the Generalized System of Preferences (GSP) following the Rana Plaza building collapse citing Bangladesh’s failure in ensuring internationally-recognized worker rights.

Moreover, besides building collapse, fire accidents also have occurred in the sector. A fire broke out at Tazreen Fashions at Ashulia on the outskirts of the capital and claimed 119 lives and gravely injured more than 200 on 24 November 2012. Rana Plaza and Tazreen Fashion accidents bring attention from home and abroad regarding fire hazards and building safety.

Here the lists shown below about the quantities of death and casualities over the year from November 2012 to March 2016:

<table>
<thead>
<tr>
<th>Causes</th>
<th>Death</th>
<th>Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire</td>
<td>153</td>
<td>1223</td>
</tr>
<tr>
<td>Collapse</td>
<td>1135</td>
<td>2605</td>
</tr>
<tr>
<td>Others</td>
<td>---</td>
<td>40-600</td>
</tr>
</tbody>
</table>

The above chart represents that it is the right time to be conscious about the uncertain risk and also take initiatives against the accidents too.

II. LITERATURE REVIEW

This research has been conducted basing on Bangladesh Labor Law 2006 specially focusing on the chapter five and six namely Keeping Hygiene and Safety. However, some articles also have been studied to conduct the research.

Occupational Health and Safety

Both ILO and WHO Committee defined the Occupational Health. They defined that Occupational health should aim at the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations. The protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities and to summarize, the adaptation of work to man and of each man to his job. The occupational safety and health (OSH), occupational health or workplace health and safety (WHS) is a multidisciplinary field concerned with the safety, health and welfare of people at work. However, the chapter five and the chapter six of Bangladesh Labor Law-2006 deals about the health and safety at workers. The chapter five deals about the rules regarding cleanliness, ventilation and temperature, dust and fume, disposal of waste and effluents, artificial humidification, overcrowding, lighting, potable water, toilets and washroom and dustbin and spittoon from section 51-60. On the other hand, the chapter six deals about the safety of building and machinery, precautions as to fire, fencing on machinery, work on or near machinery, striking gear and devices for cutting off power supply, automatic machines, casing of new machinery, cranes and other lifting machinery, hoists and lifts, revolving machinery, pressure plant, floors, stairs and passages, pits, sumps, tunnel mouths etc. Excessive weights, protection of eyes, power to ascertain defective parts to test their stability, precautionary measures against dangerous fumes, explosive or inflammable gas, dust etc. The requirements to use personal safety equipments have explained from section 61-78.

Safety

Safety is one of the important and mandatory production functions. Safety lapses are serious matters. The authorities concerned are harshly punished by the safety regulatory authorities for any acts of omission and commission. Unfortunately in Bangladesh, state safety regulation and intervention are extremely poor. Like everything else, it is also relegated more to a routine than any prevention or inspection function based on only the whims and desires of the factory owner. Over decades, no worthwhile safety audit has been seen, not even any kind of investigation or positive measures from the RMG factory owners or inspection authorities who are primarily responsible for safety in the work place. A strong health and safety program can assure safety and sound health of employees. Most of the organization does not follow all the provisions regarding health, hygiene and safety of workers as per the Bangladesh Labor Act 2006 amended in 2013.
The Bangladesh Garment Manufacturers and Exporters Association (BGMEA) has formulated its own code of conduct for the industry in collaboration with the major trade unions and set up a compliance unit that monitors labor conditions in its members' factories. In 2006, the Government of Bangladesh passed a labor code namely Bangladesh Labor Law, 2006. It applies to all workers and the new sections relevant to the garment industry include written contracts and identity cards, timely payment of wages, revised minimum wage, paid maternity leave and explicit laws against sexual harassment. Implementation of the BLL 2006 is monitored primarily by Ministry of Labor and Employment (MoLE), factory inspectors, BGMEA and BKMEA social compliance monitors etc. Besides inspecting and monitoring the status of the factories, BGMEA and BKMEA monitors provide advisory support to factory personnel so that they are able to implement the required adequate measures as stated in BLL, 2006. The Bangladesh Labor Law 2006 is amended in the year 2013 with modification in some clauses and with more detail elaboration of many terms.

Safety is one of the mandatory production functions. But in Bangladesh, the safety regulations and interventions are extremely poor. Like everything else, it is also relegated more to a routine than any prevention or inspection function based on only the whims and desires of the factory owner. Over the last decades, no worthwhile safety audit has been seen, not even any kind of investigation or positive measures from the RMG factory owners or inspection authorities who are primarily responsible for safety in the work place.

Hazards

After more than a century of industrial experience and development of national regulations, international conventions, workers in Bangladesh continue to lose their health and lives while contributing in the national enrichment. The scenario becomes worse when it comes to women workers. The female workers are exposed to different occupational health hazards such as work environment hazards, physical hazards and mental hazards etc. The work environment hazards include long working hours, absence of leave facilities, congested and overcrowded working conditions, absence of health facilities and safety measures, absence of staff amenities, lack of safe drinking water etc. On the other hand, the physical hazards include exposures to toxic agents, awkward postures and repetitive motion etc. Exposure to sexual, verbal and psychological harassment and violence at their work places are some of the common mental health hazards. This hazard is not only affected the female workers’ mental and physical being but also the quality of work and productivity of workforce nationwide. Women are more vulnerable to occupational hazards than men. For instance, women workers in the electronics and garment industries are subjected to extended and intensified work manifesting in the phenomenon called work intensification and work extensification. That’s why advocacy and policy framework for women’s work should not only be directed locally and nationally, but must wield influences at the global level since the processes inside the work organization are just a reflection of the wider and broader realities occurring in the global arena to protect the workers from workplace hazards.

International Pressure on Health and Safety Issue

Buyers take decision to buy goods from four dimensions. These are price, quality, and required time to produce the goods into marketplace and social compliance which includes compliance with labor standards. In modern age, the export of readymade garments is not only depends on the quality but also the working environment. It includes the garments from where the product is to be produced so that the sweatshop concept is totally taken care of and the code of conduct must be stretched towards achieving the objectives of social compliance issues. On the other hand, five key areas are identified where it is needed to strengthen the accountability to women is urgent like politics and governance, access to public services, economic opportunities, justice and finally the distribution of international assistance for development and security.

Contribution of RMG sector to Economic Growth

Bangladesh has achieved high economic growth over the past two decades. The main contributor of the growth is garment exports. The country accounted for 4.8 per cent of global apparel exports in 2011, compared with only 0.6 per cent in 1990. Unregulated industry growth has contributed to poor working conditions in that sector which have acted as an barrier to sustainable development.

Research Gap

Lot of research has been conducted over the last couple of years on RMG sector for its exploration, growth and expansion in Bangladesh by different scholars, experts, teachers, professionals, business organizations. As a result, the RMG sector is now one of the important exporting sectors of Bangladesh. But in recent years, several accidents have been occurred in the sector including fire accidents, building collapse etc. Due to these accidents, lot of losses has been occurred in employees’ lives and properties. Lot of people has lost their life and some others received injuries for long run. Though lot of research has been conducted for the development, growth, expansion of RMG sectors in the country but it is really a matter of sorrow that a few researches have been conducted on the safety, health and hygiene issues. As a result, almost in every year the sector faces different unexpected accidents. This accident creates a negative image into global market. For an example, after the Rana Plaza building collapse and then the fire accident of Taznin Garments, we have seen the European Union (EU) has stopped Generalized Scheme of Preferences (GSP) facility. It is true that, the stoppage of GSP facility creates a financial loss for Bangladesh but it creates more loss for a negative image in world market. As a result, we have loosed the market for a certain period of
time. Though the Government of Bangladesh has taken immediately some effective measures in order to re-opening the GSP facility and the Government become success but we should go for searching the absolute permanent solution of the said problem. Conducting research can find the weakness in the area. Government of Bangladesh, Industry ministry, BGMEA, BKMEA, different Scholars, Experts, Teachers should conduct more research in order to developing the safety and better health and hygiene systems for the RMG workers. This study has been conducted focusing the above issues.

III. METHODOLOGY

1) Statement of the Research Problem
In recent years, there were many accidents occurred into RMG sector of Bangladesh. This accident has created a negative image into the world market. The buyers, different agencies, local and international communities have created pressures to ensure the safe work place, sound health and hygiene systems for workers in RMG sector. As a result, it is the demand of time to ensure the safe working environment and also ensures the sound health and hygiene systems into the sector.

2) Nature of the Study
This research is a quantitative analysis.

3) Research Questions
This study has been conducted to find out the answers of the following questions:
   i. Does the Garments Industry ensure sound health & hygiene systems into work place?
   ii. Does the worker feel safe into work place?
   iii. Do the garments factories follow the Labor Law properly?
   iv. What are the major problems in health and safety management in RMG sector?
   v. What actions (s) need to take in order to ensure safety, health & hygiene into the workplace?

4) Hypotheses of the Study
The study has been conducted on the basis of following hypotheses;
   $H_1$: Working Environment of the factories is satisfactory.
   $H_2$: Ventilation systems of the factories are satisfactory.
   $H_3$: Hygiene systems of the factories are satisfactory.
   $H_4$: Safety committees’ performance of the factories is satisfactory.
   $H_5$: Safety related logistical support of the factories is satisfactory.

5) Population, Sample, Sampling Techniques and Sample Size
In this study, the garments of Dhaka and Gazipur districts have been considered as the population. Here, data has been collected from seven (7) garments factories which are considered as the sample factories. The purposive method of sampling has been used in order to selecting the sample. Here, Random sampling technique has been used to collect the data. The sample garments are Epyllion Knitwears Ltd., Talisman Ltd., Dekko Accessories Ltd., Agami Accessories Ltd., Aboni Knitwear Ltd. and Penta Forth Apparels Ltd. Data has been collected from different level employees like IE Officer, Production In-charge, Line Chief, Safety Assistant, Quality Officer, Line Man, Supervisor, Operator, Helper, Executive, Quality Inspector etc. Here data has been collected from a total of 200 respondents form the sample factories. Data has been collected from each of the selected garments.

6) Types of Data Used and Data Source
In this study, both primary and secondary data has been used. Primary data has been collected from the sample factories. However, different articles, journals, books, newspapers, theses papers, websites etc. have also been used as the secondary source of information.

7) Instrument of Data Collection
A structured questionnaire has been developed to collect data from the sample. The questionnaire has been designed in order to satisfying the needs of study objectives. The questionnaire has been prepared as per Rensis Likert method. The questionnaire was mainly closed-ended type. A total of twenty five (25) variables have been used which are directly related with health, hygiene and safety issues stated by Bangladesh Labor Law 2006. In every question, there were five (5) options like strongly satisfied (SS), satisfied (S), neutral (N), dissatisfied (D), and strongly dissatisfied (SD).

8) Analysis of the Primary Data
Different statistical tools and techniques like hypotheses, populations, sampling etc. have been used to conduct the study. MS-Excel 2007 has been used to analyze the data. One tail ‘Z’ test has been used to test the hypotheses. Here, the outcome has been calculated by multiplying the frequency (survey figure) with assigned point from 1 to 5 that represents strongly satisfied=5, satisfied=4, neutral=3, dissatisfied=2 and strongly dissatisfied=1. The weighted average has been calculated by dividing the total outcome with the sample size. Decision has been taken by comparing the weighted average value with standard value. Standard value has been calculated by dividing the total point with total options and the output is added with standard deviation. Standard deviation ($\sigma$) has been found by applying the formula $\sqrt{npq}$ (since Binomial Variance= npq) where, n= total sample, p=degree of probability, q=degree of non-probability which has been
calculated by 1-\p. Standard error (\hat{\sigma}) of the mean for infinite population has been calculated by applying the formula \(\frac{\sigma}{\sqrt{n}}\). After the analysis of data, the hypotheses have been tested by using one tail ‘Z-test’. Hypotheses has been considered as accepted when \(\mu \geq \) of standard value and rejected when \(\mu < \) of standard value. One tail ‘Z’ test is done at 95% level of significance.

9) Limitations of the Study
This research has been conducted based on the opinions from seven (7) factories only. But in Bangladesh we have more than 5000 garments factories. So, the small sample size is one of the important limitations of the study. Moreover, data has been collected from Dhaka and Gazipur district only. But now days the garments factories are located in many other districts of the country. As a result, this research is not the total scenario of the industry.

IV. OBJECTIVE OF THE STUDY
The main objective of the study is to know the current scenario regarding the health & hygiene systems and safety in the RMG sector of Bangladesh. The specific objectives of the study are;

i. To know whether the Labor Law is implemented properly or not due to health, hygiene and safety?

ii. To identify the major challenge(s) of Health & hygiene systems & safety at work place.

iii. To find out the ways to overcome from the challenges.

V. ANALYSIS AND FINDINGS
The study has been conducted to know the scenario of the health, hygiene and safety of the RMG sector of Bangladesh basing on five some selected garments. The analysis and hypotheses test from the collected primary data is presenting below in order to getting the scenario regarding health, hygiene and safety practices into the RMG sector.

A. Working Environment

<table>
<thead>
<tr>
<th>R</th>
<th>f</th>
<th>V1* f</th>
<th>V2* f</th>
<th>V3* f</th>
<th>V4* f</th>
<th>V5* f</th>
<th>V6* f</th>
<th>V7* f</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>5</td>
<td>225</td>
<td>275</td>
<td>175</td>
<td>235</td>
<td>135</td>
<td>215</td>
<td>315</td>
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<td>S</td>
<td>4</td>
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<td>292</td>
<td>308</td>
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<td>156</td>
<td>312</td>
<td>236</td>
</tr>
<tr>
<td>N</td>
<td>3</td>
<td>84</td>
<td>96</td>
<td>129</td>
<td>141</td>
<td>162</td>
<td>108</td>
<td>153</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>68</td>
<td>28</td>
<td>42</td>
<td>26</td>
<td>40</td>
<td>36</td>
<td>36</td>
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<tr>
<td>SD</td>
<td>1</td>
<td>11</td>
<td>26</td>
<td>24</td>
<td>17</td>
<td>60</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Sum</td>
<td>15</td>
<td>716</td>
<td>717</td>
<td>678</td>
<td>723</td>
<td>553</td>
<td>696</td>
<td>749</td>
</tr>
</tbody>
</table>

Weighted Average = \frac{(V1*frequency+V2*frequency+V3*frequency+V4*frequency+V5*frequency+V6*frequency+V7*frequency)}{Sample Size (200*7)} = 3.45. The weight average value is 3.45 which are lower than standard value 3.50. So, the respondents are not satisfied with the clean working environment. Here the responses of respondents are shown in the graph below:

Table: 1 Survey data on clean working environment

---

B. Ventilation Systems

<table>
<thead>
<tr>
<th>R</th>
<th>f</th>
<th>V1* f</th>
<th>V2* f</th>
<th>V3* f</th>
<th>V4* f</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>5</td>
<td>165</td>
<td>155</td>
<td>195</td>
<td>150</td>
</tr>
<tr>
<td>S</td>
<td>4</td>
<td>256</td>
<td>264</td>
<td>268</td>
<td>220</td>
</tr>
<tr>
<td>N</td>
<td>3</td>
<td>138</td>
<td>147</td>
<td>135</td>
<td>249</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>56</td>
<td>60</td>
<td>48</td>
<td>34</td>
</tr>
<tr>
<td>SD</td>
<td>1</td>
<td>29</td>
<td>24</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>Sum</td>
<td>15</td>
<td>644</td>
<td>650</td>
<td>671</td>
<td>668</td>
</tr>
</tbody>
</table>

Weighted Average = \frac{(V1*frequency+V2*frequency+V3*frequency+V4*frequency)}{Sample Size (200*4)} = 3.29. The weight average value is 3.29 which are lower than standard value 3.50. So, the respondents are not satisfied with the ventilation systems of the factories.

Table: 2 Survey data on ventilation systems

---

C. Hygiene systems

<table>
<thead>
<tr>
<th>R</th>
<th>f</th>
<th>V1* f</th>
<th>V2* f</th>
<th>V3* f</th>
<th>V4* f</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>5</td>
<td>390</td>
<td>245</td>
<td>215</td>
<td>300</td>
</tr>
<tr>
<td>S</td>
<td>4</td>
<td>216</td>
<td>196</td>
<td>276</td>
<td>300</td>
</tr>
<tr>
<td>N</td>
<td>3</td>
<td>90</td>
<td>183</td>
<td>105</td>
<td>81</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>42</td>
<td>52</td>
<td>74</td>
<td>34</td>
</tr>
<tr>
<td>SD</td>
<td>1</td>
<td>17</td>
<td>15</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Sum</td>
<td>15</td>
<td>755</td>
<td>691</td>
<td>686</td>
<td>736</td>
</tr>
</tbody>
</table>

Weighted Average = \frac{(V1*frequency+V2*frequency+V3*frequency+V4*frequency)}{Sample Size (200*4)} = 3.29. The weight average value is 3.29 which are lower than standard value 3.50. So, the respondents are not satisfied with the ventilation systems of the factories. Here the responses of respondents are shown in the graph below:

Table: 3 Survey data on toilet and water supply systems
Outcome = Frequency (Survey Figure) * Assigned Point

Weighted Average = Total Outcome
(V1*frequency + V2*frequency + V3*frequency + V4*frequency) / Sample Size (200*4) = 3.59. The weight average value is 3.59 which are higher than standard value 3.50. So, the respondents are satisfied with the hygiene systems of the factories. Here the responses of respondents are shown in the graph below:

Figure: 3 Responses on toilet and water supply systems

D. Safety committee performances

<table>
<thead>
<tr>
<th></th>
<th>V1 f</th>
<th>V2 f</th>
<th>V3 f</th>
<th>V4 f</th>
<th>V5 f</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>5</td>
<td>95</td>
<td>150</td>
<td>150</td>
<td>135</td>
</tr>
<tr>
<td>S</td>
<td>4</td>
<td>124</td>
<td>96</td>
<td>96</td>
<td>168</td>
</tr>
<tr>
<td>N</td>
<td>3</td>
<td>54</td>
<td>114</td>
<td>150</td>
<td>135</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>152</td>
<td>112</td>
<td>88</td>
<td>78</td>
</tr>
<tr>
<td>SD</td>
<td>1</td>
<td>56</td>
<td>52</td>
<td>52</td>
<td>47</td>
</tr>
<tr>
<td>Sum</td>
<td>15</td>
<td>481</td>
<td>524</td>
<td>536</td>
<td>563</td>
</tr>
<tr>
<td>SV</td>
<td>3.5</td>
<td>2.68</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table: 4 Survey data on safety committee performances

Outcome = Frequency (Survey Figure) * Assigned Point

Weighted Average = Total Outcome
(V1*frequency + V2*frequency + V3*frequency + V4*frequency + V5*frequency) / Sample Size (200*5) = 2.68. The weight average value is 2.68 which are lower than standard value 3.50. So, the respondents are not satisfied with the safety committee performances of the factories. Here the responses of respondents are shown in the graph below:

Figure: 4 Responses on safety committee performances

E. Safety Related Logistical Support

<table>
<thead>
<tr>
<th></th>
<th>V1 f</th>
<th>V2 f</th>
<th>V3 f</th>
<th>V4 f</th>
<th>V5 f</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>5</td>
<td>95</td>
<td>130</td>
<td>50</td>
<td>105</td>
</tr>
<tr>
<td>S</td>
<td>4</td>
<td>180</td>
<td>84</td>
<td>136</td>
<td>136</td>
</tr>
<tr>
<td>N</td>
<td>3</td>
<td>138</td>
<td>96</td>
<td>159</td>
<td>126</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>112</td>
<td>138</td>
<td>116</td>
<td>138</td>
</tr>
<tr>
<td>SD</td>
<td>1</td>
<td>34</td>
<td>52</td>
<td>45</td>
<td>34</td>
</tr>
<tr>
<td>Sum</td>
<td>15</td>
<td>559</td>
<td>500</td>
<td>506</td>
<td>539</td>
</tr>
<tr>
<td>SV</td>
<td>3.5</td>
<td>2.61</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table: 5 Survey data on safety related logistical support

Outcome = Frequency (Survey Figure) * Assigned Point

Weighted Average = Total Outcome
(V1*frequency + V2*frequency + V3*frequency + V4*frequency + V5*frequency) / Sample Size (200*5) = 2.61. The weight average value is 2.61 which are lower than standard value 3.50. So, the respondents are not satisfied with the safety related logistical support provided by the factories. Here the responses of respondents are shown in the graph below:

Calculation of Standard Deviation

Calculation of standard deviation for 200 sample

Prerequisites

Data analysis, interpretation and findings:

Standard Deviation ($\sigma$) = $\sqrt{npq}$ (since Binomial

Variance= npq) = $\sqrt{200 * 0.5 * 0.5}$ = 7.07

Where n = 200

p = 0.5

q = 1-p = 1-0.5 = 0.5

Standard error of the mean for infinite population:

$\sigma_{\bar{x}}$ = $\sigma / \sqrt{n}$ = 7.07 / $\sqrt{200}$ = 0.50

Hypotheses Test

Hypotheses: I

At 90% level of significance:

Null Hypotheses $H_0$: $\mu \geq 3.5$

Alternative Hypotheses $H_1$: $\mu < 3.5$

At level of significance, one tail Z test is done in the following table:
Hypotheses: 2
At 90% level of significance;
Null Hypotheses \( H_0 : \mu \geq 3.5 \)
Alternative Hypotheses \( H_1 : \mu < 3.50 \)
At 90% level of significance, one tail Z test is done in the following table:

<table>
<thead>
<tr>
<th>Confidence Level</th>
<th>Z Value</th>
<th>Z Observed Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>1.64</td>
<td>-0.21</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Since the calculated value (-0.21) is lower than the table value (at 90% level of significance is 1.64 for one tail), the Null hypothesis is rejected. It can be concluded that ventilation systems of the factories are not satisfactory.

Hypotheses: 3
At 90% level of significance;
Null Hypotheses \( H_0 : \mu \geq 3.5 \)
Alternative Hypotheses \( H_1 : \mu < 3.50 \)
At 90% level of significance, one tail Z test is done in the following table:

<table>
<thead>
<tr>
<th>Confidence Level</th>
<th>Z Value</th>
<th>Z Observed Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>1.64</td>
<td>0.09</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Since the calculated value (0.09) is higher than the table value (at 90% level of significance is 1.64 for one tail), the Null hypothesis is accepted. It can be concluded that hygiene systems of the factories are satisfactory.

Hypotheses: 4
At 90% level of significance;
Null Hypotheses \( H_0 : \mu \geq 3.5 \)
Alternative Hypotheses \( H_1 : \mu < 3.50 \)
At 90% level of significance, one tail Z test is done in the following table:

<table>
<thead>
<tr>
<th>Confidence Level</th>
<th>Z Value</th>
<th>Z Observed Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>1.64</td>
<td>-0.82</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Since the calculated value (-0.82) is lower than the table value (at 90% level of significance is -1.64 for one tail), the Null hypothesis is rejected. It can be concluded that safety committees’ performance of the factories is not satisfactory.

Hypotheses: 5
At 90% level of significance;
Null Hypotheses \( H_0 : \mu \geq 3.5 \)
Alternative Hypotheses \( H_1 : \mu < 3.50 \)

At 90% level of significance, one tail Z test is done in the following table:

<table>
<thead>
<tr>
<th>Confidence Level</th>
<th>Z Value</th>
<th>Z Observed Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>1.64</td>
<td>-0.89</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Since the calculated value (-0.89) is lower than the table value (at 90% level of significance is 1.64 for one tail), the Null hypothesis is rejected. It can be concluded that safety related logistical support of the factories is not satisfactory.

VI. RECOMMENDATIONS
On the basis of the findings from the study, the following recommendations are given to ensure health, hygiene and safety into the RMG sector of Bangladesh;

a) The owners of the factories need to ensure a sound healthy work environment. In order to ensuring such workplace, the relevant sections of the Labor Law’s need to apply properly. Moreover, the employer needs to take steps to clean the stair, floor & wall regularly. The owner also needs to take steps to varnish the walls, roofs as per Law. The employers need to keep balance between the work room space and the number of employees. Adequate number of dustbin, spittoon need to supply at workplace and motivate employees to use this. Effective initiatives need to apply in case of disposal of waste & effluents produce by the production process.

b) The owners need to ensure adequate initiatives for ventilation of the factories. The heat, dust and fume which are created due to production systems need to control.

c) Each and every factory need have safety committee. This committee needs to closely work with the others functional areas. Factories need to have emergency plan and this plan should be adequately implemented. Every one of the factories needs to involve with the plan. Every one of the factories needs to provide required guidelines about any unpredictable accidents. Safety related training need to provide the employees and workers in order to ensuring their adequate efficiency about handling emergency situation.

d) Every factory needs to provide adequate logistical support to the concerned workers. Adequate personal protective equipment (PPE) need to provide at workplace. First aid facilities and registered doctor also need to confirm at workplace. Modern equipment, technology and well trained person need
to ensure at work time. Workers need to give training on safety issues in order to enhancing their skills which will reduce the loss both financial and life both.

VII. CONCLUSION

Health, hygiene and safety are important issues in present challenging workplace. Clean working environment motivates employee to be engaged with full concentration which increases the overall productivity of employees. On the other hand, these things also create reputation into market which also creates a competitive advantage over the rivals.

Hygiene working environment and safety is especially applicable in RMG industry. Because, lot of people both educated and uneducated are working in the sector. Moreover, the economy of Bangladesh largely depends on the sector. The study reveals that, the factories are not following the Labor Law properly in order to maintaining health, hygiene and safety into the sector.

Most of the firm is not conscious about the clean working environment, ventilation systems, safety committee performances and the logistical support regarding the safety issues. On the other hand, most of the respondents are satisfied about the hygiene systems of the factories.

In this situation, the Labor Law should be properly implemented to create a healthy working environment. Government also needs to closely monitor the sector due to the issue. On the other hand, the concerned employees, workers, owners, buyers should be more conscious about the workplace. If all concerned parties play their duty properly than it will be possible to create a sound health, hygiene and safe work place in the sector. Thus, a better image will be created into the global market about the sector which will provide the sector a competitive position over the global environment.

REFERENCES


An Exploratory Research on Emerging Technology Is the Future in Healthcare Industry to Improve Quality of Treatment and Efficiency in Service

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Abstract – Our purpose is to understand the key elements of implementing large scale change that involves digital technology in Healthcare sector. The use of digital technology in health can improve quality, efficiency and patient experiences as well as improving the health of a population. This report shares practical learning from many case studies existing report, articles and journals based on ‘Technology bending Healthcare industry’.

Keywords – Healthcare, Technology, Industry, Improving Diagnosis, Ensuring Safety, Planning Services, Patient, Doctors, Satisfaction.

INTRODUCTION
Right now in 2018 there are approximately 7.2 billion people on our planet and most people at some point encounter a health related setback during their life. Thankfully with the ever evolving health technology sector we are all in better stead for prevention and recovery than ever before. For instance In this exact moment there are 19 million people keeping track of their fitness using wearable tech. People have access to the eye knife that can smell cancerous tissue and thanks to stem cell therapy repairing damaged heart tissue people are getting back on their feet. [15]. And it doesn't stop here the year 2020 population will be 8.1 billion and the demand for wearable tech has risen up to approximately 60 million users in the world it’s even integrated into our daily chores. Moving to further the year 2050 population nine point six billion. A place where the tech we use and our bodies will be one in the same sense. The clad garments will keep our every body movement analyzed. Robots will assist in surgeries and our prescription and treatments, all start with a look at our DNA. There is hover wheelchairs, laser injections, Wi-Fi charge pacemakers it’s all available to us and it is on its way as the evolution of health technology carries on taking us to a place where the imaginable is possible.

LITERATURE REVIEW
New technology is promising to transform a health care sector and it is increasingly struggling with the need to do more with less funding. Many providers and commissioners are looking for opportunities to use technology in health care. Therefore, the future is bright for technology in health and social care. Local care providers are digitizing with their own imitativeness[9,10]. Every time a patient has an interaction with an NHS organization or clinics. They collect their information and store them individual basis. This data also uses for purposes that go beyond an individual’s care. To enable NHS organizations to understand the health needs of their local population. It is helpful to monitor and manage services and for research[3,4].

Technology has the potential to bring about a more fundamental change in the relationship between patients and health professionals. Greater adoption of technology and using it more effectively present opportunities to drive improvements in quality, efficiency and population health and revolutionize patients and user experience in a number of ways[6].

Technological advances offer significant opportunities to improve health care. Increasingly technology is enabling professionals to deliver care remotely thanks to digital technologies this is happening in all parts of the health service. NHS (National Health Service) England has allocated £45 million over five years to support the uptake of online consultation[1]. In the United States, intensive care units in smaller and remote hospitals are often supported by electronics systems that allow a team of clinicians to review patients, with positive results.

In light of recent announcements came out that, technology is likely to have a big role to play in Health Sectors services. Based on research, it is said that technology will be a driver for some of the desired outcomes of increased funding. Digitizing the Health sector could lead to more accurate and quicker diagnosis, new care investments and more closely integrated patient pathways surely provide better quality care[3,4]. Unlike past initiatives, local health and care organizations are moving forward with their own through digital change. They are doing it by using a team approach, with clinicians, suppliers and transformation managers working together to find a common vision that modernized services. Lastly it is then get design and build new pathways supported by technology.

According to Dr. Robert one of his reports case studies, explores the important relationship between technology and user engagement. He also shares that, ‘New technology has the potential to transform a health and care sector that is under pressure to do more with less funding. In his upcoming report, Digital change in health and social care we will share the lessons from five case study sites that have made significant progress towards their digital aims. [5]. Engaging clinicians in projects like this is crucial for success. There can be obstacles to change; for example, the way they now take notes and document clinical decisions
can be as much as their own habits as it is about the content itself. Ultimately, clinicians, developers and operational mangers formed effective way to start up in the heart of the hospital. As a result, they are able to map out not only the patients journey but also the role of every stakeholder including clinic nurses, staff, doctors and schedulers. In medicine you are always working with certain levels of uncertain information, the amount of missing information has dramatically changed. If the clinicians have access to up to date information themselves, whether it is a detailed patient record or other things, then they are able to make a better and more informed decision. Thus it will then ensure better quality, better safety and also improve the patient experience. It is not that the investment or training is large enough. It is not the system that’s the issue, it is the people who are using it. Also it is not the issue of having the money. It is because it is never asked for that. It is that it was not taken that to its fullest extent. There was agreement about the benefits of technology, as well as the factors that help or hinder efforts to implement it. World is looking for improving this sector it is high time it gets done. Out there are lot of potential customer trying to improve their condition? They are seeking their picture perfect solution to it. It is upon us working behind this sector and gift them what they are dreaming of. The use of digital technology in health and social care can improve quality, efficiency and patients experience as well as supporting more integrated care and improving the health of population[9,10].

Health tech is a flourishing sector in healthcare driven by a board spectrum of information technologies and solutions that have the capability to transform healthcare’s value chain from lab to patients. These technologies are shifting the industry paradigm from a curative and a service based model to a holistic one. Health tech leverages the computational power of portable devices such as smartphones and cloud based infrastructure to collect and analyze large chunk of health related data are revealing patterns linked to myriad of healthcare outcomes[14]. Since its independence in 1971, Bangladesh has been struggling with providing its populace with a proper health care system. Recent statics suggest that it has been making progress throughout the years. Here, we are going to look into the nature and mechanism of the industry, what problems can be faced with existing resources. However over the year, Bangladesh has made a notable importance in the area of immunizing children under the age of five. A renowned British medical journal the Lacent noted that Bangladesh’s under 5 month mortality rate has been fallen to per 100 live births in 2006 from 202 in 1979. Therefore, healthcare in Bangladesh proving with three major categories. The type of service patients need is determined by the medical necessity[12].

**METHODOLOGY**

The findings are going to follow the complete research depending on primary and secondary sources. We did online survey on 200 respondents (Google form) which is our primary source of collecting information for the survey. The research has been done among different level of people (students, service holders, Business persons) of our society. As well as for getting better idea about the topic we did secondary research on the website. We read different online articles and journals about our research topic. This study is an exploratory research and a sample of 200 respondents (Different demographic of people). These respondents were chosen though simple random sampling. Among those respondents 84.6% was between 18-25 years old and others were between 26-60 years. Most of the respondents were students (76.9%) of various universities while the rest were from several other professions. A sample of varying age and different occupation groups were taken to maintain a versatile model. Of the total respondents 76.9% were female, 23.1% being male.

**FINDINGS**

In this paper we have tried to figure out that if technologies are used as enough as required and also the view point of the respondents about the usage of technologies in health care industry. From our research we have found out that people rely less on the health care service of our country and they are more likely to obtain the treatment from other countries. Furthermore, those who can afford, visit to different countries for the treatment most commonly in India, Singapore, and Thailand etc. We can use the term for the use of technology here as m-health, which describes the use of mobile telecommunication and multimedia technologies as they are integrated within increasingly mobile and wireless health care delivery systems. The aim of this paper is to encourage reflection and discussion around the potential of m-Health in developing countries and to consider how early experiences can inform the way forward [11]. Also, the business community is highly interested to assess the opportunities in the sector. Three factors will likely contribute to making m-Health solutions scalable, as would be true for any sort of service: (1) increased demand for the services from consumers; (2) strategic partnerships between industry, governments, implementers, and researchers to support large-scale implementation and evaluation of bottom-up and top-down eHealth systems and applications, and (3) an enabling policy and operational environment [11].

**CONCLUSIONS**

According to Light scale Partners Bangladesh Business Confidence Index, Healthcare is the most promising sectors as the moves towards Digital Bangladesh 2020. A country of 160 million population (according to the latest census) achieved incredible strength in several areas of health care. For example, drastic fall of child mortality rate (0.24%), but the country suffers from when it comes to delivering health care, tackling nutritional problem, lack of knowledge professionals and general health care problems. The country still remains among the 57 countries.
recognized by WHO in 2006 for having a severe scarcity of trained medical professionals.

According to WHO, for every 1000 people in Bangladesh there are only 0.3 doctors and 0.3 nurses. Thus it has a direct impact on how we deal with health care. Our hospitals are overcrowded, physicians are overworked, quality of service continues to decline while the cost of healthcare continues to rise. This offers a huge opportunity and a handful of startups are developing technology solutions to combat these problems. Over the last decade a number of companies have come forward to help close this gap and help healthcare service providers overcome their inadequacies with technology. These companies help building a quality expectation among patients and their targeted customers. Besides, government’s extended support to the ICT industry has a major role to play to drive this technology oriented services for becoming more prominent. Also by taking more inspirations from more developed countries, entrepreneurs within the ICT sector recognized this need as an opportunity. “Health tech is just getting started in Bangladesh. At this point, I would not even call it an industry” says Ahmed Abu Bakar, COO and Co-founder of the telemedicine service facilitator, Jeeon. “It’s really a number of small firms trying to use technology to create innovations in the healthcare industry. He feels sure that over the next five years people will see some great success stories. He also believes that some of these innovations will succeed in creating wide spread changes in behavior, to the point where five years from now, online doctor bookings, drug ordering and delivering will be the norm rather than exception.

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Analyzing the Export Performance of Readymade Garments of Bangladesh

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Abstract – This paper analyses the readymade garments export performance of Bangladesh using the secondary data of 28 years from 1990 to 2017. This research has tried to investigate the RMG export growth rate using mathematical model named the geometric method for various comparison. Firstly, the overall export of RMG growth rate has been observed then it compared with individual growth rate of Knitwear and Woven clothes exports. It shows that the growth rate of Knit wear is higher than the overall RMG growth rate and on the other hand, the growth rate of Woven clothes is comparatively lower than the RMG export growth rate. Then, it shows the comparison of percentage of Knitwear and woven clothes exports to the total export of RMG. Here, it has been observed that the percentage of Knit wear of RMG has increased dramatically compared to woven clothes. In 1993, the share of Knit wear and woven clothes to RMG export were 18% and 82% respectively but in 2017, the share of Knit wear has increased to 48.9% and the share of woven clothes has decreased to 51.1% which is a stable position of two categories RMG items. Finally, we have calculated the growth rate of garments factories and the growth rate of garments workers which tells us that the growth rate of garments factories has been declined in the very recent few years that is, 0.3% only in 2017 which was almost 40% in fiscal year 1992 and the growth rate of workers have become almost zero. It clears that Bangladesh have developed in this sector dramatically for last two decades and there is not enough scope to improve. Also, Rana Plaza accident in the year 2013 can be a major cause for the poor growth rate of factories and the workers. For this, it is said that in this sector there is not much to develop in export but it is necessary to focus to hold the successful exporter position of RMG by maintaining the proper working condition for the workers otherwise, there will be an awaiting threat for Bangladesh.

I. INTRODUCTION

The readymade garments business goes about similarly as an impetus (catalyst) for the advancement for Bangladesh. The “Made in Bangladesh” tag additionally brought glory to the country, making it a prestigious brand crosswise over the globe. Bangladesh, which might have been once termed by cynics a "bottomless basket" need right away get a "basket full of wonders." The country for its constrained assets need been looking after 6% twelve-month normal (annual average) GDP Growth rate and need achieved momentous social and mankind's improvement. The business that need been settling on urgent commitment on modifying the country and its economy may be none other than the readymade article of clothing (RMG) industry which will be currently the single most amazing export earner to Bangladesh. The segment accounts to 81% for downright send out income of the particular nation. Ready-made garments (RMG) have now ranked second in the export world. The profitable performance of export trade has been independently driven by the RMG sector, which has easily proved by its share in total exports rising from almost nothing in 1980 to 81.13 percent in 2013 (M.R. Islam, M. Haque, 2018). According to BGMEA, there are 4482 garment factories in Bangladesh (2016-2017) and about 4 million workers are working in it. About 90% garments workers are women approximately who hold the overall RMG sector of Bangladesh for the last two decades (BKMEA, 2017). Day by day, the earnings from RMG export has also increased significantly along with the number of factories and workers. In 2016-2017, Bangladesh Garments have earned US $28149.84 million which is almost 81.23% of total export of Bangladesh which was US $ 866.82 million in 1990-1991 (50.47% of total export) (BGMEA, 2017). The main destination of RMG export to United States, UK, Germany, European Union and many other countries (BGMEA, 2017). RMG export is the backbone of Bangladesh total export which hold the economy of Bangladesh. It helps Bangladesh in its sustainable development in economy. For this, RMG export is a very important sector of Bangladesh and it is necessary to keep analysis on it. In this analysis, we have used data of BGMEA from fiscal year 1990-1991 to fiscal year 2016-2017.

II. BACKGROUND

Ready-made garment is the most successful export sector of Bangladesh since 1990s. It is now considered as the largest exporter of the world after China. The readymade garments have comprised almost 89% of total export of Bangladesh (M.R. Islam, M. Haque, 2018). The lowest labor cost has attracted the outside world especially European countries to import garment items from Bangladesh. Total apparel export of RMG Bangladesh mainly consists of Woven and Knit Wear and the main export items of Bangladesh are Shirts, Trousers, Jackets, T-shirts and sweaters for the last 28 years which are mainly exported to USA, UK, Germany, Spain, Italy, Canada and France which make them the main and successful export partners of Bangladesh. The number of garments industries have increased significantly in this period which also help to meet the need to supply the orders (export) in time. Oher than the above-mentioned countries, Bangladesh also export their Woven and Knit wear to many other populated countries like Saudi
Arabia, Thailand, Norway, Philippines, Chile, Australia, Russia, South Korea, Mexico, Romania, Albania, Cyprus, Slovenia etc. To maintain the overall export of Bangladesh, the government has set up the Export Processing Zone (EPZ) in 1980s. EPZ helps to uplift the export of Bangladesh. (M.R. Islam, M. Haque, 2018)

III. METHODOLOGY
In our analysis, we mainly focus on the growth rate of Ready-made garments. To calculate the growth rate there are many methods. We have selected two methods like Arithmetic method and Geometric Growth rate. The Geometric Growth Rate has been used for the calculation as the geometric method and the Arithmetic method has behave similarly for year wise calculation as both method considers the first and the last observation of the series.

1.1. Arithmetic growth rates:
For the growth rate of one-year arithmetic method will be used due to the simplistic assumptions (OCED, 1997). The percent change of growth rate from one year to another year is calculated from the formula:

\[
r_n = \frac{Y_n - Y_{n-1}}{Y_{n-1}} \times 100
\]

Where:
- \( r_n \) = The growth rate in year
- \( Y_n \) = Represent the value in year
- \( Y_{n-1} \) = Previous year value

1.2. Geometric growth rates:
Geometric growth rate is widely used for indicators on economic phenomena, such as GDP or trade (Kakwani, 1997; Mawson, 2002; OCED, 1997; The World Bank, 2015). Geometric growth rates are used for all international trade time series, the geometric growth rates are used (World Bank, 2015). Geometric growth rates are used for all indicators in all statistical publications and the online statistical database (ESCAP, 2015). The geometric growth rate represents compound growth over discrete periods, where the changes between two periods differ by a constant ratio. The formula to measure the average growth rate of the values say \( Y_0, Y_1, \ldots, Y_n \) over the period of \( n \) is:

\[
r = \left( \frac{Y_n}{Y_0} \right)^{\frac{1}{n}} - 1
\]

Where:
- \( r \) = the growth rate over the year \( n \)
- \( Y_n \) = the value at end year \( n \)
- \( Y_0 \) = the beginning year value
- \( n \) = the number of periods between the beginning period and the end period (that is \( n-0=n \))

To get the percentage growth rate then it will be multiplied by 100. It is noted that for 1-period interval geometric and arithmetic growth rates are equal, as the arithmetic and geometric formulæ become equal.

The geometric growth rate formula is derived from the compound growth formula of

\[
Y_n = Y_0(1 + r)^n
\]

If the starting year and ending year is considered as \( Y_1 \) and \( Y_n \) respectively, the geometric growth rate for the values \( Y_1, Y_2, \ldots, Y_n \) over the period of (n-1) will be

\[
r = \left( \frac{Y_n}{Y_1} \right)^{\frac{1}{n-1}} - 1
\]

\( n-1 \) = the number of periods between the beginning period and the end period (that is \( n-1 \))

Like the arithmetic growth rate formula, the geometric growth also considers only the first and last observation of the time series, and not the intermediate values.

Geometric growth rate is widely used for indicators on economic phenomena, such as GDP or trade (Kakwani, 1997; Mawson, 2002; OCED, 1997; The World Bank, 2015).

IV. RESULTS
Analysis the export of readymade garments using the growth rate which has been calculated using the geometric method as it is comparatively good method. This method considers all the data points in the series which ensures that the result has least chance to be biased by the random high or low ending or beginning year value. In this article, the secondary data collected from BGMEA from 1993 to 2017 have been used. The overall export growth rate of RMG has been examined along with the components (Woven and Knit) growth comparison year wise for the last 25 years. Moreover, it also examined the growth comparison of labors in garments and the garment factories growth rate. First, it notices the yearly growth of overall RMG export for last 28 years.

![Figure 1: Export of RMG yearly growth](image-url)
composed of Woven clothes and Knit Wear. Now, in Figure 2 it has been observed the comparison of overall RMG growth rate and the Knit wear growth rate.

Figure 2: Comparison between overall RMG growth rate and Knit wear growth rate export
This figure shows that the Knit wear export growth rate is almost higher than the overall export growth rate of readymade garments each year for the last 28 years.

Figure 3: Comparison between overall RMG growth rate and Woven clothes growth rate export
Here, it is observed that growth rate of woven clothes is slightly lower than the overall growth rate of readymade garments almost in every year for last 28 years. This indicates that the Bangladesh is improving in Knitwear export more compared with the woven clothes.

Figure 4: Comparison of Knit Wear and Woven export percentage of total RMG export
This shows that in the very beginning the share of Woven in readymade garments is higher but it declines as the percentage of knitwear is increasing in the following years. In fiscal year 1993 percentage of woven clothes and knit wear was 83% and 18% respectively. But, in the Fiscal Year 2017 the percentage of Knit wear is 48.9 and the percentage of Woven clothes is 51.1 which indicate the most stable condition of two sectors of readymade garments export. Here, it has been observed that the knit wear in RMG export has been increased dramatically compared to the woven clothes export within this period. This is a very positive indication of Knit wear and the Bangladesh export.

As the export of readymade garment increases, it has a huge impact on reducing the poverty level and unemployment of Bangladesh. For this, it has been examined the growth rate of garment factories and the garment workers in Figure 5.

Figure 5: Comparison of growth rate of garment factories and growth rate of workers
The graph shows that the growth rate of workers in garments is positive and fluctuate but after 2012 for the last 5 years it has no change. On the other hand, the growth rate of garments factories has been decreased but positive except in the year 2014 it has experienced a huge decline of -29% as many garments closed after the Rana Plaza incidence. Then, in the very next year, the growth rate of garment factories has been increased to 0.3% but the growth rate of workers has no change.

V. CONCLUSION
The readymade garments of Bangladesh have analyzed deeply for the last 28 years from fiscal year 1990 to 2017 using the BGMEA secondary data. The overall export growth rate of readymade garments in this period is 11.8% which plays a major role to reduce the unemployment rate and the poverty level of Bangladesh. In this sector, almost 90% workers are female in 4 million garments workers which makes garments the heart of income of foreign currencies for Bangladesh. This analysis shows that the export of readymade products mainly divided into knitwear and woven clothes. The export growth rate of Knitwear is higher than the overall readymade garments export but the export growth rate of Woven is almost lower than the overall readymade products export. This indicates that Bangladesh garments have become popular for Knitwear as their garments items along with woven clothes to outside world. In which last 28 years, the knitwear export growth has been increased significantly and now in 2017 the share of Knitwear and Woven clothes to total RMG is 48.9% and 51.1% respectively. Moreover, the analysis brings the comparison of growth rate of garments workers and the growth rate of garments factories. It shows that the growth rate of garment factories has been decreased but positive except in the year 2014 when it experienced a huge decline of -29% as many garment factories have been closed after the Rana Plaza incident. On the other hand, the growth rate of workers has been fluctuated and remained positive for last 28 years. But after 2013, the growth rate of garment workers is zero dramatically for the last 5 years. Bangladesh have been developed tremendously in their RMG export sector undoubtedly in last 28 years. There is not much space to develop in this sector for Bangladesh. But experts need to aware about the working condition of workers which can also increase the number of workers more and as well as export. It is now the time to keep the position in the world market which Bangladesh have achieved by keeping immediate precaution to avoid any kind of accident like Rana Plaza. Bangladesh have overcome that accident successfully but the number of workers and factories nowadays.

REFERENCES
[1] Bangladesh Garments Manufacturers and Exporters Association (BGMEA), 2017
Sustainable E-service Value Distribution Model: In Aspect of Psycho-social Framework

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Abstract – Now a days, e-service distributors are less conscious about distributing the value. Today’s entrepreneurs do not give core interest for content development. As a result, customers are getting less information and customer dissatisfaction is growing up in this sector. For distributing a reliable and flexible service, a sustainable must be followed. Quality of service, satisfaction and relationship should be given core interest to constitute a sustainable value distribution model for today’s business. For developing this model, psychosocial development and VALS personality are given higher core interest so that, business expenditure can be considered as investment.

Keywords – Quality, Satisfaction, Relationship, Psychosocial, personality

I. INTRODUCTION
How internet users are satisfied is the real question when billions of world population are using internet in their daily life. Accordingly, the psychological requirement of web content quality provided by e-business organization might satisfy their need.
In the similar sense the relationship quality of internet service provider also depends on satisfaction of internet user.

Research Objective - The primary objective is to understand the relationship between e-service quality and customer satisfaction. In border aspect, the research deals with measuring relationship between customer relationship and customer satisfaction to develop a sustainable value distribution model for e-service sector based on human psycho-social development and their personality.

Scope of the Research – The study deals with how e-service quality of ISP influence relationship quality and satisfaction. It does not include extended aspects like marketing mix, consumer behavior etc.

Limitation: As old aged people are less familiar with e-service than young people, minimum respondents are surveyed because of time constrains. Bigger sample size can give a better understanding about this sustainable model.

II. LITERATURE REVIEW
Psychographic segmentation helps to understand consumer psychology which helps to reach more to customer mind [1] Value, Attitude and Lifestyle (VALS) is a combination of 8 types of personality which are innovators, thinkers, believers, achievers, strivers, experiencers, makers, survivors [2] which was a developed version of VALS approach [3]. Human life cycle is a combination of 8 stages which are infancy, early childhood, preschool age, school age, adolescence, early adulthood, adulthood and maturity. [4] Human age has positive correlation with social relationship [5]. Customer personality is changing time to time and customers’ value, attitude and lifestyle is changing with personality.
It is expected that, people are keen to satisfy their own needs [6]. Therefore, favorable outcome should come from continuous improvement of the perception of quality, value and satisfaction in service encounter [4].

Service quality rely on service marketing of both a transactional nature such as impersonal, discrete, episodic exchange & relational nature such as closeness, endurance, interdependent association [7]. Moreover, service quality and customers satisfaction has a unique relationship [8]. In addition, customer relationship management (CRM) is shaped by customer retention, product amplification, establishing long term relationships with customers, service, commitment and concern about quality. [9] The relationship between qualities of service, customer satisfaction and CRM is shown in figure 1.

It is expected that, people are keen to satisfy their own needs [6]. Therefore, favorable outcome should come from continuous improvement of the perception of quality, value and satisfaction in service encounter [4]. From that point hypothesis established as

Figure 1: Value distribution model
H1: Satisfaction of Internet User is related with development of web content quality of E business organization.

In addition, Relationship with consumers helps to know more about consumers which helps to increasing the amount of sales and create good word of mouth (WOM) to capture new customers [10]. Due to rapid declining of consumer trust in traditional marketing advertise, marketers are using WOM [11]. Successful relationship marketing is laid in trust and commitment [12]. Thus, there is a relationship between WOM and relationship marketing. By that hypothesis can be derived as

H2: Relationship quality of Internet Service Provider is ensured by satisfaction of Internet user.

Accordingly to match with previous two idea, the next assumption of the content management and Relationship quality automatically implies. Following the assumption the next hypothesis infer-

H3: Relationship quality of Internet service provider is ensured by the proper management of content.

The study also indicates that with the upturn of age social relationship also intensifies. To prove the assumption the next hypothesis is -

H4: Age is correlated with social relationship

Previous studies used following variables mentioned in TABLE 1 to measure Relationship Quality. This research is conducted accordingly.

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III. METHODOLOGY

At initial period, a base of research is designed depending on the idea of RelQ (Relationship Quality), Customer satisfaction and Service quality of ISP (Internet Service Provider). Then a questionnaire is designed reviewing the prior relevant research. With the developed questionnaire, a survey is conducted. SPSS is used to perform the statistical analysis.

(1) Respondents and Sampling - Convenience sampling is used in this research who use internet. At present, almost everyone use internet. Therefore internet user from different age people are considered as sample.

(2) Instruments – A structured questionnaire (Appendix-A) is used as the research instrument for the survey. The questionnaire is designed from the relevant prior studies. To analyze the Service Quality, RelQ and Satisfaction, the questionnaire includes fifteen Likert scale questions, which has 5 point Likert scaling; where 1 represents “Low Agreeability” and 5 represents “High Agreeability” and three categorical question is asked to conform their age gender and personality based on VALS approach [3].

IV. RESULTS

It has already been proved that, elder people are more relationship oriented and for that reason they are with Internet service providers (ISP) than younger people [5]. According to our survey, relationship quality with ISP of preschool aged people is 72%. Relationship quality with ISP in increased by 2% in school aged people. Relationship quality with ISP of adolescence aged people is 76.2%. In early adulthood aged people, relationship quality with ISP is 67.4%. Relationship quality is increased by 2% in adulthood aged people.
Finally, in maturity age, relationship quality goes at 74.4%. On that basis, we can say, people become more relationship oriented with ISP. In addition, ISP are very successful to maintain relationship with striver people. It also says; innovator, satisfied and self-sufficient people maintain better relationship than thinker, believer, self-expression and survivor personality people.

Moreover, the survey also states, there are 102 valid samples with no missing value. Respondent perception about trust mean value is 3.55 and median value 4.00 signifies that, majority of the respondents are perceiving a trustworthy service from ISPs. Result implies that, 9.8% of the respondent are highly satisfied with relationship and 51% of the respondent are satisfied with relationship with ISPs. The result extends by, 13.7% respondents being dissatisfied with the relationship as well as 1% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 21.6% of respondents are neutral about this issue.

On next issue, respondent perception about satisfaction mean value is 3.62 and median value 4.00 indicates that, majority of the respondents are satisfied with ISPs. Result points toward that, 12.7% of the respondent are highly satisfied with relationship and 56.9% of the respondent are satisfied with relationship with ISPs. The result extends by, 16.7% respondents being dissatisfied with the relationship as well as 2% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 11.8% of respondents are neutral about this issue.

While commitment, the mean value is 3.24 and median value 4.00 which claim that, majority of the respondents are noticing that ISPs are committed to their customer. Result implies that, 6.9% of the respondent are highly satisfied with relationship and 45.1% of the respondent are satisfied with relationship with ISPs. The result extends by, 29.4% respondents being dissatisfied with the relationship as well as 2.9% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 15.7% of respondents are neutral about this issue.

On communication, the mean value is 3.56 and median value 4.00 signifies that, majority of the respondents thinks that, ISPs do communicate with customers. Result implies that, 17.6% of the respondent are highly satisfied with relationship and 46.1% of the respondent are satisfied with relationship with ISPs. The result extends by, 19.6% respondents being dissatisfied with the relationship as well as 2.6% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 13.7% of respondents are neutral about this issue.

At joint problem solving, mean value is 3.08 and median value 4.00 signifies that, majority of the respondents are perceiving a trustworthy service from ISPs. Result implies that, 5.9% of the respondent are highly satisfied with relationship and 38.2% of the respondent are satisfied with relationship with ISPs. The result extends by, 32.4% respondents being dissatisfied with the relationship as well as 4.9% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 18.6% of respondents are neutral about this issue.

In bonding the mean value is 3.51 and median value 4.00 signifies that, majority of the respondents are bonded with ISPs. Result implies that, 11.8% of the respondent are highly satisfied with relationship and 51% of the respondent are satisfied with relationship with ISPs. The result extends by, 19.6% respondents being dissatisfied with the relationship as well as 2% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 15.7% of respondents are neutral about this issue.

Moreover, the survey also states, there are 102 valid samples with no missing value. Respondent perception about goal congruence mean value is 3.09 and median value 3.00 signifies that, majority of the respondents are perceiving goal seeking characteristics of ISPs. Result implies that, 8.8% of the respondent are highly satisfied with relationship and 33.3% of the respondent are satisfied with relationship with ISPs. The result extends by, 30.4% respondents being dissatisfied with the relationship as well as 5.9% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 21.6% of respondents are neutral about this issue.

Moreover, the survey also states, there are 102 valid samples with no missing value. Respondent perception about investment mean value is 3.08 and median value 3.00 signifies that, majority of the respondents are perceiving that ISPs are investing on consumer value. Result implies that, 9.8% of the respondent are highly satisfied with relationship and 33.33% of the respondent are satisfied with relationship with ISPs. The result extends by, 25.5% respondents being dissatisfied with the relationship as well as 9.8% of the respondents being
highly dissatisfied with the relationship because of uncertainty. At the end, 21.6% of respondents are neutral about this issue.

The power mean value 3.33 and median value 4.00 signifies that, majority of the respondents are perceiving that they are important to ISPs. Result implies that, 7.8% of the respondent are highly satisfied with relationship and 49% of the respondent are satisfied with relationship with ISPs. The result extends by, 19.6% respondents being dissatisfied with the relationship as well as 5.9% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 17.6% of respondents are neutral about this issue.

Profit mean value 3.44 and median value 4.00 implies that, majority of the respondents are thinking ISP profitable for them. Result implies that, 12.7% of the respondent are highly satisfied with relationship and 43.1% of the respondent are satisfied with relationship with ISPs. The result extends by, 12.7% respondents being dissatisfied with the relationship as well as 5.9% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 25.5% of respondents are neutral about this issue.

Moreover, the survey also states, there are 102 valid samples with no missing value. Respondent perception about service integrity mean value is 3.39 and median value 4.00 signifies that, majority of the respondents are perceiving ISPs interactive. Result implies that, 9.8% of the respondent are highly satisfied with relationship and 47.1% of the respondent are satisfied with relationship with ISPs. The result extends by, 15.7% respondents being dissatisfied with the relationship as well as 5.9% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 21.6% of respondents are neutral about this issue.

Moreover, the survey also states, there are 102 valid samples with no missing value. Respondent perception about need fulfillment mean value is 3.52 and median value 4.00 signifies that, majority of the respondents are being fulfilled their need by ISPs. Result implies that, 11.8% of the respondent are highly satisfied with relationship and 52.9% of the respondent are satisfied with relationship with ISPs. The result extends by, 62.7% respondents being dissatisfied with the relationship as well as 3.9% of the respondents being highly dissatisfied with the relationship because of uncertainty. At the end, 14.7% of respondents are neutral about this issue.

V. DISCUSSION

From the linear regression analysis it is revealed that, the relationship between “Satisfaction of Internet User” as depended variable and “Web Content Quality of E Business Organization” as independent variable, has Standardized coefficient of 0.465 with low significance level and R$^2$ value of 0.208 means 20.8% sample represents the result. Which accepts the hypothesis.

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It also includes the idea of “Customer Relationship Quality” related with “Customer Satisfaction” has standardized coefficient of 0.478 with low significance level and R$^2$ value of 22% represents the result. Therefore, **Hypothesis 2** is also accepted. Related to that, **Hypothesis 3** which describes the assumption that “Customer Relationship Quality” is related with “Web Content Quality” is also accepted by very low significance level with standardized coefficient of 0.572 and R$^2$ of 0.32 defines the 32% sample which describes the all data.

VI. CONCLUSION

Sufficiency in information, framework and security ought to be given core interest to design web content. In addition, better service quality and usable website must be ensured to distribute value to customers by developing technical awareness and innovation. Thus, sustainable value distribution model for online business can be developed by exerting relationship marketing.

Service quality rely on service marketing of both a transactional nature such as impersonal, discrete, episodic exchange & relational nature such as closeness, endurance, interdependent association [7]. Moreover, service quality and customers satisfaction has a unique relationship [8]. In addition, customer relationship management (CRM) is shaped by customer retention, product amplification, establishing long term relationships with customers, service, commitment and concern about quality. [9]
REFERENCE


APPENDIX
(a) CATEGORICAL ENQUIRY
1. Personality Trait (VALS Personality)
2. Age Group (Psychosocial age group)
3. Gender (Male or Female)
(b) ANALYTIC QUESTIONNAIRE:
[1 = Low Agreeability, 2 = Moderately Low Agreeability, 3 = Neutral, 4 = Moderately High Agreeability, 5 = High Agreeability]
1. How trustworthy is ISPs to you? [Trust]
2. How satisfied are you with the relationship with ISPs? [Satisfaction]
3. How conscious ISPs are about their commitment? [Commitment]
4. How fairness ISPs maintains to communicate? [Communication]
5. Do ISPs work with you together? [Joint Problem Solving]
6. Do ISPs maintains a bold relationship? [Bondage]
7. Do ISPs have same goal? [Goal Congruence]
8. Do ISPs support in your investment. [Investment]
9. As an internet user, how likely ISPs hear your word. [Power]
10. Do ISPs help you to earn your goal? [Profit]
11. Do ISPs serve you an integrated service? [Integrity]
12. Are ISPs working to satisfy your need? [Need Fulfilment]
13. How satisfied are you with international online service? [Customer Satisfaction]
14. How satisfied are you with Bangladeshi online service? [Customer Satisfaction]
15. What is the quality of web content? [Content Quality]

ABBREVIATIONS
CRM – Customer Relationship Management
Practicing Management Information System in Bangladesh

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Abstract – Management Information Systems is an essential factor in the existing world. The goals of the study to create eagerness for the usage of MIS in every sector in all activities for the betterment of condition. In this paper, we have tried to existing fundamental associated subjects of MIS that ability literature assessment and it consists of about MIS, Computer software, DBMS, telecommunication and networking, objectives, beneficiary persons, way of finding information, corporation assessment (it consists of historical background, company overview, practices of MIS in this organization), MIS practices and challenges in Bangladesh and ultimately providing likely recommendation.

Keywords – Information and verbal exchange technologies; records systems research literature; Development; Developing countries benefits of MIS, Decision making, MIS, MIS model, MIS concept, Need for MIS

1. INTRODUCTION

In order to reply the research, question a literature study, semi structured interviews and a survey have been conducted. During the late 90’s, Bangladesh has considered a growing increase of the ICT industry. Initially, the favorable tax coverage of the government of Bangladesh in 1998 accompanied by way of the world affordability of personal computer systems have had excellent have an effect on on the utilization of computer. The favorable import tax policy on computer systems and pc add-ons for the duration of that time was once one of the timely steps taken through the government of Bangladesh. From then on, in accordance with the world trends, both personal and public sectors in Bangladesh caught up with superb utilization of records technology. The formation of a considerable number of software program development companies is a properly indication of this development. Recently, wide spread telecommunication outreach all over the U. S. has

extraordinary export increase is the effect of the multinational telecom companies. These companies while operating in Bangladesh utilized the neighborhood IT region for many of their worldwide initiatives giving a good software program export chance for Bangladesh. Information is a set of categorized and interpreted data used in decision making and it has also been defined as “some tangible or Considering the definition for MIS, one of the popular definition describes management data machine (MIS) as “an organizational technique of presenting past, present and projected information related to inside operations and exterior intelligence. It helps the planning, control and operation functions of a company through furnishing uniform facts in the applicable time frame to aid the choice makers”. The facts in MIS describes the firm or one of its primary structures in terms of what has befell in the past, what is occurring now and what is possibly to happen in the future. The facts are furnished in the shape of reports and outputs of mathematical simulations. There are two types of reviews namely, periodic and exclusive report. All managers use the statistics output as they make decisions to remedy the firm’s problems. A management statistics system has additionally been defined as ”an integrated consumer computing device system for providing statistics to help operations, administration and selection making functions in an organization. The gadget utilizes computers, guide procedures, models for analysis, planning, manage and choice making, and a database”. All these definitions give a concise perception of MIS as a total intangible entity which serves to decrease uncertainty about future state or events”. There are distinct levels of decision making, for which records can be described as: Source, Data, Inferences and predictions drawn from information, Value and options, and Action which involves route of action. Management facts gadget has a motive to meet the regularly occurring statistics desires of all the managers in a company or in some subunits of the organization. A subunit can be based on useful areas or can be considered at administration levels.

II. LITERATURE REVIEW:

MIS refers extensively to a computer-based device that gives managers with the equipment for organizing, evaluating and effectively running their departments. In order to grant past, existing and prediction information, an MIS can encompass software that helps in decision
III. OBJECTIVES

MIS help decision makers, with the aid of imparting the required information at a range of degrees of decision making and consequently greatly assist the business enterprise to obtain its dreams and objectives. Make up to date for going through a number essential situation.

Know about the perception of MIS as an area of find out about and as an area of business.

Know about the situation of MIS practices in the world as properly as in Bangladesh.

Know the things to do of MIS of an enterprise.

Know about the MIS practices from global perspective.

Identify the issues of practices of MIS in Bangladesh.

Provide tips to remedy the problems for excellence overall performance in MIS.

IV. METHODOLOGY

The Primary Data was gathered from Head IT Infrastructure Managers in the Information System department of Humac Lab by way of taking bodily interview and accumulating documentation which gave an insight into the methods being followed with regards to the functioning of MIS. An interesting methodological discovering from the surveyed literature is that there is considerable focus of the need to look at the interconnection of tiers of analysis. In a survey article written about 10 years ago, which gives a fascinating comparative groundwork for our survey of current work, Sahay and Walsham (1995) argued the want for multi-level analysis, “The process of IT use in growing nations is a complicated phenomenon and it commonly entails actors at a range of levels. It is vital to study the interplay of these extraordinary actors on the procedure of IT implementation and use” (p. 118). Few papers were doing that 10 years ago, however now they are pretty common, and frequently with more state-of-the-art views of what constitutes an “actor” than in the quote above. For example, Sayed and Westrup's (2003) article on ERP systems in Egypt, discussed earlier, appeared at actor-networks involving world organizations, local companies, governments and resource organizations. With admire to labeling their methodological approach, the majority of the studies, if they tackle this explicitly, declare to be interpretive. Very few researches in our survey adopted a positivist strategy with mentioned hypotheses, units for records collection, statistical inference etc. It is past the scope of this paper to analyze the precise motives for this, however it is truly true that many of the research questions and challenges tackled through IS researchers in our survey would now not have lent themselves naturally to a positivist methodology. Many of the studies come throughout as pretty stable in methodological terms, with in-depth case studies being common, for example, the two-research described in Walsham (2002). This contrasts strongly with the typically “thinner” research mentioned in Sahay and.
Walsham (1995) a decade earlier. Perhaps surprisingly, bearing in mind the importance of action in addressing issues of development, motion study looks are truly rare, though the over 10-year research program in South Africa and some other place summarized by means of Braa and Hedberg (2002) is an outstanding exception. Overall, reading the survey paper of Sahay and Walsham (1995), and comparing it to our in-depth analysis of materials from 2000 onward, suggests to us that growth has been completed over the ultimate decade in research on IS in growing countries. However, we now flip to an ahead look to attempt to see where and how lookup could be advanced further.

III. RESULTS

Interview: Md. Mubir M. Chowdhury Co-Founder & CEO Humac Lab. According to Md. Mubir M. Chowdhury, it suggests Information Technology. It is a big platform and greater or less each people use statistics technology. It is in office, industry, home. IT assist to human beings join every other. In case of individual, official, professional, personal, globally in the entire world. IT enterprise is the part of ICT. IT industry assist to work fast, shop time, extra efficacy in the work, maintain the work accuracy and much less manpower. Frist of all, work quicker earlier than the IT the enterprise desires more work for instance one hundred worker but now they want 20 workers is properly for this work. The work efficiency is growing due to the fact of the management facts system. Today, the top-class office is connected to the low or middle-class officer or worker. People can easy find information about corporation product and service. Because of administration statistics device all facts are nicely organize so that corporation can locate their hassle easily and resolve as quickly as possible. Business to Business (B2B) type company need can locate their hassle easily and resolve as quickly as possible. Because of administration statistics device all facts are nicely organize so that corporation can locate their hassle easily and resolve as quickly as possible.

Problems to enforce MIS systems In Bangladeshi companies:

- Poor or insufficient infrastructural facilities.
- Unwillingness to make investments cash in this sector.
- Less net speeds.
- Lack of awareness.
- Poor knowledge about practices or importance of MIS.
- Lack of expert technique human resources.
- Rearing ordinary system.

- Lack of eagerness to acquire new things.

Recommendations for fixing the problems to enforce the MIS structures to attain operational excellence in Bangladeshi enterprises:

- Making excellent infrastructural facility to undertake changing situation.
- Making fund to introduce or run MIS structures in organization.
- Taking a number of attention things to do to understand the essence of MIS structures in this era.
- Trying to be self-dependent on technological sector.
- Providing coaching or workshop for making ability human resources.

At last, authorities guide is too crucial to put into effect the MIS systems in Bangladesh.

Management Information System Practices in Bangladesh:

The current scenario of MIS practices in Bangladesh is improving day by way of day. Every branch no longer solely private but additionally govt. companies are attempting to exercise MIS gadget in their activities. Some of the agencies have superior too far. These consist of Bank, Telephone operator, University, Organization, Hospital etc. Some MIS practices in Bangladesh are highlighted below:

Banking systems are now absolutely altering due to internet. All the transactions can be possible through electronic means. Account holder can withdraw or credit score cash to ATM sales space barring going to bank. Now items and services are bought over the internet. Example of e-commerce related web sites www.chokra.com Many departments of Bangladesh govt. have already brought MIS structures of their activities .Electricity bill can be supplied thru mobile cellphone .Mobile phone is used to purchase increase instruct ticket .Varsity admission shape and admission result can be known by means of cellular telecommunication service .Now hospitals receptionist can furnish all the statistics about affected person within a minute due to keeping database gadget .All the leading groups are used net based gadget to recruit their employees . There is a lot of lookup on the approaches, methods and applied sciences for the format and improvement of MIS. However, there are a few articles that cowl the effect of Management Information Systems on planning and decision making. While there are no universally popular definitions of MIS and those that exist in literatures are simply prejudices of the researchers (Adeoti-Adek ey, 1997). Lee, (2001) defined MIS as “a gadget or system that offers statistics needed to manage organizations effectively”. Additionally, Baskerville and Myers (2002) generally define MIS as “the development, use and software of records systems by using individuals, companies and society”. In his study, Becta (2005) describes a data machine as “a device consisting of the community of all
conversation channels used inside an organization”. In their study, Laudon and Laudon (2003) have described MIS as “the learn about of records structures focusing on their use in commercial enterprise and management”. The abovementioned definitions showed that MIS has underlined the development, software and validation of relevant theories and models in tries to encourage fine work in the area. Referring to the literatures, the area of Management Information Systems (MIS) has had a variegated development in its fairly short existence span. MIS has developed its very own theme of research and research (Baskerville and Myers, 2002). Tracing previous literatures, we can document that all through its first few decades, MIS targeted on the facts in the context of:

- Electronic records processing which contains out transaction processing functions and archives particular factual data.
- Management reporting systems which scrutinize the operational things to do of an organization, imparting summaries, data and remarks to management. Only all through the ultimate two decades, the MIS area has shifted to the primary, regarded the 2d kind of communication, namely, instruction-based. This has grown to be recognized as the domain of expert structures (Sasan Rahmatian, 1999). In attempts to assessment posted studies on MIS and articles, Alavi and Carlson (1992) have identified famous lookup topics, the dominant research perspective, and the relationship between MIS research and practice. In contrast, Baskerville and Myers (2002) have examined the MIS discipline and discovered a consistent shift of MIS research from a technical focus to a technology-organizational and management-social focus. Skyrius (2001) underlines the choice maker's attitudes in the direction of specific factors influencing the fine of business decisions; these elements include information sources, analytical tools, and the function of facts technologies. Handzic (2001) also will pay attention to the have an effect on of information availability on people's ability to system and use records in quick and lengthy time period planning and in selection making tasks. He revealed that the higher the avail capability of information, the higher the impact on both effectivity and accuracy of commercial enterprise decisions. Liu and Young (2007) speak about key information models and their relationships in commercial enterprise decision aid in three specific scenarios. The authors proved that world groups are in increase due to the Enterprise Applications System supplied through contemporary IT tools such as Enterprise Resource Planning (ERP), Knowledge Management Systems (KMS) and Customer Relations Management (CRM) to decorate the effectivity and effectiveness of the Decision-Making process.

In order to enhance the financial organizational functionality and beautify its stage of opposition in the market, monetary organizations must understand the dimensions of the Information Management, and really outline and strengthen the assets in case of human, technological, and inner operations, amongst others, and control them nicely across the organizational boundaries.

IV. DISCUSSION

Functions of Management Information systems of a company:

Complete grant chain management: they have built unique & sturdy sourcing and furnish management methods that supply fine services to their business partners. They are properly recognized for their information and professionalism in dealing with the whole technique from thought to fulfillment.

Fashion Design: They complement their client’s sketch department. They create styling according to client’s specs on fabrics, clothes and accessories. They research on patron needs and future trends. Using brand new technology, they hold abreast of the developments in the fashion industry and provoke brand new products.

Raw cloth sourcing: Their robust group of researchers will supply and evaluate the mills and accessories manufacturers of the yield. With their strong global network, they only seek yarn, material and add-ons at the great best and aggressive rate for their clients.

Sample Development: With their well-established relationships with factories together with some their very own factories, they are capable to get samples at the proper quantity, at the proper time. They ensure that samples are made in accordance to the client’s specifications, they also re-create and regulate famous styling to suit client’s demand.

Order Negotiation: They safeguard client’s hobby at all times. They always offer a very aggressive fee with quality. They filter the factories cautiously and make certain them client’s expectations are met accordingly.

Work in growth supervision: They accept as true with that the solely way to ensure exceptional and well-timed transport is to screen an order from cloth production and dyeing to delivery to the production line.

Yarn, Fabric & Accessories Research: They are in the technique of setting up a one of a kind “Yarn Fabric Library” which will be their client’s elite lookup center. The library will preserve their customers updated of the cutting-edge trend and advocate them of the USA of production which will permit them to revel in preferential tariffs and duties.

Production planning & manufacturing control: Together with their skilled staff, they layout and prepare the complete production system systematically. Every steps of the technique are cautiously planned and
recorded. They monitor each day and weekly output assuring delivery closing dates are met.

**Factory strength:** They have a community of more than 300 factories in over 20 nations in a range of continents. The factories specialize in all types of apparels. Their contrast crew and pleasant controllers always make sure that all the factories are nicely outfitted and qualified.

**Quality assurance:** They ensure that factories produce in accordance to their client’s necessities and specifications. Their group of nice controllers will conduct regular tests to assure great is maintained at all times. Their QC’s specialize in uncooked substances to completed goods inspection. They are also equipped with knowledge to give technical help to manufactures and high-end equipment to habits precise checks.

**Logistic coordination & export documentation:** They take care of all fundamental shipping preparations and ensure all documentary processes are made for that reason so that all shipments reach their customers promptly.

V. CONCLUSION

An administration records device (MIS) is a system that provides statistics wanted to manipulate organizations effectively. Management statistics structures contain three important resources: technology, information, and people. Finally, it can be surely said that if we desire to stroll with the globalization world, we must have to introduce MIS systems in each area in our country. We need to make cognizance of the humans about the new technology and systems and it benefits.

**RECOMMENDATION**

Based on these barriers plus different underlying issues that arise from the principal discussion, the following hints are suggested:

• There be an extended monitoring of MIS so as to keep away from falling victims of unobserved MIS which has dire ramifications.

• Managers and commercial enterprise proprietors need to find a way of tailoring facts in a way that it matches more than a few choice making procedures in variant businesses.

• The management ought to motivate the effectuation of a together interdependent and balanced MIS the place people and automatic structures are dealt with with due respect.

• Business entities have to locate a way inculcating teaching about new MIS in order to minimize the style of companies being left in the back of on new inventions.

• A well-defined decision-making system ought to be fledged in organizations so as to grant a viable working environment for MIS. A proper area to start here would be the inception of a centralized region the place all decisions in organizations are channeled via

• Business managers have to ensure that they appoint (or alternatively outsource) professional personnel who are in a position to ardently run both MIS and the selection making technique.

**REFERENCES**


Rising Conflict between Work Life and Personal Life: A Major Concern of the Employees of the Banking Sector of Bangladesh

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Abstract – The purpose of this paper is to examine the factors which are creating conflict between work life and personal life of the employees of the banking sector of Bangladesh and the problems they face for this rising phenomenon. Employee wellbeing and workplace performance are inseparable, like force and matter, and are inevitable for organizational growth. This paper also highlights the impact this conflict has on the satisfaction and productivity level of employees as well as on the organizational development. The findings of this paper is based on a survey done with the help of respondents who are currently working in different commercial banks of Bangladesh and 50 out of 150 responses were chosen through random sampling for the research purpose. Additionally, this paper contains some possible solutions to combat this problem considering both the employer and employee perspectives as well as the banking policies of Bangladesh.

Keywords – Work-life balance, mental and physical health of bankers, work environment, career growth.

I. INTRODUCTION

The term ‘work life balance’ refers to maintaining a balance between personal life and work life. It is mainly concerned with the time allocated for official work and personal work. Here, the term ‘balance’ does not mean having an ‘equal balance’ between the two aspects of life. In reality, no one can create a schedule that lets him or her to make an equal distribution of time between paid work and all other activities that are important to employees such as family, community activities, personal development, voluntary work, and leisure and recreation. The ever-increasing development of technology and globalization has resulted in ‘always-connected’ workplace and has introduced ‘digital firms’ where time-shifting and space-shifting are the norms [3]. People can stay connected to each other 24/7 and work at any time and from anywhere. This digitalized working nature has increased the demand of work from employees and this phenomenon has led to a blurry boundary between work life and personal life [5]. Whether someone is a senior executive, training manager or lower level worker- if she or he wants to achieve both personal and professional goals, manage time efficiently, gain leadership attributes and have less stress- he or she must identify the fine-line between work and personal life [6, 10]. Many research have been conducted in the developed countries regarding this topic as the overall work pressure has increased in all countries. The work pressure is greater in the developed countries due to their greater dependence on technology. Though much more collectivist in nature and not as developed as the USA or the UK or other developed countries, the South Asian countries are also putting much concern on ‘work life balance’. Ref [3] believes that the economy of this region is growing rapidly and the use of technology in this region is increasing at a high pace. Many employees of our country Bangladesh also struggle to balance their personal lives and work lives. So, this topic has become a big concern for the employees from every work aspects of our country. Our survey has reflected the presence of this problem in the banking sector of Bangladesh.

II. LITERATURE REVIEW

Balancing work life and personal life is very important for all types of employees. One must fine his or her own identity throughout their normal work life. When a person works in an organization, he or she is a part of a collective group. Then again, he or she must identify his or her roles related to families and friends. The ‘work life balance’ of each individual varies over time, it may be on a daily basis or a weekly basis [8]. The variations in ‘work life balance’ are caused by different cultures of different countries and family characteristics [10]. The developed countries like the USA, the UK etc. are more individualistic. The employers of individualistic countries prefer their employees to be more work oriented. Countries of South-East Asia are ‘collectivists’ in nature. The employers of this region put more value in family life than individualistic countries. Research shows that employee benefits, like- paid maternity leave, job sharing, flexible work time, time-offs are much more generous in collectivist countries than individualistic countries. But, the use of smartphones, email, video conferencing, free calls do not let employees make a proper balance between the two lives as their employers now put more pressure on them to work more than their usual working hours. The family characteristics have
The conflict between work life and personal life has little to do with gender. Because, many research have shown that 95% of working fathers and 90% of working mothers have complained about the work-life conflict they always face. The time spent at work has much more to do with work life balance. The ‘always-connected’ technology has increased the demand of employers. They now want their employees to work from home, gives pressure to carry out evening work after the regular office hours. These results in unhealthy personal relationships, distorted family life and diseases, like- hypertension, cardio-vascular diseases etc. [6, 10]. Though working for late hours lead to higher financial benefits, but these benefits come at the cost of sacrificing family responsibilities [4].

In our neighboring country India, a research conducted by Reddy et al. showed that Work-Family Conflict (WFC) and Family-Work Conflict (FWC) were more immense with women having eldest children of 6 to 10 years of age and that age of the children is related to WFC and FWC. By conducting research at a large manufacturing firm in Malaysia, ref [6, 10] found that job satisfaction significantly explains relationship among employee satisfaction, job performance and work security with quality of work life. Another study which focused on employees working in the central business region of Malaysia, known as ‘Klang Valley’, found that only 16% of the respondents stated that they are working in a family friendly company and 27% believe that their companies need to improve their family friendly policies. According to ref [7], balancing a successful career with a personal or family life can be challenging and impact on a person’s satisfaction in their work and personal life’s roles. For these problems of work life imbalance, numerous research have been conducted to shed light on the importance of work life balance. The balance between work life and personal life is important because it helps a person to separate the two aspects of life. Work pressure should be left at work. The interference of work in our personal lives create the imbalance. Moreover, the work life balance helps to pay attention where it is needed. If someone is in work, he should pay full attention to his or her work. Similarly, when someone gets home, he or she must devote himself or herself to family household activities. This helps to create more satisfaction, balanced, productive and efficient workers. Proper balance lets a person to lead a healthy life. Stress can cause heart diseases, digestive problems, hypertension etc. And an unhealthy life leads to unhealthy relationships. In Japan, there is a term ‘Karoshi’ which means ‘overwork death’. Making a proper balance in work life and personal life lets a person to make time for himself too for activities, like- doing exercises, having a good diet, a family tour, relaxing etc. So, this has become a matter of concern for all employees as the number of cases regarding degradation of health due to stress in increasing rapidly.

Work-life balance helps to increase employee productivity and thus leads to better organizational performance. It has to do with different parameters-

- Employee participation: Employees who have greater satisfaction and balance in terms of how they work- do more. They always tend to respond in a productive way.
- Greater competence: When an employer helps his employees to balance life, gives motivation, incentives and reward for a job well done- he or she performs quite well and thus promotes greater competence.
- Value of flexibility: When employees are given more flexibility and choices regarding their work, they can feel their importance and tend to be more confidence and thus, do more.

Ref [11] found that work-life balance is associated with the organizational commitment of all employee groups and that there is some evidence that company efforts to help employees achieving a balance between home life and job life is linked to the commitment of all employees of different divisions. But many of the employees fail to notice the importance of work-life balance and so the employees sometimes can’t provide their employers with their fullest. This causes conflict. However, the area of analyzing the ‘work life balance condition’ is kind of under researched in the context of banking sector of Bangladesh.

III. DATA & METHODOLOGY

This study is conducted taking into consideration all kinds of banks operating in Dhaka, Bangladesh and their employees. 20 banks among the banks which are listed in DSE. The secondary data were obtained from other published papers, articles and related webpages for presenting a vivid picture. The study focused on examining the impact of work-life balance on the performance and personal lives of bankers. Among them, some important sources of information were from the empirical studies of renowned publishers who have done research on the association between work-life balance and attitudinal job outcomes such as job satisfaction and organizational commitment [11, 10, 2, 1, 12, 13].

So far 150 bank employees from different public and private banks have been surveyed for our research work and 50 out of 150 responses were chosen by random sampling for the main analysis. This research has been aimed to focus on the in-depth job environment perspective on work-life issues of bankers of Bangladesh irrespective of gender from different viewpoints.
Most of the respondents (25%) are of 25-30 years of age which means they are in the early stage of their career. And also, 54% belong to nuclear families and the rest belong to joint families. A questionnaire with 18 relevant questions was made and distributed for the survey to gauge the working condition and different aspects of work-life balance of the respondents as well as the problems they face in their lives. Additionally, after analyzing the whole situation and considering the limitations of the banking practices and policies of Bangladesh and the limitations faced by the employers, we have come up with some possible solutions and prospective implications of them in our banking sector that may bring positive changes in the overall structure of the work environment and employee wellbeing that can have huge contribution to the growth of the banking sector of Bangladesh. In the following sections, the analysis of the collected information from the survey with recommendations and possible implications are given accordingly.

IV. RESULTS

In our survey, it is observed that 46% respondents don’t really think that they can manage their work life and personal life. 30% percent respondents think that they can manage both and 24% answered “maybe”. It is further observed that 40% respondents work 9-10 hours normally every working day and 26% work 10-11 hours a day normally. 54% of the respondents reported that they have to work for long hours at home and sometimes at office even on holidays. About 30% respondents worry often about their office work even when on holidays and 12% reported they always worry about their work. 28% worry sometimes about their work when at home or on holidays.

Following figure shows how many hours the respondents spend in their domestic activities:

Fig. 1. Hours spend in domestic activities

So, it is observed that about 30% respondents spend only 4-5 hours in their domestic activities and 26% spend around 3-4 hours, which is definitely not sufficient if one has children or elders in his or her home.

In our survey, around 52% respondents say that they miss out family gatherings sometimes and 18% reported that they often miss those. Among the respondents, around 61.2% have elderly people in their home to take care of. Following is a chart showing if the respondents feel tired, stressed or depressed because of work:

Fig 2. Percentage of respondents who feel tired or stressed because of work

From the figure above, it is observed that a big chunk of employees often or sometimes feel tired, depressed or stressed because of their work pressure. Because of this problem, they are more vulnerable to many health hazards. Following is a figure showing how work life affects personal life:

Fig. 3. Extent of the effects of work on personal life

Here, it is observed that working from home affects personal life less than working extra hours at office. Besides this, overtime, official tours, working on holidays also hamper personal life in great manners. From the responses, we reached to the results that:

- Factor 01, we can see that working hours do hamper sometimes in the personal life.
- Factor 02, overtimes have more or less same affect like working hours in people’s life.
- Factor 03, from our 24 female and 26 male respondent maximum respond that work from home does not affect in their personal life. Which means they are more relax when they work from home.
- Factor 04, working in holidays gives us an idea that this is one of the factor where bankers suffer the most to balance both of their family and work.
- Factor 05, official tours are also a matter where our respondents had to consider a lot. 22 of 50 respondents...
do agree that official tours affect a lot in their personal life.

Fig. 4. Percentage of respondents who face problems in personal life for work pressure

Around 42% of the respondents face problems in personal lives sometimes and 38% face these problems often. These problems hamper productivity and mental peace. Employees who are vulnerable to these problems are always agitated and irritated. From the responses, we reached to the result that only 30% employers provide leaves to manage personal life and work life and 24% employers provide flexible work timings. 36% of the respondents reported that their employers take no initiative to manage work life. About 74% of the respondents reported that they do not get proper compensations for working for extra hours. The other 26% get some kind of compensations. Around 46.9% of the respondents believe that overtimes can bring new opportunities in their career whereas 22.4% believe that it will bring no opportunities. The rest (30.6%) are unsure of it. From the study above, it is observed that a big chunk of bankers in Bangladesh are facing problems in balancing work life and personal life. Many of them are prone to mental and health hazards due to excessive work pressure.

V. DISCUSSION & RECOMMENDATIONS

The ability to balance between workplace’s needs and personal life’s need is perceived as an important issue among workers globally and employees of banking industry were not excluded [6, 10]. After doing the survey regarding this aspect, firstly, we can recommend that banking sector should redesign their compensation structure for their employees. For example, day care facilities for the people who have children under the age of five. Secondly, recreations should be added as bankers have monotonous working hours and pressurized desk jobs. Tours for the employees’ family members or motivational performance schemes for the employees or annual or semiannual picnics can be arranged. Thirdly, lucrative performance bonus and Employee Stock Option Plans (ESOPs) must be devised to keep them focused and motivated. Finally, flexible working hours can bring a great change as many people have children and elders to take care of in their homes. In that case, job shifting and job sharing opportunities for the employees can be redesign and restructured.

Managers can take simple steps to improve the working condition of employees. For example, a manager can take initiative if her employees have become exhausted due to immense work pressure by organizing fortnightly or monthly day-out with all employees of the bank. This will make them less stressed and reduce monotony. This practice is already maintained by two renowned multinational banks operating in Bangladesh. The implications of the recommendations mentioned above obviously need an additional budget for their successful implementation. And for the budget amount, it can be managed by maintaining a separate provision by the banks in their book of accounts. The Bangladesh Bank Committee can seek the attention of the government regarding this matter so that the government can pass new legislations. If implemented, the changes can bring growth opportunities for both employees and the banks. The employees will feel motivated to work rigorously and perform well which will ensure greater services and lesser erroneous actions by the banks.

VI. CONCLUSION

Just like any other sector, the work-life balance for the employees working in the banking sector is very much important for our economy as well as the employee’s personal life. The rising conflict due to new technologies like internet, mobile and laptop, negative attitude of peers and colleagues, negative attitude of family members, frequently travelling away from home can hamper personal life to a great extent. To overcome this problem, the employers of the banking industry in Bangladesh should come up with proper initiatives as well as incentives.

REFERENCES


The Acceptability of Solar Electricity among the Rural Communities in Bangladesh: An Exploratory Study

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Abstract – This empirical study was undertaken to ascertain the factors that influence rural consumers’ acceptability of solar electricity. From two villages located in Noakhali district, one-hundred and forty one rural consumers were surveyed with self-administrated questionnaires, followed by in-depth interviews. At the outset, a total of nineteen manifest variables, mainly adopted from prior literature, were encoded in SPSS for deriving factors through EFA technique. Findings of the study confirmed that rural consumers prefer to adopt solar electricity to improve their living condition and reduce in-house air pollution caused by burning kerosene for lighting purpose. Additionally, users avail income generating opportunities to enhance their economic situation. This study can further be extended by exploring the relationship between the identified factors and intention to accept the solar energy services in a CFA simulator. The essence of the research may contribute to the prevailing literature related to renewable energy technology adoption in rural communities.

Keywords – Rural Consumers, Solar energy, Rural Electrification, intention to use, Acceptability.

I. INTRODUCTION

Electricity is indispensable for the development modern civilization. Yet, at present, 1.317 billion people across the globe do not get access to electricity and majority of them live in the rural areas of Asia and Africa [1]. Bangladesh is no exception from this situation where even with the continued economic progress (more than 6 percent growth in GDP), the national electrification status for the households is 75 percent but much lower at the rural areas, only 60 percent [2]. Since grid extension requires a higher amount of capital investments, off-grid electrification by renewable energy technology (RET) e.g. solar energy offers an alternative solution for many low-demand users in the non-electrified and remote regions of the country [3], [4].

Bangladesh receives an average daily solar radiation of 4–6.5 kW h m⁻² and it has been found that 94% of the land area in Bangladesh has such radiation which is sufficient for appropriate utilization based on available technology [5], [6]. Realizing the potential of solar energy to improve rural electrification, various Government and Non-Government organizations (NGOs) distribute Solar Home Systems (SHS) to the rural communities where the lower income population is deprived of basic energy services [7]. With this backdrop, this study explores the adoption behavior of solar electricity among the villagers in Hatiya, located in the southern-east coastal district, Noakhali.

This paper sets forth to provide the literature review in section II, followed by methodology of research presented in section III. The data analysis has been illustrated in section IV. Finally, section V presents the discussions on the research findings and section VI summarizes the study along with future research directions.

II. LITERATURE REVIEW

SHS offers a cost-effective mode of supplying electric power for lighting and appliances to remote off-grid households [8]. At present, various types of solar electric systems are available around the world, all of those consist of basically three main items: panels that turn sunlight into electricity; inverters which transform that electricity into alternating current to make it usable for general household appliances (as demonstrated in figure 1) and batteries that store surplus electricity generated from the system [22]. The deployment and usage of SHS in rural communities is receiving attention among the researchers and policy makers by yielding socio-economic benefits, including enhancements in quality of life, developing income and employment opportunities [9],[10],[11],[12],[13],[14],[15].

Fig. 1: Electricity Generation through SHS

The SHS program in Bangladesh is implemented by the Infrastructure Development Company Limited (IDCOL) formed by the Government of Bangladesh in 1997 [7]. IDCOL operates the SHS program with 56 Partner Organizations (PO). The POs utilize their widespread branch and networks to have greater access and acceptability in the rural and remote regions in order to make SHS affordable and acceptable to the target market [5],[13].
Till February, 2018, more than 4.13 million SHS have been installed across the country, electrifying 18 million beneficiaries, i.e. around 12% of the country’s population [7]. Considering the potential of RET in improving rural electrification, Solacool & Drupady [16] and Komatsu et al. [12] studied the implications of SHS usage to upgrade the living standard of rural communities. The economic feasibility and financial viability of solar electricity were studied by Pode, R. [17] & Kabir et al., [18]. The environmental impact and eco-efficiency were evaluated by Hasanuzzaman et al., [19] and Najmul S.M. et al., [20]. Thus, there are an emerging volume of research studies on the progress and prospect of solar electrification for the rural population in Bangladesh. Hitherto, not many studies have been conducted to analyze the factors influencing the adoption of RET from the users’ perspective [21], [12]. This research makes an attempt to shed light on these issues by examining the various factors affecting rural consumers’ behavioral intention to use solar electricity.

III. RESEARCH METHODOLOGY

A total of one-hundred and forty one respondents were surveyed with a semi-structured questionnaire in the villages of Charking and Char Ishwer, located in Hatiya Upzila of Noakhali district during the months of September 2017 to January 2018, followed by a couple in-depth interviews and filed observations. Hatiya is an island situated on the southern east coast of Bangladesh that is not yet connected to the national grid due to remoteness and unfavorable geographic settings. For the power and energy needs, the inhabitants in Hatiya have to depend on alternative solutions like fuel run generators and renewable energy technologies like SHS.

All the participants in the survey were provided with a short description about the background of the study before participating in the survey [23],[24]. In some cases, copies of questionnaires were distributed among respondents with the help of a trained research assistant in the study area. The survey questionnaire comprised of two parts. Part one of the questionnaire included seventeen basic questions yielding demographic information while part two comprised of twenty categorical questions ranging from (1) Strongly disagree to (7) Strongly agree, anchored with the manifest variables adopted from prevailing literature related to RET adoption. All items which were originally written in English, were translated into the Bengali language. Collected data were coded into SPSS for Exploratory Factor Analysis.

IV. ANALYSIS

A. Demographic characteristics of the respondents:

Demographics data of the study reveal quite intriguing picture about the respondents of this study who were primarily rural villagers, over 61% of them were male and the rest (39%) were female. Majority (53%) of the respondents were aged between 25-35 years old whereas 19% of the respondents were aged between 36-45 years old. Majority of the respondents (33%) passed secondary level of education. 32% of the respondents completed up to primary level education. Around 44% respondents have monthly household income below 10,000 taka and 35% have income from 10,000 taka to 15,000 taka. 28.65% respondents have installed SHS with the capacity of 20 watt to 40 watt and 26.32% households have the installed system capacity in between 60 watt to 80 watt. Again, 35.5% of the respondents have been using SHS for three to four years and 23.4% of the respondents are using the system for the duration of two to three years.

B. EFA Result:

As shown in table 1, the calculated value of KMO Measure of Sampling Adequacy is 0.838 which exceeds the standard cut point of 0.50. Similarly, the Bartlett’s Test of Sphericity is significant at 0.000(P<0.001). It proves that the dataset is suitable for conducting factor analysis.

| TABLE 1                                                                 |
|-------------------------|-------|----------------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | .838  |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1206.326 |
|                          | DF    | .000          |
|                          | Sig.  | .000          |

Source: Estimated result

From the above table 2, it can be summarized that all calculated values are above 0.50 which is the standard cut point. The calculated values of the variables namely, social security and customer training found lower than the initial cut point, therefore, eliminated from the dataset. Furthermore, 80% of the variance is explained by the variable namely, “Affordability”. In addition, 77% variance by “Income generation”, 75% of the variance in “self-maintenance” and “Easy to use” is accounted for.

Figure 2 exhibits a graphical representation of all calculated eigenvalues against all factors. From the graph presented above, it is observed that there are three major turns; hence three components can be retained. In order
to determine the exact number of components and to provide more accurate evidence, we, therefore, calculated Parallel Analysis (Monte Carlo) and compared the original eigenvalues with the eigenvalues generated by the Monte Carlo simulator. Finally, three components were extracted and retained.

As shown in table 3, it can be stated that the three retained components explained over 54% of the variance while the remaining sixteen components explained nearly 66% of the variance in total. So, it is quite rational to retain two components for this study.

Table 4: Rotated Component Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>Economic Value</th>
<th>Perceived Benefit</th>
<th>Social Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordable pricing</td>
<td>.873</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income generation activity</td>
<td>-.844</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to use</td>
<td>.828</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer service</td>
<td>.784</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of SHS parts</td>
<td>.775</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of components</td>
<td>.753</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced in-house air pollution</td>
<td>.683</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to information</td>
<td>-.668</td>
<td>-.410</td>
<td></td>
</tr>
<tr>
<td>Awareness about SHS</td>
<td>.525</td>
<td>.416</td>
<td></td>
</tr>
<tr>
<td>Social security at night</td>
<td>-.417</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-maintenance of the SHS</td>
<td>-.738</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved economic situation</td>
<td>.729</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saving kerosene expenditure</td>
<td>.507</td>
<td>.498</td>
<td></td>
</tr>
<tr>
<td>Comfort in HH chores</td>
<td>.504</td>
<td>.460</td>
<td></td>
</tr>
<tr>
<td>Using solar is a good idea</td>
<td>.494</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training on SHS usage</td>
<td>-.431</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude of others</td>
<td>.813</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommend others about SHS</td>
<td>.572</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancement in education</td>
<td>.552</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the above table 4, it can be summarized that the total nineteen manifest variables are classified and distributed under three retained factors and finally renamed as Economic Value (EV), Perceived Benefit (PB) and Social Status (SS). Economic Value Perceived can be explained by ten observed variables, Perceived Benefit can be addressed by eight variables, while social status can be explained by five observed variables.

V. DISCUSSION

From the context of the study, Economic Value (EV) is regarded as those implications of SHS usage that contributes in providing economic gain for the rural population. On the other hand, the attitude and perception of the users about solar electricity is indicated by Perceived Benefit (PB). Again, social acceptance (SA) can be viewed as the community influence and social interactions of the SHS users in the particular region. Evidence found that, EV, PB and SA are playing essential role in describing the adopting behavior of renewable energy services among the rural villagers in Bangladesh. Additionally, it is not apparent to claim that the variables, such as EV, PB and SA are correlated or intention to use solar electricity services is influenced by EV, PB or SA in Bangladesh, unless more researches are conducted in the domain of the study.
VI. CONCLUSIONS, AND FUTURE RESEARCH DIRECTIONS

This study attempted to identify factors that affect rural consumers’ perception to use solar electricity services in Bangladesh. This study was initiated in two local villages in Noakhali district. The research employed various research instruments such as questionnaire, field visits, and in-depth interviews. Study examined nineteen manifest variables, primarily derived from prior literature. Besides, total nineteen manifest variables were encoded in SPSS for multivariate analyses. Finally, three factors were extracted and retained in line with the standard indicators and renamed as EV (Economic Value) and PB (Perceived Benefit) and SA (Social Acceptance).

Findings of the study can provide strategic insights for the renewable energy companies and solar energy ventures for developing informatics tools and policies targeting rural consumers. The essence of the research may also contribute to the existing literature as to renewable technology adoption.

This study can further be extended by the following ways; (i) more manifest variables should be incorporated in order to explore more meaningful factors; (ii) the relationship among EV, PB and SA should be explored by applying Pearson Correlations; (iii) the effect of EV, PB on SA can be measured by applying OLS (ordinary least squares) method. Additionally, the study also be advanced to compare the application of RET to avail electricity services in the grid connected and off-grid regions. This can further unveil the users’ adoption behavior of SHS considering the presence or absence of conventional source of electricity.

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Analysis of Growth and Forecasting the Gross Domestic Product (GDP) of Bangladesh

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Abstract – Gross domestic product (GDP) is an important indicator to measure the economic growth and prosperity of a country in every year. Yearly grow rates for both types of GDP follow almost same pattern from the fiscal year FY2006 to FY2017. By using geometric method, it is found that the overall grow rate of GDP was 13.68% and 6.33% at current market price and constant price respectively over the last 12 years. By comparing root-mean-squared errors (RMSE) for the three methods, it is found that geometric method having the least RMSE than the others. Thus it can be concluded that that geometric growth rate is superior than the geometric growth rate and the least-squares regression (log linear) grow rate as it has least RMSE. Thus, it is suggested to use the geometric growth rate to the yearly forecast the GDP to get more accurate result.

Keywords – GDP, current price, constant price, growth rates, prediction

I. INTRODUCTION
Bangladesh has the potential to become the world’s 23rd largest economy by 2050, overtaking countries such as Netherlands, Australia, Spain, Thailand and Malaysia (PricewaterhouseCoopers-PwC, 2017). According to the International Monetary Fund (IMF), Bangladesh’s nominal GDP, as of 2018, stands at $ 286 billion. From 2000, the economy has been growing at 6 percent on average every year and that growth has lifted millions out of poverty [1]. Bangladesh economy grew by 7.1 percent FY2016, a decade high, and higher than the average in peer Asian economies, making Bangladesh the 3rd best growth performer in Asia [1]. The annual average growth rate of GDP Bangladesh at current prices was 8.9% during the fiscal year FY1991 (1990-91) to FY2004 (2003-4) by geometrical formula [7]. According to (Islam, 2006) the real annual average growth rate of GDP (base 1995-96) was somewhat below (5.1%) for the last 14 years (FY1991 to FY2004) also by geometrical formula [6]. In this paper, the GDP of Bangladesh at the current market price and constant price will be analyzed from different perspectives and the growth rates of the different sectors observed over the last 11 years that will be compared. Therefore using the different growth models year to year prediction of GDP will be calculated at the current market price and constant price as well. Finally, by calculating the root-mean-squared errors (RMSE) for both predicted GDPs by different models, the best model will be suggested make prediction as well as forecasting for short term periods.

II. METHODOLOGY:
There are many methods to calculate the grow rate as well forecasting the time series data. Mainly four methods will be used for doing the grow rates and predictions.

Arithmetic growth rates:
In order to compute the grow rate of one year (Current year compare to the immediate previous year), the arithmetic method will be used due to the simplistic assumptions [12]. The percent change of grow rate from one year to another year is calculated from the formula:

\[ r_t = \frac{(Y_t - Y_{t-1})}{Y_{t-1}} \times 100 \]

Where:
- \( r_t \) = the grow rate in year \( t \)
- \( Y_t \) = the value in year \( t \)
- \( Y_{t-1} \) = the value in the previous year

Models to calculate overall growth rates and forecast
Three methods namely, geometric, exponential; and the regression (log linear) models will be considered for the overall growth rates and making predictions. The reasons are explained in the following literature reviews.

For all international trade time series, the geometric growth rates are used [15]. Geometric growth rates are used for all indicators in all statistical publications and the online statistical database [14]. Geometric growth rate is widely used for indicators on economic phenomena, such as GDP or trade [8], [11], [12] and [15].

Exponential growth rate method represents the limiting case of compounding; that is the compounding takes place continuously (the variable grows at a constant rate at every infinitesimal of time) [14]. This exponential model can be used to predict population during a period when the growth of a population is continuous [12] and [15]. The regression method takes into consideration all of the data points in the series; thus, it is the least likely of all the methods to suffer from any biases due to a randomly high or low beginning or ending year. The least-squares growth rate can be used for any type of indicator, as it does not assume that there is a pattern in the way that
growth has occurred over the year or years [2], [8], [9], [11], [12] and [15].

The following methods have been used to predict both the GDPs and finding the growth rates:

i) The geometric model:

\[ Y_n = Y_0 (1 + r)^n \]  

(1)

ii) The exponential model:

\[ Y_n = Y_0 e^{nr} \]  

(2)

iii) Regression (log-linear) model:

\[ Y_n = Y_0 (1 + r)^n \]  

(3)

Where:

\( r \) = the growth rate over the year \( n \)

\( Y_n \) = the value at end year \( n \)

\( Y_0 \) = the beginning year value

\( n \) = the number of periods between the beginning period and the end period (that is \( n-0=n \))

It has to be mentioned that for the prediction of GDP at first the growth rates \( r \) are calculated for the different modes at the same period of time.

Thus, the geometric growth rate \( r \) is calculated as

\[ r = \left( \frac{Y_n}{Y_0} \right)^{1/n} - 1 \]

Thus, the exponential growth rate \( r \) is calculated as:

\[ r = \ln \left( \frac{Y_n}{Y_0} \right) / n \]

And, the least squares Regression (log-linear) growth rate is

\[ r = \exp(\hat{\beta}) - 1 \]

It is mentioned that \( \hat{\beta} \) is an estimate of the slope coefficient of the regression (log-linear) model (3) by using the Ordinary Least Squares (OLS) method.

III. RESULT

GDP of Bangladesh will be analyzed at Current Market Price and Constant Price from FY2006 to 2017, which are shown in the following figure 1.

![GDP at Current Market Price and Constant Price from FY2006 to 2017](image)

**Fig. 1:** GDP at Current Market Price and Constant Price from FY2006 to 2017

It is observed that the GDP of Bangladesh has significantly enlarged over the last 12 years both in terms of current market price and constant price. GDP has increased to more than 4 times and almost 2 times in the FY2017 as compare to FY2006 at current market price and constant price respectively. This is definitely a tremendous achievement for the economy of Bangladesh.

**Growth rates:**

To get knowledge about the real picture about the economy of Bangladesh, it is necessary to examine the growth rates. Year to year (one year) growth rates of GDP at current market price and constant price are depicted in the figure 2.
It is clearly visible that the GDP of Bangladesh has been growing consistently and constantly since FY2006. GDP at current market price has maintained the growth rates of 12% or above; whereas it was 5% or above for the constant price, which is very significant for the economic prosperous of Bangladesh.

Growth rates and Forecasting the GDP of Bangladesh
As Bangladesh is a developing country, there is lack of resources. Thus it is very important to develop proper planning for the economic development of the country with these few resources which is based on the accurate prediction of the future economic trend of the GDP. Therefore we should make prediction the basic economic Bangladesh by means of statistical methods (Islam, 2006).

The growth rates of GDP is also obtained by using the methods of geometric growth rate; exponential growth rate and least-squared regression (log linear) growth rates over the fiscal years FY2006 to FY2017 is shown in table 1.

<table>
<thead>
<tr>
<th>Models</th>
<th>At current price (%)</th>
<th>At constant price (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression model</td>
<td>13.65</td>
<td>6.21</td>
</tr>
<tr>
<td>Geometric model</td>
<td>13.68</td>
<td>6.33</td>
</tr>
<tr>
<td>Exponential model</td>
<td>12.82</td>
<td>6.14</td>
</tr>
</tbody>
</table>

By using the above three methods, it is found that on an average, the GDP of Bangladesh has grown at the rate of over 12% and 6% at current market price and constant price respectively over the last 12 years. Thus it can be guessed that the economy of Bangladesh has gained a solid foundation from FY2006 to 2017. There is insignificant different among the growth rates of GDP at current price as well as at constant price which are calculated by different method. By using these growth rates the prediction will be done for the GDP over the FY2006 to FY2017. And then by using root-mean-squared errors (RMSE), it will be found out which method will more accurately predict the GDP. The root-mean-squared errors (RMSE) for the least-squared regression (log linear), geometric; and exponential growth rate modes of the GDP of Bangladesh at current price and at constant price during the fiscal years 2006 to 2017 are depicted in the following figure 3:

**Figure 3:** Root-mean-squared errors (RMSE) for the least-squared regression (log linear), geometric; and exponential growth rates of GDP over the FY2006 to FY2017.

It is clearly visible (figure 2) that the root-mean-squared errors (RMSE) of the geometric growth rate model is much lower than the least-squared regression (log linear); and exponential growth rate models both for the GDP at current price as well as at constant price. The regression model has the second lowest RMSE for the both price levels, which is much closer to the Root-mean-squared error (RMSE) of geometric model than the regression model. So it can be said that the geometric growth rate model more accurately forecasted the yearly GDP of Bangladesh than the other modes.
IV. CONCLUSION
By comparing root-mean-squared errors (RMSE) for the three methods, it is found that geometric method having the least RMSE than the others. Thus it can be concluded that that geometric growth rate is more consistent than the geometric growth rate and the least-squared regression (log linear) grow rate as it has least RMSE. Thus, it is suggested to use the geometric growth rate to the yearly forecast the GDP to get more accurate result.

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Optimal Inventory Control in Manufacturing Systems with Deterioration Items and Time-variant Demand under Both Periodic and Continuous Review Policy

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Abstract – A manufacturing or remanufacturing inventory system is essential in the production planning in order to satisfy the exogenous demands with the lowest cost. This study is concerned with the model of a manufacturing inventory system with deteriorating items under both periodic and continuous review policies. The time of deterioration is assumed to be a random variable that followed a gamma probability distribution. The optimal inventory control model is developed here and the optimal manufacturing rates are obtained achieving the inventory goal levels with time-varying demand. The optimality conditions and the explicit solutions of the inventory model are derived using Pontryagin Maximum Principle in the context of both periodic and continuous review policies. The model is found to be efficient in controlling the inventory levels, as desired through the manufacturing rates to hedge demand at the lowest cost. From the sensitivity analysis, it is found that the parameter values of gamma distribution affects the manufacturing rates ensuring the inventory levels are under control. This study considers the inventory control model with single item and constant inventory goal level; in future work, two or multi-items and inventory goal level that depend on price or demand could be taken into account.

Keywords – Optimal control, Manufacturing inventory system, Deterioration items, Time-varying demand functions, Periodic review policy, Continuous review policy.

I. INTRODUCTION

Manufacturing inventory systems play a vital role in the production enterprise for many reasons, mainly to satisfy demands in fluctuating market conditions and gain competitive advantage. The inventory system, which includes the production, distribution and storage of goods, is very important for all organizations due to the additional costs that incur as a result of manufacturing, replenishment, shortage and management decisions. Therefore, developing mathematical models of an inventory system which take into account the aforementioned costs is very important to satisfy demand with the lowest cost [15]. The optimal control model is one of such models, widely used for finding the manufacturing rate and inventory level as close to administrative goals as possible. There are two policies in inventory review: continuous and periodic. The former involves checking the level of inventory at all times and the latter deals with inventory checking at time intervals.

Many past studies have dealt with deterioration items due to it being considered as one of the important factor in the operation of decision making in the inventory system. The description of the optimal ordering policies for deterioration items did initially by [5]. Some researchers have dealt with a deterioration rate as a part of the time. [14] and [1] have developed the model of inventory system with two cases with and without shortage and demand rate depending on the price and constant respectively. Also, [7] developed the model for the products with demand that rises quickly to peak in the middle and falls quickly at the end of planning time (quadratic demand rate) without shortage. In contrast, many researchers have studied deteriorating inventory models with the assumptions that the deterioration rate follows the Weibull distribution ([4], [3], [6], [9], [16]); with constant rate of deterioration ([13], [8]); with linear or quadratic function describing the rate of deterioration ([10], [11]) and the effect of demand rates on the manufacturing rates has been discussed. However, these studies have not dealt with a manufacturing inventory system involving deteriorating items as random variables that followed by Gamma probability distribution under both continuous and periodic review policies.

The contribution of this study is to develop an optimal inventory control model with deterioration items follow Gamma distribution under both periodic and continuous review policies. It is also an interest to derive the optimality conditions and the explicit solutions of the model using the Pontryagin maximum principle as well as to provide the effect of the Gamma distributions’ parameter values with time-varying demand functions involved in the model using sensitivity analysis.

This paper is organized as follows. In the second section, we give a description of the manufacturing inventory system with deteriorating items under both periodic and continuous review policies of this study. In the section 3, we introduce the notations and the assumptions involved of the optimal inventory control model. In the section 4, we estimate the rate functions of Gamma distribution. In the section 5, we derive the theoretical solutions along with the optimality conditions for the model. In the section 6, we illustrate the numerical simulation result of this manufacturing inventory model with time-varying demand.
demand and we show the effect of the Gamma distribution parameter value for the total manufacturing rates. In the last section, we summarize our findings and given suggestions for the future research.

II. MANUFACTURING INVENTORY SYSTEM WITH DETERIORATING ITEMS

This section describes how the optimal control model is developed for the manufacturing inventory system with deteriorating items in the case of both periodic and continuous review policies, abbreviated as schematic diagram of the inventory system is displayed in Figure 1.

![Figure 1. Inventory system of the model](image)

As depicted in Figure 1, the model is the simplest representation of an inventory system comprising manufacturing facility that manufactures the products which are kept in store for shipment to customer. At any time $t$, the inventory $X(t)$, at the store is affected by the manufacturing rate $U(t)$, as well as the deterioration rate of the products $\theta(t)$. In order to meet the customer demand $D(t)$, administrative goals for manufacturing rate and inventory level are set accordingly. According to the periodic review, the time period $T$ is divided into equal subintervals $W$. This means the inventory review is conducted at specific time points (periodic), rather than every time (continuous). It is to be noted that the inventory level is measured at the beginning of the period, while the manufacturing rate is measured throughout the period.

III. NOTATIONS AND ASSUMPTIONS INVOLVED IN THE MODEL

This section is devoted introducing the notations and the assumptions involved of the optimal control model.

3.1. NOTATIONS

The following notations are used to describe the dynamics of the system in a fixed length of the planning horizon:

- $T$: Length of the planning horizon (for continuous case)
- $X(t)$: Inventory level at time $t$ (state variable)
- $U(t)$: Manufacturing rate at time $t$ (control variable)
- $D(t)$: Demand rate at time $t$
- $\theta(t)$: Deterioration coefficient as a function of time, a random variable that follows the standard gamma distribution
- $\hat{x}$: Inventory goal level
- $\hat{u}(t)$: Manufacturing goal rate
- $X(0)$: Initial inventory level
- $h$: Penalty incurred for the inventory level to deviate from its goal level ($h > 0$)
- $k$: Penalty incurred for the manufacturing rate to deviate from its goal rate ($k > 0$)
- $\rho$: Constant non-negative discount rate.

3.2 ASSUMPTIONS

The following assumptions have been taken account:

i. A firm can produce a certain product, sell some, and stack the rest in a warehouse.
ii. The demand rate varies with time.
iii. The firm has set an inventory goal level and a manufacturing goal rate.
iv. No shortage and items are subjected to standard gamma distributed deterioration.

IV. ESTIMATION OF THE RATE FUNCTIONS

4.1. THE DETERIORATION RATE FOLLOWS GAMMA DISTRIBUTION

The rate of deterioration is a random variable followed a standard Gamma distribution. The probability density function is:

$$f(t; \alpha) = \frac{1}{\Gamma(\alpha)} t^{\alpha-1} \exp(-t) \quad ; \quad t \geq 0 ; \quad \alpha > 0$$

The cumulative distribution function is:

$$F(x; \alpha) = \int_0^x f(x; \alpha) \, dx = \frac{\gamma(\alpha, t)}{\Gamma(\alpha)} \quad ; \quad t \geq 0 ; \quad \alpha > 0$$

where $\gamma(\alpha, t)$ is the lower incomplete Gamma function. The instantaneous rate of deterioration of the standard Gamma distribution represented by Hazard function:

$$\theta(t) = \frac{f(t)}{1 - F(t)} = \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t)$$

The curve of Hazard function is increased with $\alpha > 1$ as we see in Figure 2 and deterioration in practice is increasing with time.
V. OPTIMAL INVENTORY CONTROL MODEL WITH CONTINUOUS AND PERIODIC REVIEW POLICIES

The objective function can be expressed as the quadratic form of minimization \([17]\):

\[
J(U, X, \hat{u}) = \frac{1}{2} \int_0^T e^{-\rho t} \left[ h(X(t) - \hat{x})^2 + k(U(t) - \hat{u}(t))^2 \right] dt. \tag{1a}
\]

\[
J(U, X, \hat{u}) = \frac{1}{2} \sum_{t=0}^{W-1} e^{-\rho t} \left[ h(X(t) - \hat{x})^2 + k(U(t) - \hat{u}(t))^2 \right]. \tag{1b}
\]

The interpretation of the objective function is that we want the inventory \(X(t)\) to achieve its goal, \(\hat{x}\) while keeping the manufacturing rate, \(U(t)\), as close as possible to its goal \(\hat{u}(t)\). In cases of manufacturing and inventory rates being far from their corresponding goal levels, penalties are imposed as representation in the quadratic terms \(k(U(t) - \hat{u}(t))^2\) and \(h(X(t) - \hat{x})^2\). In other words, we should minimize the sum of the mean square deviations of inventory and manufacturing from their respective goals \([12]\).

The objective function in equation (1a) and (1b) are subject to the dynamics of the inventory level in equation (2a) and (2b), which reveals that the inventory at the time of increases with the manufacturing rate \(U(t)\), and decreases with the demand rate \(D(t)\) and the rate of deterioration \(\frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t)\):

\[
dX(t) = \left( U(t) - D(t) - \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right) X(t) dt, \tag{2a}
\]

\[
\Delta X(t) = U(t) - D(t) - \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) X(t); \tag{2b}
\]

where \(\Delta X(t) = X(t+1) - X(t)\) is called the difference operator, and positive constraint:

\[
U(t) > 0, \quad X(t) \geq 0; \quad \text{for all } t \in [0, T]. \tag{3a}
\]

\[
t = 0, 1, ..., W - 1,
\]

with initial condition \(X(0) = x^0\). \tag{3b}

5.1. THEORETICAL SOLUTION OF THE OPTIMAL CONTROL MODEL UNDER CONTINUOUS REVIEW POLICY

By virtue of equation (2a), the instantaneous state of the inventory level \(X(t)\) at any time \(t\), is governed by the differential equation:

\[
\frac{dX(t)}{dt} + \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} X(t) = U(t) - D(t); \quad 0 \leq t \leq T; \tag{4a}
\]

\[
X(0) = x^0.
\]

The inventory goal level and manufacturing goal rate must satisfy equation (4a); thus, the manufacturing goal rate is expressed as:

\[
\hat{u}(t) = D(t) + \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} \hat{x}. \tag{5a}
\]

Equation (5a) represents the manufacturing goal rate which is equal to the demand and deterioration of items. By differentiating equation (5a), we get:

\[
\frac{d}{dt} \hat{u}(t) = \frac{d}{dt} D(t) + \left[ e^{-2t} t^\alpha \left( t^\alpha - e^{-(\alpha + t + 1)} \Gamma(\alpha, t) \right) \right] \hat{x}. \tag{6a}
\]

On the basis of \([17]\), the optimal control approach consists of determining the optimal control \(\hat{u}(t)\), that minimizes the objective function in equation (4a), subject to the state equation (4b). Using Pontryagin Maximum Principle, there is an adjoint function \(\lambda(t)\), such that the Hamiltonian functional form is given by:

\[
H(t, X(t), U(t), \lambda(t)) = -\frac{1}{2} e^{-\rho t} \left[ h(X(t) - \hat{x})^2 + k(U(t) - \hat{u}(t))^2 \right] + \lambda(t) \left\{ U(t) - D(t) - \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} X(t). \tag{7a}
\]

which satisfies the control equation:

\[
\frac{\partial}{\partial U(t)} H(t, X(t), U(t), \lambda(t)) = 0. \tag{8a}
\]

The negative sign in the Hamiltonian function due to the objective function is the minimization of \(J\), making it equivalent to the maximization of \(-J\).

From equation (8a), we get:

\[
U(t) = \hat{u} + \frac{\lambda(t) e^{\rho t}}{k}. \tag{9a}
\]

By differentiating equation (7a) with respect to \(X(t)\), we get the adjoint equation:

\[
\frac{d}{dt} \lambda(t) = -\frac{d}{dt} \lambda(t) ; \tag{10a}
\]

Then,
\[ \frac{d}{dt} \lambda(t) = \lambda(t) \frac{1}{\Gamma(\alpha, t)} t^{\alpha - 1} \exp(-t) + he^{-\rho t}(X(t) - \hat{x}). \] \quad (11a) 

The state equation is given by:

\[ \frac{\partial}{\partial \lambda(t)} H(t, X(t), U(t), \hat{u}(t), \lambda(t)) = \frac{d}{dt} X(t); \quad X(0) = x^0. \] \quad (12a) 

Equation (12a) is similar to equation (4a). Substituting equation (9a) into the state equation (12a) yields:

\[ \frac{d}{dt} x(t) = \hat{u}(t) + \lambda(t) e^{-\rho t} \kappa - D(t) - \frac{1}{\Gamma(\alpha, t)} t^{\alpha - 1} \exp(-t) X(t). \] \quad (13a) 

From equation (13a), we have:

\[ \lambda(t) e^{-\rho t} \kappa = \frac{d}{dt} x(t) - \hat{u}(t) + D(t) \frac{1}{\Gamma(\alpha, t)} t^{\alpha - 1} \exp(-t) X(t). \] \quad (14a) 

Now, the incomplete gamma function can be derived as:

\[ \frac{\partial}{\partial \lambda(t)} \Gamma(\alpha, t) = -t^{\alpha - 1} e^{-t}. \] 

By differentiating equation (13a), we obtain:

\[ \frac{d^2}{dt^2} x(t) = \frac{d}{dt} \frac{\partial}{\partial \lambda(t)} \Gamma(\alpha, t) \frac{1}{\Gamma(\alpha, t)} \frac{d}{dt} \Gamma(\alpha, t) \frac{1}{\Gamma(\alpha, t)^2} t^{\alpha - 2} \exp(-t) \frac{d}{dt} \Gamma(\alpha, t) \frac{1}{\Gamma(\alpha, t)^2} + \frac{d}{dt} \frac{\partial}{\partial \lambda(t)} \Gamma(\alpha, t) \frac{1}{\Gamma(\alpha, t)^2} t^{\alpha - 2} \exp(-t) \frac{d}{dt} \Gamma(\alpha, t) \frac{1}{\Gamma(\alpha, t)^2} x(t) - \hat{x}. \] \quad (15a) 

Substituting equation (11a), (14a), (6a) into equation (15a) yields:

\[ \frac{d^2}{dt^2} x(t) = -\frac{e^{-\rho t} \kappa}{\Gamma(\alpha, t)^2} t^{\alpha - 2} \exp(-t) + \frac{1}{\Gamma(\alpha, t)^2} \rho(X(t) - \hat{x}) \frac{d}{dt} \frac{\partial}{\partial \lambda(t)} \Gamma(\alpha, t) \frac{1}{\Gamma(\alpha, t)^2} t^{\alpha - 2} \exp(-t) \frac{d}{dt} \Gamma(\alpha, t) \frac{1}{\Gamma(\alpha, t)^2} x(t) - \hat{x} \] 

The system solution includes equations (11a) and (16a), which will be used to describe the time evolution of inventory levels. The closed-form solution is not possible, so this boundary value problem can be solved numerically together with the initial condition, \( X(0) = x^0 \), and the terminal condition, \( \lambda(T) = 0 \), following [2].

5.2 THEORETICAL SOLUTION OF THE OPTIMAL CONTROL MODEL UNDER PERIODIC REVIEW POLICY

The inventory goal level and manufacturing goal rate must satisfy the state equation (2b); thus, the manufacturing goal rate is:

\[ \hat{u}(t) = D(t) + \frac{1}{\Gamma(\alpha, t)} t^{\alpha - 1} \exp(-t) \hat{x}. \] \quad (4b) 

Using Pontryagin maximum principle, there is an adjoint function \( \lambda(t) \), such that the Hamiltonian functional form is given by:

\[ L = \sum_{t=0}^{W-1} -\frac{1}{2} e^{-\rho t} h[X(t) - \hat{x}]^2 + k[U(t) - \hat{u}(t)]^2 \] 

The Lagrangian function is:

\[ H(t) = -\frac{1}{2} e^{-\rho t} h[X(t) - \hat{x}]^2 + k[U(t) - \hat{u}(t)]^2 \] 

\[ + \lambda(t+1) \frac{1}{\Gamma(\alpha, t)} t^{\alpha - 1} \exp(-t) X(t) \] 

\[ \frac{d}{dt} \frac{\partial}{\partial \lambda(t)} H(t, X(t), U(t), \hat{u}(t), \lambda(t)) = \frac{d}{dt} X(t); \quad X(0) = x^0. \] \quad (7b) 

The Hamiltonian function is defined as:

\[ H(t) = -\frac{1}{2} e^{-\rho t} h[X(t) - \hat{x}]^2 + k[U(t) - \hat{u}(t)]^2 \] 

\[ + \lambda(t+1) \frac{1}{\Gamma(\alpha, t)} t^{\alpha - 1} \exp(-t) X(t). \] \quad (6b) 

By using equation (6b), we can rewrite equation (5b) as follows:

\[ L = \sum_{t=0}^{W-1} [H(t) - \lambda(t+1)(X(t+1) - X(t))] \] 

\[ + \sum_{t=0}^{W-1} M(t) U(t), \] \quad (8b) 

where \( M(t) \) is called the Lagrange multiplier. This multiplier satisfies the complementary slackness conditions:

\[ M(t) \geq 0; \quad M(t) U(t) = 0. \] \quad (9b) 

Now, differentiating the equation (7b) with respect to \( X(t) \) for \( t = 0, \ldots, W - 1 \) will result in:

\[ \frac{\partial}{\partial X(t)} L = \frac{\partial}{\partial X(t)} \frac{\partial}{\partial \lambda(t)} H(t) \frac{\partial}{\partial \lambda(t)} H(t) - \lambda(t+1) = 0, \] 

\[ \Delta \lambda(t) = \lambda(t+1) - \lambda(t) = -\frac{\partial}{\partial X(t)} \frac{\partial}{\partial \lambda(t)} H(t). \] \quad (10b) 

To get the terminal boundary conditions, equation (7b) is differentiated with respect to \( X(W) \), yielding:

\[ \frac{\partial}{\partial X(W)} L = -\lambda(W) = 0 \rightarrow \lambda(W) = 0. \] \quad (11b) 

To get the manufacturing rate, equation (7b) is differentiated with respect to \( U(t) \), yielding:

\[ \frac{\partial}{\partial U(t)} L = \frac{\partial}{\partial U(t)} H(t) = 0; \] 

\[ -e^{-\rho t} k[U(t) - \hat{u}(t)] + \lambda(t+1) = 0; \] 

\[ U(t) = \hat{u}(t) + \frac{1}{k} e^{\rho t} \lambda(t+1). \] \quad (12b) 

Substituting equations (4b) and (12b) into equation (2b) yields:
\[
\Delta X(t) = -\left\{ \frac{1}{(\gamma \alpha, t)^{\alpha - 1}} \exp(-t) \right\} \{X(t) - \bar{x}\} + \frac{1}{k} e^\rho t \lambda(t + 1). \tag{13b}
\]

From equations (10b) and (13b), the following system of difference equations is obtained:

\[
\Delta X(t) = -\left\{ \frac{1}{(\gamma \alpha, t)^{\alpha - 1}} \exp(-t) \right\} \{X(t) - \bar{x}\} + \frac{1}{k} e^\rho t \lambda(t + 1) \tag{14b}
\]

This boundary value problem can be solved numerically together with the initial conditions \(X(0) = x^0\), and the terminal condition, \(\lambda(W) = 0\).

VI. NUMERICAL SOLUTION OF OPTIMAL CONTROL MODEL

6.1. NUMERICAL SOLUTION OF OPTIMAL CONTROL MODEL WITH CONTINUOUS REVIEW POLICY

It provides the optimal solutions of the inventory model by assuming the initial inventory level is 10 items \((x^0 = 10 \text{ items})\), with inventory goal level of 20 items \((\bar{x} = 20 \text{ items})\), to be achieved within time period of 9 months \((T = 9 \text{ months})\), considering a discount rate of 0.1\% \(\rho = 0.001\), a manufacturing penalty cost of $3 \((k = 3$\)) and inventory penalty cost of $2 \((h = 2$\)). Using these values in using equations (11a) and (16a) accordingly, the inventory level is determined and the results are portrayed in Figure 3.

\[\text{Figure 3. Inventory level of optimal control model with continuous review policy with } \alpha = 3.\]

The simulation results in Figure 3 show that the optimal inventory level converges to its goal level, as expected. Next, the manufacturing goal rate and manufacturing rate are determined using equations (5a) and (9a), respectively. The following Figures 4 to 6 show the manufacturing rates, according to the three types of demand: increasing, decreasing and fluctuating.

\[\text{Figure 4. Manufacturing rates of optimal control model under continuous review policy with increasing function } (\alpha = 3 \text{ and } D(t) = 30 + 5t).\]

\[\text{Figure 5. Manufacturing rates of optimal control model under continuous review policy with decreasing function } (\alpha = 3 \text{ and } D(t) = 50 - 2t).\]

\[\text{Figure 6. Manufacturing rates of optimal control model under continuous review policy with fluctuating function } (\alpha = 3 \text{ and } D(t) = 10[3 + \cos(e^{0.5t})]).\]

As evidence from Figures 4 to 6, regardless of the demand type, the optimal inventory level and optimal manufacturing rates are converging to their goals over time. This convergence indicates that the minimization of the total cost is successfully achieved.

6.2 SENSITIVITY ANALYSIS OF OPTIMAL CONTROL MODEL UNDER CONTINUOUS REVIEW POLICY

The sensitivity analysis is performed by increasing the gamma parameter value, \(\alpha\), and changing the demand function, \(D(t)\). The respective results are summarized in Tables 1a and 1b.

Table 1a: Sensitivity Analysis of Gamma Parameter Value with \(D(t) = 30 + 5t\)

As illustrated in Table 1a, both the inventory level \(X\) and the objective function \(J\), are fixed at each month, with changing in the demand rates, as we read the table horizontally. Meanwhile, moving down vertically over time, the manufacturing rates converge to their respective goals at all gamma parameter values. The objective functions decrease substantially over time and achieve the minimum of zero at nine months. It is also evident that the inventory levels remain almost the same even with increasing gamma parameter values.

Based on the results, we can deduce the following:

i. The increase in the gamma parameter value from 3 to 6, which indicates increasing lifetime of a product, leads to decreasing manufacturing rate attributed to a decrease in the deterioration rate.

ii. The inventory level is insensitive to the change in the gamma parameter value, indicating that the inventory level is under control.

As illustrated in Table 2a, both the inventory level \(X\) and the objective function \(J\), are fixed at each month, with changing in the demand rates, as we read the table horizontally. Meanwhile, the manufacturing rates \(U\) and their objectives \(U^\alpha\), change with respect to the demand, so
that increasing with an increasing demand (30+5t), and
decreasing with a decreasing demand (50-2t).

From Table 2a, we can deduce the following from the
results:

i. The inventory level is insensitive towards the
change in the demand function.

ii. The objective function value is insensitive towards
the change in the demand function.

iii. Manufacturing rates are highly sensitive with
respect to the demand functions.

Table 2a: Sensitivity Analysis of Demand Function with
\( \alpha = 3 \)

Both inventory level and objective function are
insensitive towards the change in the demand function,
the model is efficient in controlling the inventory levels
and the total cost for different types of demand.

6.3. NUMERICAL SOLUTION OF OPTIMAL
CONTROL MODEL WITH PERIODIC REVIEW
POLICY

From equations (4), (12) and (14), the solution of the
system is shown in Table 3. The results at \( t = 8 \) is
included here as the manufacturing rate is measured
throughout the period \( T \).

From Table 1b, we can deduce that the solutions of
inventory level and manufacturing rate for both
continuous and periodic problems, as being very similar,
which is consistent with the findings by Sethi and
Thompson (2000).

Table 1b: The Optimal Solution of Control Model under
Periodic Review Policy with \( \alpha = 3 \) and \( D(t) = 30 + 5t \)

6.4 SENSITIVITY ANALYSIS OF OPTIMAL
CONTROL MODEL UNDER PERIODIC REVIEW
POLICY

As like as the optimal control model for
continuous policy, sensitivity analysis is also performed
for the periodic policy, but considering different
parameters here. The effects of changing penalty costs
and the initial inventory level are illustrated in Tables 2b
and 3b respectively.

Table 2b: Sensitivity Analysis of Penalty Costs with \( \alpha = 3 \) and \( D(t) = 30 + 5t \)

As evident in Table 2b, when the penalty cost of
inventory \( h \), increases from 2 to 3, the total cost
substantially increases by 36.4% from 173.246 to
236.0672 respectively. Meanwhile, an increase in the
penalty cost of manufacturing \( k \) from 3 to 4, shows only
a slight increase of 7% in the total cost from 173.246 to
185.51 respectively.

The following can be deduced based on the results:

i. The increase in the penalty cost of the inventory
level by $1 leads to the increased total value of the
objective function.

ii. The increase in the penalty cost of the
manufacturing rate by $1 leads to the increased
total value of the objective function.

As a result of (i) and (ii), the total cost increases with
increase in both the penalty costs of inventory and
manufacturing.

Table 3b represents the sensitivity analysis of the change
in the initial inventory level from 10 items to 5 (50% decrease) and 15 (50% increase), for increasing demand function.

Table 3b: Sensitivity Analysis of Initial Inventory Level
with \( \alpha = 3 \) and \( D(t) = 30 + 5t \)

It is observed horizontally, the total cost significantly
decreases by 302% from 173.246 at initial inventory
level of 10 to 43.3115, at initial inventory level of 15;
this is attributed to reduced difference between initial and
goal inventory levels. Meanwhile, the total cost
significantly increases by 502% from 173.246 at initial
inventory level of 10, to 389.8035 at initial inventory
level of 5. Vertically, the increase in the total cost occurs
from 0 to 3 months for all values of the initial inventory
levels.

The following can be deduced from Table 3b:

i. The increase in the initial inventory level by 50% leads to decreasing total value of the objective function.

ii. The decrease in the initial inventory level by 50% leads to increasing total value of the objective function.

VII. CONCLUSION AND RECOMMENDATION

In this study an optimal manufacturing inventory
control model is developed with Gamma distributed
deterioration items and demand functions. The
optimality conditions and explicit solution of the model
are derived using the Pontryagin maximum principle.
The simulation and sensitivity analysis results are
illustrated numerically for the model with different time-
varying demand patterns. From the numerical results, the
optimal inventory level and optimal manufacturing rates
are converging to their goals over time regardless the
demand type under continuous review policy and the
solutions of the inventory levels and the manufacturing
rates for both continuous and periodic review policies are
found very similar, which is consistent with the findings by [17]. In case continuous review policy, the manufacturing rates converged to their respective goals at all gamma parameter values. The values of the objective functions decreased substantially over time and achieved the minimum of zero at the nine months. It is also evident that the inventory levels remained almost the same even with increasing gamma parameter values. Both the values of inventory levels and the objective functions are found insensitive towards the change in the demand functions. The model is observed efficient in controlling the inventory levels and the total cost for different types of demand functions. In the future, the optimal control model of inventory manufacturing system with demand based on the price, ramp type demand, and stochastic demand could be explored. The similar type of model can be studied by considering other suitable probability distributions along with their parameter values.

REFERENCES

Research Paper on Customer’s Intention to Repurchase Footwear Products

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INTRODUCTION

Footwear is one of the biggest & ubiquitous industries in Bangladesh. It pits a great impact on national GDP as the foot wears are being exported in many countries from Bangladesh. Like garments, restaurant and fisheries a product, footwear is also has become a booming industry in this country. The less wage rate, ease of market entry and not having strict regulations are the main advantages the international dealers looking for. These advantages lead this industry to move forward for international market. The raw materials for production are easy to access because the main raw materials are locally made. Moreover, Bangladesh has access to get GSP (Generalized System of Preference) from many countries.

Before 1900s, the footwear industry in this country was out of modernization. On that time, the productions were used to be done within a cottage or small factories run in family level with a very limited number of production. The local economic scale of shoes was limited. Most of the shoes were imported from Kolkata, India. After 1960, Bata Shoe Intl Ltd established a commercial industry which was the first mechanized and biggest footwear. Later on, many more industries were initiated that fulfilled the local demand. In 2006, Apex came to the market with high quality footwear with numerous designs. From that time, they have been chasing the demand and styles of local consumers. Later on Bay Emporium, Legacy Footwear, and Paragon Leather and Footwear, Orion, Zeil’s, Jennys etc. entered to the market with same vision. Most of them including Apex, started to move forward for international market.

Customer’s intention to re-purchase foot wear depends on customer’s satisfaction. Customers who are satisfied with a purchased product will buy the same product again, more often [1]. Satisfying a customer is the core of marketing. A satisfied customer is the best business strategy [2]. Satisfied customers tend to come back and do business with Sellers. This will not only help them to increase their revenue, but also establish a good business relationship with seller and industry. If customers are satisfied with their products and services, they will want that company, industry or business to survive in any crisis that may come around. They may even try to assist the industry or business in ensuring the business survives.

Satisfied customers will take a part of the marketing of the brand and business for them. They recommend those products and services to their friends and relatives through the word of mouth communication. Satisfied customers are more likely to share your content across the social media. On the other hand, unhappy customers can damage business through negative word of mouth communication. It has been shown that dissatisfied customers tend to complain to the establishment or seek redress from them more often to relieve cognitive dissonance and failed consumption experiences [3].

RESEARCH MODEL

In an “Entrepreneur Asian Pacific” website it was explained that, marketing research is the process of gathering, analyzing and interpreting information about markets, about products or services to be offered for sale in that market, and also about the past, present and potential customers for the product or service; research into the characteristics, spending habits, location and needs of business's target market, the industry as a whole, and the particular competitors. Research is formalized curiosity, it is poking and prying with a purpose.

To complete the research on intention to re-purchase footwear we developed a research model. To develop the research model, we worked on four independent variables and one dependent variables. The independent variables are price, service quality, and product quality and product aesthetics. The dependent variable is repurchase. Each one of the variables provides
hypothesis and explains how it is related to the repurchase intention in a research.

A. Price:
Pricing is the most influential factor that fulfills the customer repurchases intention. Pricing is the sum of all the values that customers exchange for the benefits of having or using the product or service [4]. Price should be set in relation to the delivered value and perceived value of the product. Price also communicates the quality of the product. There is a strong relationship with price and customers repurchase intention because most of the people in our country are middle class and they want highest level of worthy product. It is necessary to ensure that customers are getting their products in much more affordable price as they did before. When People get their product in affordable price, they will be more influenced to repurchase the product. Most of the people like to repurchase a product which is offered in same price. Footwear industry in Bangladesh is offering their products in very lucrative price.

Hypothesis 1: More affordable price offered by footwear industry will affect positively to the repurchase intention level of customers

B. Service Quality:
Quality of service is one of the core elements of customer’s intention to re-purchase footwear. It has been empirically proved that high service quality motivates positive customer behavioral intention to repurchase, and in turn, promotes customer retention[5]. If the customers get proper service from the industry, he/she will be influenced to buy the product again. Jeff Bezos, an American investor, founder and CEO of Amazon.com, says “We see our customers as invited guests to a party, and we are the hosts. It’s our job every day to make every important aspect of the customer experience a little bit better.” So by the excellences of their service they can make the better experiences for the customers.

Footwear industry is also offering various customer care service. For example, Wide selection of pictures, Proof and wearing videos, Size and fit guide, Shipping policy and free return, Composition and care, Online order and catalogue. On the other hand, skilled educated trained staffs are helping to enhance service quality.

Hypothesis 2: The quality of customer service provided by footwear industry will affect positively customer’s repurchasing intention.

C. Product Quality:
A product is known as a quality product only when it satisfies various criteria for its functioning for the customers. People want best materials should be used for making the product. Product’s quality builds trust with customers. The quality of product and merchandise is way to help get consumers to appreciate and believe in what company has to offer. When the confidence and loyalty of consumers are gained, it is easy to do more with business, such as raise prices and increase varieties of products. Using of quality materials ensure the quality of the product which leads the customer towards higher level of repurchasing intention. BTO Sports says “We strive to provide great products by brands you already know and trust for the best quality and riding experience. As riders ourselves, we know exactly what you expect, and we make it our mission to deliver.”

Hypothesis 3: Quality materials for the products provided by the footwear industry, will positively affect the level of customer’s repurchasing intention.

D. Product Aesthetic:
Product aesthetics basically refers to the art design and beauty of that particular product. Product aesthetic is now become a core factor towards customer repurchasing intention. People are now very much conscious about product appearance and design. In addition, product design plays a crucial role in communicating a product's use and operating procedure to the consumer [6]. Attractive design will satisfy customer because of their better appearance. Footwear industry is also trying to come up with very attractive design. Companies are now very much conscious about designing products.

Hypothesis 4: More fashionable designs offered by footwear industry will positively affect customer’s repurchasing intention.

E. Repurchase:
All above are the factors that lead a customer toward the service that is provided by the footwear industry. And if a customer is satisfied by the offerings that an industry provides they will obviously come back to repurchase.

Hypothesis 5: customers will come back to the shop if they are satisfied with product offerings.

LITERATURE REVIEW

In this research “Customer Repurchase Intention on Footwear Industry” we researched about this topic and found out large number of result and studies on customer repurchase intention. We have decided to work on this topic because footwear industry in Bangladesh is booming day by day and people are becoming so brand conscious, they like to repurchase footwear from their favorite brand if they are fully satisfied with the brand. Bata shoe company established its manufacturing company at Tongi in 1962, it was the first manufacturing shoe company in Bangladesh. New footwear manufacturing units have recently introduced like APEX Footwear, Paragon footwear and many more. In present day these footwear company are the real player in the market, they introduced new fashion on footwear, they made their position in market by giving their customer
best quality footwear in a best price. People in Bangladesh from rural are to village area know about Bata, Apex and some footwear company like this, those people are have trust on that company and they like to purchase more especially on Eid, Puja or any festival season. It has seen that now a days that people are not getting best quality product even if they are paying the high price for footwear, sometime quality are very poor, color become fade.

So, from the discussion we can say that there is some problem in footwear industry in Bangladesh. In this competitive market if those big companies do not take care of their mistake and do not think about their customer, they are going to lose the trust of their loyal customer and also loss their revenue also.

RESEARCH METHODOLOGY

Since the main goal of this research is measuring the repurchase intention of customer on footwear industry, we have use and applied qualitative research technique to conduct this research. Qualitative research is designed to reveal a target audience range of behavior and perception that drives with reference to specific topic or issue. The results of qualitative research are descriptive rather than predictive; it’s more concern about human nature and human behavior.

A. Research design

This is a qualitative research, so its nature is more like descriptive. In the first step, we have collect data and information by qualitative method which help us to allow to find out the key factors and narrow down the key factors and the related item in this footwear industry, after that we do primary research, we have made a questionnaire based on customer repurchase intention question, we are able to collect 121 respondent response. In the third step, for collecting some information about footwear industry and customer we use secondary data and also go through some research paper and journal on this same topic.

B. Sampling

For our research paper, respondents were selected randomly which means the respondents were not pre-determined and this basically is called non probability sampling. However, we have provided questionnaire by taking help of social media and our sample size is 121 respondents. Moreover, We have conducted all these things via Google survey form. All the 121 forms were completed and submitted by this technology.

C. Analyses

For this research factor analysis was conducted Promax rotation to examine how the selected measures loaded on expected constructs. As we know, all the components are correlated. But our target was also to contain maximum number of variables. That is why we choose pattern matrix to analyze our data. Two factors were recovered from the analysis, those are, product aesthetic and service quality.

D. Reliability

The reliability of each multiple item assessed by the coefficient alpha indicated in the diagonal table. Throughout the analysis, it has been thinking about the questionnaire, if it measures repurchase intention in a useful way or not. Here, using reliability analysis, determined the extent in which the items are related to each other. We’ve got an overall index of the repeatability or internal consistency of the scale as a whole, and we’ve also identified the problem items that have been excluded from the scale. However, reliability relates to the consistency of a measure [7]. Research analyses shows that the consistency of each of the construct was relatively high considered to be good if the alpha value is .07. Twycross said that he Cronbach’s α result is a number between 0 and 1 and an acceptable reliability score is one that is 0.7 and higher[7] Moreover, the outcome of the item of reliability analyses seems good.

Reliability check on Service Quality variable:
Reliability of items of service quality is very well since the cronbach’s alpha shows its reliability up to the mark. It has 3 items

<table>
<thead>
<tr>
<th>Reliability Statistics</th>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.755</td>
<td>3</td>
</tr>
</tbody>
</table>

Reliability check on Repurchase variable:
Reliability of the items of the repurchase intention was up to the mark. It has cronbach’s alpha of .712 which is very good.

<table>
<thead>
<tr>
<th>Reliability Statistics</th>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.712</td>
<td>2</td>
</tr>
</tbody>
</table>

Reliability check on Product Quality variable:
Reliability of the items of the Product quality was moderate cronbach’s alpha of .557 which is close to .5.

<table>
<thead>
<tr>
<th>Reliability Statistics</th>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.577</td>
<td>2</td>
</tr>
</tbody>
</table>

E. Validity
Validity is defined as the extent to which a concept is accurately measured in a quantitative study [7]. However, discriminant validity is one type validity which shows the correlation between one scale and another is not as high as each scale’s coefficient alpha [8].

### Table 1

<table>
<thead>
<tr>
<th></th>
<th>FIELD 1</th>
<th>FIELD 2</th>
<th>FIELD 3</th>
<th>FIELD 4</th>
<th>FIELD 5</th>
<th>FIELD 6</th>
<th>FIELD 7</th>
<th>FIELD 8</th>
<th>FIELD 9</th>
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</thead>
<tbody>
<tr>
<td>A1</td>
<td>0.50</td>
<td>0.60</td>
<td>0.70</td>
<td>0.55</td>
<td>0.65</td>
<td>0.75</td>
<td>0.80</td>
<td>0.85</td>
<td>0.90</td>
<td>0.95</td>
</tr>
<tr>
<td>A2</td>
<td>0.55</td>
<td>0.65</td>
<td>0.75</td>
<td>0.60</td>
<td>0.70</td>
<td>0.80</td>
<td>0.85</td>
<td>0.90</td>
<td>0.95</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**Note:** Correlation is significant at the 0.05 level (2-tailed).

### Table 2

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.539</td>
<td>1.187</td>
<td>2.014</td>
<td>.044</td>
</tr>
<tr>
<td>PRER1</td>
<td>-0.256</td>
<td>.061</td>
<td>-0.258</td>
<td>-3.618</td>
</tr>
<tr>
<td>SQOQ1</td>
<td>.281</td>
<td>.071</td>
<td>.312</td>
<td>3.092</td>
</tr>
<tr>
<td>POQO1</td>
<td>.114</td>
<td>.082</td>
<td>.114</td>
<td>1.391</td>
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<tr>
<td>PAH1</td>
<td>.417</td>
<td>.060</td>
<td>.413</td>
<td>5.617</td>
</tr>
</tbody>
</table>

**Note:** Dependent Variable: RPP.

### RESULT

In the paper multiple regression analysis was used with the four independent variables. To test the model for repurchase intention to footwear industry. The model was found to be significant as indicated by the F statistics which is (p<0.000). The regression model explains 43.9% of the variation in the dependent variable. Two of the four factors had a significant effect on customer repurchase intention. This includes Service quality (beta value= .026, p<0.000), product aesthetics (beta value= .447, p<0.000).

The results suggest that our modified model explain repurchase intention in the footwear industry reasonably well.

### DISCUSSION

This research study tested a model of repurchase intention of the footwear industry using the transaction specific framework. However, the result suggested that our model explains customer repurchase intention and the full footwear service industry should focus on two major elements which is service quality and product aesthetic and this factor has to be treated as a strategic variable and enhanced.

From the results it was determine that product aesthetics and service quality was most important to customers. We believe our model is assessing customer re-purchase intention to the footwear industry is a useful one. We also believe that if footwear shop owner one to gain a competitive edge, they must continually strive to increase the level of customer repurchase intention. By emphasizing the two significant factor discerned in the study and a suggested by the transaction specific model

### CONCLUSION

“Service quality” and “Product aesthetic”, these two variables were emphasized more based on which customer retention is created. That means the customers more rely on service quality and product aesthetic that lead the customers to repurchase. As we have conducted this research within a very short given period of time, this might lack some necessary information. That is why it needs to go for a further research.

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Service Offerings, Performance Measurement and Performance Indicators of Pathao Rides in Dhaka city

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Abstract – In this technology driven sharing economy app-based ride-sharing services perform as a key influential transport medium serving sophisticated performance to commuters in Bangladesh. Indigenous Pathao Rides transformed the service scaling up and standards by grasping territorial needs of passengers and meeting those diligently in a cheaper fare. The objective of this exploratory research is to identify Pathao Rides service offerings, performance measurement stages and Key Performance Indicators (KPIs) framework in Bangladeshi context with practical exposition. An anthology of open-ended survey with 23 active Pathao commuters in Dhaka city, intense web review and interview sessions of Pathao Rides CEO; were carried out during the month of July-August 2018. The study reveals the commuters satisfaction impact strongly to Pathao Rides confirming influential service indicators. From managerial perspective, Pathao Rides and other ride-sharing services should utilize the proposed framework in leading future decisions.

Keywords – Ride-sharing services, Pathao Rides, Performance Measurement, Key Performance Indicators (KPIs), Commuters

I. INTRODUCTION

Pathao Rides exponentially growing from 10-15 rides in 2016 to 30,000 registered riders making 50,000 rides daily around Bangladesh [1]. Pathao began its journey initially as an E-delivery system in 2015, in December 2016 officially released ride-sharing apps in Dhaka with emerging 20 e-hailing competitors [2; 3]. Indigenous ride-sharing apps service Pathao Rides serve as the middle-class urban commuters’ solution as well as ensuring sustainable growth [4]. Tk. 2,200 crore is estimated in ride-sharing industry in Bangladesh occupying 23% market-share in the total transport sector, in which Pathao Rides delivers 20-30% cheaper rate than CNG and other e-hailing services [3;5]. 3.2 million inhabitants’ gets the average speed up to 6 or 7/km per hour and Pathao rides provide 26 km per hour [6]. Thus working-hours every day lost, hitting economic loss of $4.6 billion in Dhaka with over 18 million inhabitants in Dhaka city; Pathao builds loyal-user base that fitted quickly in balancing market-demand [1].

II. LITERATURE REVIEW

Judging as the key influencer in customer satisfaction several academics studied service quality with passengers’ satisfaction in various fields. Service quality is the formation of attitude by overall evaluation regarding organizations task accomplishment [7]. Availability, performance, tuning-testing and usability of public transport services quality impacts passengers’ satisfaction revealed from 120 sample [8]. Utilizing SERVQUAL model in public service and taxi commuters’ in Ghana explored affordability and comfort as major dimensions as service quality [9; 10]. Moreover, safety, comfort, cleanliness and customer service influences; Indonesian railway passengers’ satisfaction [11]. Service produced and consumed real time, it is heterogeneous, elusive in nature and mostly depends on the personnel who provides directly; thus pose difficulties to measure it [12]. This inconsistency led to develop gaps model of service quality measuring difference between customers’ expectations and perceptions with providers performed service reasoning four gaps [13].

Customer satisfaction is the key differentiator in any organizations performance measurement regarding feature, consumption-related fulfillment and pleasure [7; 14]. Especially ride-sharing services contribution in solving traffic congestion is investigated in many countries [15; 16]. Drivers’ courteous behavior, management’s efficiency in safety, promotion and price reduce providers’ gap of service delivery towards e-hailing passengers in India and Malaysia [17; 18; 19; 20].

Pathao Rides is a motorbike and car sharing platform enabling destinations quickly and safely. By using this one can request a ride for the nearest Pathao rider who pick-up and drop-off at the desired location [2]. A passenger sending a pick-up request by app, meeting the rider at desired point and reaching at the drop-off point with fixed fare with rating for both riders and passengers [21]. Pathao Cars launched in Dhaka on October, 2017 as well as another ride service in Chattogram. Pathao’s core philosophy is ‘bias to action’ to incorporate faster market feedback building product or operations with least-resistance forward system. From 30 employees...
initially now it has 500 employees working for Pathao [1].

III. RESEARCH STATEMENT AND PURPOSE

Dhaka cities gridlocked roads, ineffective vehicles, street-side businesses, populations; violating traffic rules increased its inhabitants’ chaos every day. Dhaka ranked 2nd the least livable city in the world [1]. But this city is blessed by ride-sharing services in a sense by providing convenient-comfortable services earning passengers’ dependence from 2016 and Pathao Rides is growing exponentially born and grown in Bangladesh. However, there are no specified key performance indicators (KPIs) in ride-sharing service sectors and no academics have studied its importance in this sector regarding what indicators will be used, how to aggregate collected data, how to prepare in a presentable format and deliver them.

Thus, considering loyal customers expectations as standards and meeting those focusing Pathao Rides, this study first time proposing ride-sharing services KPIs model in the context of Dhaka city of Pathao Rides. Moreover, drivers and passengers do not follow any KPIs settled by Pathao Rides to measure exempted services, thus this study addressed three research questions:

R.Q.1. What ride-sharing service offerings are available by Pathao Rides towards the passengers of Dhaka city?
R.Q.2. What is the effect of these service offerings performance towards Pathao Rides passengers?
R.Q.3. What does the process of creating key performance indicators (KPIs) for Pathao Rides looks like in Bangladeshi context?

IV. METHODOLOGY

This exploratory research utilized qualitative methods mainly web reviews of transport and ride-sharing service articles findings, Pathao Rides blogs and case studies and open-ended survey containing 15 questions, conducted upon 23 Pathao Rides active commuters in Dhaka city performed during the month of July-August 2018. The questionnaire is pre-tested several times among two expert faculty members and five Pathao commuters to increase validity. Due to resource limitations and time constraints, non-probability convenience sampling is adopted for gathering in-depth insights focusing Pathao Rides offerings and performance.

V. FINDINGS OF THE STUDY

A. Service offerings of Pathao rides

‘Pathao’ is a Bengali word means ‘to send something’ which provides on-demand ride-sharing services by motorcycles and cars required by android or internet enabled smartphones to enable the service [2]. Ride-sharing services now available in 8 different hubs in Dhaka and more other cities in Gazipur, Chittagong, Sylhet, Hathazari, Tongi, Savar, Ashulia, Narayanganj and Keraniganj cities and suburbs [1]. 5,000 helmets distributed for passengers’ safety naming a campaign called ‘#Moving Safety’ with Facebook buzz [6]. ‘Uthao Campaign’ sent 3 lucky winners with families to their village by helicopter ride on Eid vacation by using the Pathao app over 10 times during 10 days of the Ramadan 2018 [22]. Fleet management with tools empowers fleet owner cars by Pathao Cars managing the satisfaction level high for both drivers and car owners through various boosting initiatives [2]. E-transaction or e-wallet is Pathao’s new offerings for convenient payment options using existing driver network [3]. Around 100 registered female bikers with Pathao Rides, ensuring only female rider and passengers both [23]. Promo code is sent to the users by usage and referral code which is a unique code avails 50% discount up to Tk.100 for very first ride by sharing this code with two friends [21]. ‘Pathao Parcels’ a messenger service promising to deliver packages within three hours in Dhaka city from pick-up and drop-off locations tracked by GPS [1]. Pathao pay allowing data creation and credit history of drivers then design a financial model helps Pathao to grow [6].

B. Performance Measurement Stages

An analysis evaluating transport organizations performance of intended goals and objectives refers performance evaluation or measures of effectiveness or fixed standards [24]. Thus the research gap of this study is being the best indigenous e-hailing service in Bangladesh, if Pathao Rides follow any key performance indicators or KPIs to measure their delivered service according to standard or not.

Performance measurement (PM) systematically gathers and investigates data regarding organizational performance [25]. This paper is focused on identifying KPIs for evaluating ride-sharing services performance in Dhaka city with an aim of future satisfactory performance and guide for policy makers by analyzing way of data aggregation, preparation and perusing them. However, the inherent challenge relies on what indicators will be used as Key Performance Indicators (KPIs) as this is newly implemented in the ride-sharing service sectors [26; 27].

Several academics developed various performance measurement frameworks, but few in transportation sector and none in ride-sharing. Reference [27] proposes six sequential stages measuring public transports; however this study proposes a e-hailing service performance process focusing Pathao Rides in Bangladesh:

1. Vision, determination and identification: Firstly, Pathao Rides need to choose KPIs in the context of meeting their goals. [27]. A strong determination of ‘bias-to-action’ to serve customer at all level carry forward through performance both from internal employees and drivers integrating on-time service with KPIs what and how should do.

2. Factors in Business Model: Its’ operational level is a flat organization where hierarchy exists but at a
minimum level intentionally to boost strategies [1]. Ride-share business model is different in terms of self-employed drivers, fleet of vehicles and apps effectiveness [28]. Demand, resources for maintenance-overhead costs, marketing promotions to attract drivers and customers impact Pathao’s business model and complicacy which could be addressed by KPIs in depth. Software developers recruited from local available freelancers to write codes in creating a user-friendly app with a dedicated server including all the features and functions for easy engineering generate passengers’ satisfaction.

3. Focus and Project Management: A controllable project management system for ride-share services defines each needed resource meticulously, action budget requirements, timely visionary goal setting [29]. Here the milestones and KPI’s could be settled down by the overall constraints and opportunities considered as the blueprint for success. This needs to be communicated through-out the organizations for quality-task accomplishment. Pathao rides project management requires resource allocation with each action by step-by-step logical process in working pieces. Pathao is very careful regarding solving out ‘bottleneck’ where an aimed process not complicated during peak demand, road blockade, time accuracy to drive pick-up point to drop-off area [2; 3]

4. Monitoring: Previous three initial stages are the cornerstones following updates regarding collected data of settled aims. Tracking changes in delivered result serve as a key role in formal reporting for Pathao’s performance [25].

5. Evaluation: Assessing Pathao Rides overall effectiveness and efficiency from top to bottom in shaping to find out predicted benefits and monetary value without any unexpected happenings, should complete at this stage [27; 1; 28].

6. Execution and apply: This stage ensures re-check process for faulty systems and Pathao’s all stakeholders may get success by improvised decision making.

7. Reiteration and follow-up: Repetition of the entire process with fixed interval must be integrated with Pathao Rides KPIs to make more operative.

C. Key Performance Indicators (KPIs)
The term ‘ride-share’ is not a new buzz in app-based economies of 2018 since it became popular in 2012 after Uber launched in San-Fransisco [28]. Realizing local cultural needs and dynamism, Pathao rides meeting ordinary middle-class passengers’ expectations conveniently and this resulted other ride-share competitors like Uber, SAM, Bahon as laggards. But, to maintain present customers and attracting new, Pathao rides have to follow up-to-date, trendy and sustainable performance indicators that increase new scope linking passengers to the drivers and internal personnel more closely. These indicators can be settled easily but hard to reach at target [27].

Key Performance Indicators (KPIs) used to measure quantitative and qualitative way for checking and tracking organizations outcome towards the goal [27]. These measures support determining execution objectives and activities [30; 31]. As ride-sharing apps service is getting popular from only 2 years, determining and implementing accurate KPIs can be hard to deal with Bangladeshi context. Nevertheless, developing country like Bangladesh would be benefitted by the proposed framework of Pathao Rides KPIs as these were found by extensive review of ride-sharing literatures, interview session with Pathao Rides CEO Elius and survey with an active Pathao Rides sample.
1. Traffic Congestion Adaptability KPIs:
Transport problems in Dhaka city have been studied by few researchers and most of them agreed that traffic gridlock is the prevalent problem. Zipping time through Pathao Rides in traffic-ridden Dhaka city at the peak during office time; mostly students and job holders are its commuter’s regularly [4]. Road-side illegal parking, lack of legal framework and road-side shops; mainly causing traffic problems towards 20 million inhabitants with 4.2% yearly growth of Dhaka city [15; 16]. The KPIs for Pathao’s traffic congestion adaptability shown in fig. 1.

2. Safety-security KPIs:
Safety and security are influential satisfaction factors of ride-sharing commuters proved by many academics [15; 16; 17; 18; 19; 20]. Pathao Rides top priority is its safety measures, include; meticulous training session ‘Shikhao’ about e-hailing and interaction with passengers, verifying driving license, registering vehicles standards using for rides and registered documents [1]. Sharing to track route-destination by Messenger or Whatsapp with a friend, two-way rating system for both riders-passengers after the completion of trips moreover, if riders rating fall below 80% they adhere suspension risk with rate of complaints receiving [2]. The GPS tracking, skilled driver’s ratings, safety kits such as; helmets, seat-belts, vehicles condition perform as a safeguard to consumer this service revealed by the survey in this study. But lack of adequate security measure of this service demanding to set accurate KPIs for e-hailing service, these are presented at fig. 1.

3. Reliance KPIs:
For the busy working-class and student citizens, Pathao is form of blessings in terms of instant calling of drivers by apps with affordable fare and accuracy of pick-up and drop-off anytime even in midnight, peak-time and holidays availability [3;5]. A powerful database is maintained so that passengers feel reliable about any fraudulent cases. Female respondents disclosed they feel safe rather than other ride-sharing app services in Dhaka as Pathao Ride’s quickly response to complaints. However, if all these passengers feedback is measured as Pathao Ride’s quickly response to complaints. However, if all these passengers feedback is measured with standard, the result would be more fruitful. Reliance KPIs, according to passengers’ satisfaction towards Pathao’s performance; shown at fig. 1.

4. Applications Effectiveness KPIs:
Holistic and faster solution from small monolith code-based system to powerful micro service-based database structure maintenance is one of strength of Pathao Rides among all e-hailing service in Bangladesh [2]. The survey reveals by this research that, cancellation of few rides in a short time is seriously figured-out by asking commuters through data aggregation. There ‘bias-to-action’ ingrained the data science reiteration and follow-

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**Fig. 1. Key Performance Indicators (KPIs) framework for Pathao Rides**

1. Traffic Congestion Adaptability KPIs:
   - Alternative routes per trips
   - Travel time (minutes/hours)
   - Delay (minutes/hours)
   - Excess fuel consumption (gallons per commuter)
   - Peak-hour demand (per commuter call)
   - Vehicle capacity utilization (per commuter riding each trip)
   - Car and motorbike ownership reduction (per trip)

2. Safety-security KPIs:
   - Passengers feel safe (%)
   - Accidents rate (number)
   - Injuries due to accidents (number)
   - Driving skills of drivers (%)
   - Drivers obeying rules (%)
   - Use of helmets and seat-belts (%)
   - Female commuters safeguard (%)

3. Reliance KPIs:
   - Informing of delay (minutes/hour)
   - Accuracy of pick-up and drop-off schedule (%)
   - Weekdays, holidays & weekends availability (%)
   - Illegal/fraudulent drivers (%)
   - Passengers response rate to promo code and referral code (%)

4. Applications Effectiveness KPIs:
   - Active GPS system (%)
   - Database repository (%)
   - Data aggregation (%)
   - Passengers ratings evaluation of drivers & vehicles (%)

5. Degree of Comfort KPIs:
   - Drivers pleasing rate (%)
   - Drivers fulfilling passengers need (%)
   - Neatness of vehicle (%)
   - Drivers appearance & courtesy (%)
   - Commuters feelings towards seats and journey (%)

6. Compassion KPIs:
   - Ease of information comprehension by passengers (%)
   - Delay or inability to deliver service informed to passengers (%)
   - Reasonable fare (Tk.)
   - Value for money service (%)
   - Response time (minutes/hour)
   - Listening complaints & solution (%)
   - 24/7 hour customer response service
   - Emergency Problem solution

7. Financial Perspective KPIs:
   - Operation cost (Tk.)
   - Fare revenue (Tk.)
   - Ride-share investment expenditure revenue in % of GDP (Tk.)
   - Governmental fees (Tk.)
   - Cost per passenger (Tk.)
up system but absence of KPIs not showing the right outcome. These are presented at fig. 1.
5. Degree of Comfort KPIs:
The pleasing performance, appearance of drivers, neatness of vehicle, availability of expedite seats and travel time; influence mostly commuters’ expectation [18; 29]. Existing 50,000 commuters’ degree of comfort if measured against standard indicators in Dhaka, Pathao could get some crucial findings as presented in fig. 1.
6. Compassion KPIs:
Trustworthiness and customer care service mostly impact ride-share service commuter’s satisfaction level [18; 19; 28]. Survey of active Pathao commuters agreed reasonable fare, customer response service, emergency problem solution, compassionate drivers impact positively to evaluate. Nevertheless, how much compassionate level should make customers to utilize Pathao Rides still is overlooked. Thus the KPIs settled at fig. 1 shown the way to measure this towards Pathao.
7. Financial Perspective KPIs:
Pathao Rides CEO states they follow flexibility as a operational model in finance and operation with moderate flavor of hierarchy [1]. But, there is no evidence of assessing their performance in monetary terms. Hence, recognizing its necessity the financial perspective KPIs is presented at fig. 1.
VI. DISCUSSION
This study contributes theoretically and practically towards ride-sharing services strongly and transport services regarding customer satisfaction. By concentrating on market gap created by the commuters expected service performance standards of leading Pathao Rides in Bangladesh, this paper bridges the gap between theory and application in performance indicators of ride-sharing app services. Previous researchers overlooked in laying out by the commuter’ expected service performance standards of leading Pathao Rides in Bangladesh, this paper bridges the gap between theory and application in performance indicators of ride-sharing app services. Previous researchers overlooked in laying out performance process and KPIs of ride-sharing services, but this paper introduces commuter engagement initiatives with overall improved service standards in Bangladeshi context very firstly. These 7 KPIs if integrates with passengers satisfaction, Pathao Rides as well as other ride-sharing service providers will be successful in nurturing sustainable marketing tool globally. Future research could implement larger representative sample of this sector approaching quantitative method in the form of focus group, interviews, tracking commuters’ behavior during travelling. Examining different industry and geographical location checking performance process may increase data generalizability.
VII. CONCLUSION
Identifying local passengers’ needs Pathao Rides robustly delivers on-time service offerings concentrating holistic solution of mobile based database in Bangladesh. To conclude the study, findings indicate that; e-hailing commuters influenced positively by quick response to query, accuracy of arrival schedule, drivers courteous performance, comfortable travel time and traffic congestion adaptability in this traffic-ridden over-populous Dhaka city. Thus, Pathao Rides gained immense popularity in ride-sharing service sector and for the inalterable sustainable position these performance indicators working like protective shields.

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Is Social Media Necessary for Recruitment of International Students?

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Abstract – This study aims to examine how universities use social media in their marketing strategy to recruit international students. A theoretical framework has been developed based on international recruitment, social media platforms and social media content. By applying a qualitative method, 13 interviews were conducted from international departments in 10 Swedish universities. The respondents included communication managers, international coordinators and social media administrators. The empirical evidence was analyzed with a few themes following the theoretical structure. The common social media platforms used in international recruitment of students are found to be Facebook, Instagram and YouTube. Pictures and videos are important formats, which are used to ensure student engagement and create interest for the educational institutions. When creating content it is of significance that it emphasize the value of the education, arouses student emotions and displays a clear picture living around the university. This study will be helpful for educational institutions that already use or planning to use social media for international recruitment.

Keywords – International recruitment, platforms, content, engagement, interaction, target audience.

I. INTRODUCTION

With increased globalization, human capital and international recruitment of right people have become a vital issue for firms to be competitive in the world market [1], [2]. Recruitment of foreign students has been a rising issue in universities due to economic, diplomatic and cultural reasons [3]. There are several authors, who have highlighted recruitment of international students from a university perspective [4], [5], [6]. Universities however widely differ in adopting strategies to attract and keep contact with foreign students. In this regard, USA and UK have been in the front line with well-developed marketing strategies. [3]found that more than 100 British universities used specialized staff for international recruitment in 2012. English speaking countries have historically been in a favorable position in the competition, as most students prefer to communicate and study in English [4],[7],[8]. However, the extent and nature of the competitiveness is getting harder as growth countries like India, Japan and China claim a reasonable share of the incoming foreign students [5]. [8] assert that students today are like business clients and therefore universities need to apply modern business techniques to meet the customer (student) demands. [9] points out that the marketing methods have changed in the recent years and [10] claim that social media as a marketing tool is replacing the traditional marketing methods. One important success factor for social media is its double way communication, which is created between the sellers and the clients [8]. Quite reasonably, [7] find that social media play a major role in the universities for contacting and developing relationship with students around the world. Reference [4] found a positive relationship between student recruitment and use of interactive media like Facebook and Twitter. Things are not though so simple because use of social media can also lead to negative interaction and slander[11]. One major disadvantage of social media is the absence of control on what is published about the firm and the institution[12]. Like any business organization, a university therefore needs to have an effective strategy to successfully deal with social media.

In recent times, a number of researchers have studied recruitment of international students by using social media. Major issues examined in the studies include customization [10], institutional branding [8],[4], marketing strategy [13], students’ engagement [7] and Facebook as social media platform [6]. Although these studies make useful contribution to this prospective field of research, they rather concentrate on specific issues than to seek an overall understanding on how social media promote universities. We argue that it is more important for the universities to realize how they can develop and implement social media based marketing strategies to increase their competitiveness in student recruitment. There is a research need to focus on the whole recruitment process by integrating content of the message, choice of social media platforms, interactive communication with the students and finally how recruitment is carried out. A further gap is related to location, which made previous studies mainly to concentrate on the English-speaking countries. This study addresses these gaps and aims to examine how universities use social media in their marketing strategy to recruit international students. In concrete, following questions are addressed:

- What are the social media platforms that universities mainly use in communicating with the international students?
- How is the content of the social media constructed?
How do the universities apply social media to recruit international students?

To conduct the study, recruitment process of Swedish universities has been investigated for its Nordic exotic atmosphere compared to the English-speaking nations and growing interest in social media in foreign student recruitment. This study conceptualizes the role of social media for the recruitment to educational programs, explores different media platforms and examines how Swedish universities apply social media to promote international recruitment.

II. THEORETICAL DISCUSSION
In this section international recruitment and social media are discussed to develop a theoretical foundation to carry out the empirical study.

International recruitment of students
A recruitment process can be defined as a method to attract applicants with the required qualifications and which maintains the applicants’ interest for the organization [1]. Recruiting students is about universities attracting desired applicants by marketing an educational program correctly [5]. As students generate income to the universities, they should according to [8] be treated as customers and therefore it is essential to develop carefully prepared market strategies to satisfy them. The United States and Great Britain have long been developing strategies for recruiting international students (ibid). Recruitment of international students has become an established market which require professionalism from the universities. [3] showed that over 50,000 international students were recruited by agents during the 2010/2011 academic year. [5] observe a clear difference between well-established and emerging universities in recruiting students. In the earlier case, universities are capable to carry out own successful international recruitment campaigns while the other need support in every steps. [5] have distinguished four steps in recruitment: funding the recruitment process, developing an international recruitment team, creating targeted advertising related to university specialty programs, and creating a multicultural atmosphere.

As international environment offers variation, it is likely that way of recruiting might vary in different culture contexts. [1] have found that there are situations when certain recruitment activities that are effective in one culture could be counter-productive in a different culture. [14] argue that, despite the increased heterogeneity of attitudes and behaviors, global companies need to work with a cross-cultural segmentation to develop the company’s global marketing strategies. [15] observe that it is important for companies today to adapt social media contributions to different cultures of different countries in order to reach the target groups more efficiently. [13] find that cultural aspects can affect the effectiveness of marketing through social media.

Social media and different platforms
Social media is today an important marketing tool [16],[13],[6],[17] describes social media as network-based social networks where social interaction between users and producers takes place. [13] describe the social media platforms as dynamic and that they are developed and produced by many participants in a continuous and collaborative manner. Social media success has changed the structure of marketing communication in recent years [10]. Traditional media such as TV, radio and newspapers are losing their grip on consumers because of increased competition for consumer attention [9]. On social media, users can connect by creating personal information profiles, invite friends and colleagues to have access to these profiles and send emails and instant messages [16][8].

The applications for media platforms are different: Instagram focuses primarily on images, YouTube is used for videos, Twitter only allows to post within a limit of 140 characters, while Facebook has no limitations or particular focus on any type of posts [11].
The most common platforms in Sweden are according to the Internet Foundation (2017) Facebook, Instagram and YouTube. Facebook was launched in 2004 by Harvard student Mark Zuckerberg. Facebook is the most popular social networking site [18], [19],[20], [21]. It is also the social media that most companies use, free of charge for both individuals and companies [22],[23]. [22] observes that Facebook is a suitable platform for building a continuous customer relationship between business and customer and for creating first contact.

Instagram was launched by Facebook in 2010 as a mobile application where photos and short movie clips can be shared via mobile phone [11],[24]. Its use is characterized by selfies, photographs, hashtags and a number of filters that users can use when editing images [24]. The platform has over 600 million active users every month and is today one of the most growing social media (Internet Foundation, 2017). Instagram as well as Facebook, according to [22], is free and an important platform for building a continuous customer relationship between companies and customers. It is also appropriate to use inspiration for products, build a brand image and share everyday views (ibid). YouTube is the most popular internet site for video sharing and has over 800 million users monthly [22]. This platform is used by all age groups but particularly aimed at very young users where it is most popular between the ages of 12 and 20 years [22]. According to [22], the platform is suitable for informative content such as interviews and interesting stories where viewers can follow behind the scenes.
Social media content

The most important part to succeeding in marketing through social media is its content [22],[11],[25]. Different types of content also provide different types of involvement [11],[15]. Argue that in order to achieve commitment it is important to approach the customers on emotional grounds. According to [22], the content is divided into two different types; (1) base content that accounts for the updates related to the business, and (2) campaign content that stands for the temporary content that differs from the base content. It may suffice to publish only a basic content, but there may be a need for campaign content to communicate information beyond the usual activities (ibid). [25]. On the other hand, divide content into four different categories; information, sales material, inspiration and education. The content that inspires, maintains and educates is the most important part in a first contact while information and sales material are more important to close a purchase decision (ibid). According to [22], there are three important aspects of the content: the actual content such as different types of text, pictures and movie clips, the story, and the dialogue which represents the tone and storytelling highlighted, as well as the activity and distribution of technology and frequency of publishing.

A good content takes into account both what the company wants to say and also what the target group desire [22],[25],[26]. Believes that in order for social media marketing to be effective, marketing efforts must be tailored to different users. It is therefore of great importance for companies to listen to the target groups, trying to understand what they want and what they consider to be of value [18], [27]. When content is designed against a broad audience, it may be relevant to many but not really adapted to anyone [26]. It is therefore important that the target group is clearly defined. Companies can also define their typical customer, persona, which describes the target group’s behavior and priorities [26]. According to [17], an interesting content is important in increasing customer involvement. [28] believes that commitment gives an advantage because the customer can generate content but also become positive advocates for the company's products and services, which may affect purchasing decisions. By purchasing a service such as an education, it is also expected that these expectations are met or exceeded because they can serve as a comparison standard against which the service is perceived [29]. This expectation is created, among other things, when the customer takes part in the content of marketing campaigns, hence it is very important to design the content in a way that accurately reflects the reality (ibid). If content has generated all too high expectations in response to the actual service, customers will be disappointed and have a negative experience. This can generate bitter comments and experiences, which can quickly be shared with other customers, and result in a negative brand image [30], [17].

III. METHOD

As the purpose is to create an understanding on social media’s role in attracting foreign students to the universities, a qualitative method is found suitable to conduct this study. Data was collected through semi-structured interviews and websites of the selected Swedish universities. Semi-structured interviews were used to ask follow up questions and to adjust questions order with respect to the respondents’ answers. The follow up questions were helpful to create a deeper understanding of how the universities use social media in the international recruitment process. An interview guide, both in English and Swedish, reflecting the theoretical framework, was constructed to cover issues related to international recruitment, marketing, types and application of social media, social media content and students’ participation. This guide aimed to focus on the three research questions for developing understanding and theory building by addressing the research gaps. Two pilot studies were conducted to evaluate the level of understanding and relevance of the questions. 10 Swedish universities were selected considering age, number of students and geographic representativeness for the study (Table 1). In total 13 respondents took part in the interviews. The respondents were carefully chosen due to their expertise and experience in working with social media and communication for international recruitment of students. The websites of the universities have been used for the background and current situations of the educational institutions.

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Year of establishment</th>
<th>Number of students</th>
<th>Interviewees and their positions</th>
<th>Interview time in minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Agricultural Sciences (SLU)</td>
<td>1977</td>
<td>3745</td>
<td>R1, Communicator R2, Communicator</td>
<td>65</td>
</tr>
<tr>
<td>University of Gävle (HIG)</td>
<td>1977</td>
<td>17000</td>
<td>R3, Communicator for social media</td>
<td>40</td>
</tr>
</tbody>
</table>
For analysis, all data and the supporting documents were carefully examined, and data without proper evidence were not taken into consideration to keep high quality of the process. The research went through a thematic analysis by following [31] and the three themes, namely, international recruitment, social media platforms and social media content, were chosen in compliance with the aim and the theoretical frame of the study. To increase quality, and ensure validity of the data, recorded interviews were listened by the side of the data transcriptions whenever needed. The researchers counted how many times vital issues came up in the study, for example how many universities used certain social media and how many of the respondents named concepts like students’ engagement, role of media and marketing strategy, etc. This was done to find the right themes and not to under- or overemphasize a concept/theme. Further data was compared between the universities to see how they differ in using social media and with what effect on the recruitment process. The comparison helped to find out if facts were incorrect by checking with the respective respondent. Some of the primary data could also be checked with the university websites. Using different sources led to triangulation of the data which is an important part of a qualitative study [32].

IV. EMPIRICAL DISCUSSION

Recruitment of international students
Most of the respondents believe that the value of recruiting international students can be seen from a cultural viewpoint where diversity in classrooms increases the quality of education. Some universities (JU, LIU SLU, UU) see the Swedish reform in 2011 which made non-EU / EEA students to pay tuition fees as a breakpoint for the recruitment of international students.

The study shows that the Swedish institutions chose to implement the 2011 reform in different ways - some accepts directly while others wait. Respondents at UU believes that the 2011 reform meant that universities have to consider students as customers and implement business-oriented marketing methods to reach the students to a greater extent than previously needed when the education was free. Using business-oriented marketing methods is according to [8] a way to be competitive in the educational market.

How the institutions chose to focus their marketing efforts are found to vary. Some institutions focused both inside and outside Europe while others decided to target the paying students. JU, LIU, SLU and SU have chosen to put marketing effort within the EU. However MU and UU consider that European students already have knowledge about Sweden and therefore marketing efforts are not a priority for this region. Several universities focus on China and India. [5]explain that the reason for selecting these countries is the growing number of solvent families who have the financial ability to send their children abroad, which UU also confirms. The Swedish government has also chosen to focus on these countries due to financial reason. UMU and LIU experience that when the state chooses to focus on a country, it becomes easier for the university to reach out to the target students.

Social media platforms
UU, LIU and MU emphasize that creating interaction is the primary reason for using social media. UU believes that social media is an important tool for building relationships with consumers. All educational institutions besides HIG are present on at least two different social media platforms (Table 2). The institutions have chosen to use Facebook for an international recruitment purpose. MU and UMU
perceives Facebook to be the absolute best platform for international recruitment and [17] state that Facebook along with YouTube is the most important platform for marketing. SLU and UMU consider that Facebook is an easy-to-use platform while the respondent from MU believes that Facebook is difficult to use for the reason that the platform is under constant change. Even LIU, SLU and SU, as [22], observe that Facebook is disadvantageous for its constantly changing terms and conditions. This has caused SLU to work out a strategy for how the university will act if it is forced to leave this social medium. Marketing via social platforms, according to [33], is about a two-way communication and, UU and SU suspect that this issue has become less important in Facebook. Both the institutions observe the gradual decline of this platform.

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Facebook</th>
<th>Instagram</th>
<th>YouTube</th>
<th>Other platforms</th>
<th>Other platforms for restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Agricultural Sciences (SLU)</td>
<td>XX</td>
<td>XX</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>University of Gävle (HIG)</td>
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<td>--</td>
</tr>
<tr>
<td>Uppsala University (UU)</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Jönköping University (JU)</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Malmö university (MU)</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Stockholm University (SU)</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Gothenburg University</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Linne University (LNU)</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>--</td>
<td>XX</td>
</tr>
<tr>
<td>Umeå University (UMU)</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Linköping University (LIU)</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

Source: Interviews and university websites

Table 2  Use of platforms of international recruitment

Instagram is used by all educational institutions, except HIG, for international recruitment purposes. SU, GU and MU find that the use of Instagram has increased in recent years which also confirms the observation by [34]. JU, LNU, SLU, UMU, and UU believe that everything in the image format works well to create student involvement. According to [35], it may be a challenge to publish relevant images, and develop a method to let different people develop the content with varied and interesting information. Six of the 10 universities have used image format on Instagram and let student ambassadors stand for content on a weekly or monthly basis. Eight of the 10 educational institutions use YouTube. Both GU and MU emphasize that it is an advantage to be on YouTube because it is an effective search tool. Educational institutions publish interviews with students and films showing university buildings or representing different programs. GU believes that they will further increase the use of this platform in the future for recruitment purpose. The publication flow is not as large in this platform as on Facebook or Instagram. SU observes that they only update their channels when there is a relevant content to publish while MU describes that the platform is updated maximum once a month. This also confirms [35] finding that YouTube does not require as frequent use as the other social media demand.

MU and SU are also using Twitter when recruiting international students since the students are accustomed with this platform. Five of the 10 institutions use specific platforms for certain geographic segments such as China and India. This can be seen as important for reaching the intended target group which also [19] observed.

Social Media Content

This study has shown that the most important part to succeeding in marketing through social media is its content. Respondents at SLU, UU and GU believe that it would be ideal if segmentation and target country marketing on social media is executed, but they think that it would increase costs making financing difficult. GU tries to design content depending on the country from which the target audience comes from, however, they find it as a challenge to go into the depth of the other country. Some of the universities therefore use recruitment agents who have better knowledge of a certain country. MU however finds that marketing does not necessarily have to be adjusted to nationality. MU works with student personas in order to figure out why students seek to Sweden, and this is what [26] considers useful for clearly defining the target audience. By starting from the student’s perspective, an interesting content, relevant to the target groups, can be created.
As [15] UMU finds that content must reach the recipients emotionally for involvement and response. MU describes that it is not only about marketing the education but also the country, the city and the future. [12] consider it difficult to measure a value of an education spontaneously, as students use different aspects to assess the education. Some institutions find it important that university ranking in education and research is properly reflected in the content. [36] argue that this kind of information provides facts and assurance about the value of the education and service. GU observes that the student must get a sense of good quality for the money paid for the education.

Some of the institutions believe that it is important that the content of social media does not provide an embellished picture of reality. UU observes that it is of great importance not only to show nice summer pictures with green grass and lovely flowers, but also to reflect the November darkness. Some educational institutions believe that an honest picture of Sweden and the place of study is important for recruiting the right students who are preparing for living in Sweden. By using misleading content, wrong students can be recruited who may experience dissatisfaction and spread negative remarks. [17] and [37] argue that negative comments can be quickly shared with others and cause a negative brand image.

V. FINAL COMMENTS

This study has shown that all universities recruit internationally to reach diversity in classrooms and to attract international talents and research profiles. After the 2011 Swedish reform, the educational institutions have gained two experiences: decline of international students and extra income generated from students outside EU/EEA. The institutions focus on different international markets, but the Asian market and countries like China, India and Indonesia have been popular markets for some universities.

Nearly all universities used Facebook, Instagram and YouTube, and the choice of platforms has been based on the countries where the marketers and the communicators found the target groups. The universities are using more than one platform to reach potential students and a broader audience. Facebook is the most widely used, but criticized platform due to its changing nature making the adjustment and continuity of the relationships with the students difficult. Instagram shows a growing trend and is considered an important platform for creating the relationships considered central in marketing. Although YouTube is least applied, it seems to become an important tool in the recruitment process. One advantage with YouTube is that it does not need to be updated often due to its use as a search engine. Some universities also chose to use specific platforms for different geographic segments, especially China, to reach the specific target audience.

There is a disagreement amongst the universities on how the target groups are to be defined and to what extent the content should be tailor-made. Some educational institutions are found to divide the target groups geographically toward more customization. But for cost reason some universities follow a general campaign and restrict to limited amount of adaptations. However, there prevails a common understanding that young people around the world have a similar liking and therefore both standardization and adaptation need to be included in the content. It has been emphasized that content is emotionally built to attract the students but at the same time, it needs to be fact based reflecting the quality and status of the university. Further to the institution, it is also found important to promote the country, the city and the student life to attract international students to live and stay a certain period of time. Content need to be published in social media but the relevant and qualitative content is more important than the frequency of the publications.

REFERENCES


Abstract – Recruitment and selection is the indispensable functions of human resource management. It is the process of searching and obtaining of potential candidates. Organizations are progressing the modern recruitment and selection methods for entry the multinational companies. The success of the organization depends on effective recruitment and selection system. In this paper, the main objective is to construct a conceptual framework for recruitment and selection procedures regarding the case study on university grants commission. The study also focuses its attention to determine how the recruitment and selection practices affect the organizational outcomes.

Keywords – Conceptual framework, Recruitment, Selection

I. INTRODUCTION
In this era of globalization, an organization needs to prosper and survive effectively and efficiently in the global economy. Every employer of the organization must promote and practice recruitment and selection process in an exceptional way. The success of the organization depends on the qualified employees and it is directly linked with organizational performance. Proper recruitment and selection is the lifeblood of every organization as like as capital.

The eminence of human resource profoundly depends on the effectiveness of proper recruitment and selection procedures [1]. The inclusive objective of recruitment and selection is to find out the qualified candidates for the organization [2]. In case of recruitment and selection, the recruitment is the first step then after selection and placement come in the employment procedure [3].

The major aim of all employers is to select qualified candidates among the alternative group of qualified candidates for a specific job. All activities of the recruitment and selection process are done by the human resource department of an organization. These processes vary from organization to organization.

The traditional sources are employee referrals, transfers, promotions, walk-in, and advertisements. But in the process of recruitment differs from organization to organization. In the modern economy, the recruitment process is changing drastically with the entry of social media.

The second step of the manpower planning process is the selection. It is the choosing process of the suitable candidate which matches knowledge, skills, abilities, and job requirements of the candidates [4].

Selection is the lengthy process for large organizations and it differs from one industry to other [5]. Different types of factors are considered in selecting a candidate like an interview, group discussion, reference and background check, medical examination, employment background etc.

Recruitment and selection can play a vital role in shaping an organization’s effectiveness and performance. It also plays an important role in ensuring worker performance and positive organizational outcomes. The recruitment and selection process must be done at each and every sector for fulfilling organizational goals [6].

The right person with the right job skills depends on an effective recruitment and selection process. It helps to get the right person for the right place at the right time of organizations.

Therefore, the major objective of this study is to construct and test a conceptual framework linking recruitment and selection procedures to organizational performance that fit university grants commission.

II. LITERATURE REVIEW
The recruitment and selection process is one of the most important HRM functions that help to recruit talented candidates. It also reflects the requirements and philosophy of the organization as reflected in the caliber of people chosen for the job.

Recruitment and selection practices are the key factors to the entry point of human resources to any organization.
which also tends to determine the success and sustainability of the organizations [7].

People as vital to organizations because they offer perspectives, values and attributes to organizational life; and when managed effectively, these human traits can be of considerable benefits to the organization [8].

On the other hand, the quality of the human resource of the firm has heavily depended on the effectiveness of recruitment and selection functions [1], [9].

Literature critically reviews the employee recruitment and selection in organizations and from the perspective of human resource management. Recruitment and selection process are important practices for human resource management and are crucial in affecting organizational success [1], [9].

2.1 Recruitment

Many researchers have presented severe and profound knowledge of the recruitment and selection process of the organization. Recruitment determines the potential candidates for actual organizational vacancies.

Recruitment is the process of finding and attracting qualified people to apply for job vacancies in the organization [10].

Mainly it is the process of generating a pool of competent individuals to apply for employment within an organization [2].

The recruitment process is the entry point of collecting manpower of an organization and that organization must be selected the right individuals for achieving overall strategic goals [11].

On the other hand, the organization follows the different recruitment process practices and policies for identifying and attracting potential employees [12].

Besides recruitment is explained as the set of activities and processes that are used to legally obtain a sufficient number of qualified people at the right place, the right time, the right job so that the people and the organization can select each other in their own best short and long-term interests [13].

However, the aim of recruitment is to collect the number of suitable and qualified candidates through minimization cost to satisfy the needs of the organization [14].

Besides, the recruitment includes an authentic job specification for a vacant position, major duties, and responsibilities, necessary kills, experience, educational qualifications, pay structure, job type, any special conditions etc. are attached to the job in defining recruitment process [15].

Recruitment process begins with analyzing the number of vacancies and publishing an advertisement. The organization attracts the most appropriate candidates through identifying, evaluating and using the most appropriate sources of applicants [16].

2.1.1 Process of Recruitment:

The significant intangible capital of the company is human capital that constitutes an aggregate of knowledge, skills, qualifications, and experience of each employee [17]. Besides, the major three phases engendering applicants, maintaining applicants’ status, and influencing job choice judgment [18].

Whereas there are copious theories on recruitment and fabricated an organizing framework for the recruitment process [19]. Furthermore, the most important five key stages of the recruitment process are recruitment objectives, strategy development, recruitment activities, and process variables and recruitment result [19]. These stages are discussed in below:

<table>
<thead>
<tr>
<th>Recruitment Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Retention rate, job performance, psychological contract fulfilled, number of positions filled, diversity of hires, number of applicants, quality of applicants diversity of applicants, ratio of offers to acceptances)</td>
</tr>
<tr>
<td>• Job Satisfaction</td>
</tr>
<tr>
<td>• Cost of Filling Jobs</td>
</tr>
<tr>
<td>• Speed of Filling Jobs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Whom to recruit? Where to recruit? Recruitment sources to use? When to recruit? What message to communicate?)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recruitment Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Recruitment sources, recruiters, recruitment message, realism, completeness, timeliness)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervening /Process variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Applicant attention, applicant comprehension, message credibility, applicant interest, job and organizational attractiveness, expectancy of job offer accuracy of applicant’s expectations, self-insight, knowledge, skills, abilities, needs)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recruitment Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Compare outcomes to Objectives)</td>
</tr>
</tbody>
</table>

Figure 01: A model of the Organizational Recruitment Process (Breauh and Strake (2000))
Stage-1 (Recruitment Objectives)-This is the first stage of recruitment. In this section the organization determine the retention rate, number of applicants, quality of applicants etc.

Stage-2 (Strategy Development)- The second stage of the recruitment framework is strategy development. It includes the formulation of a recruitment strategy which is influenced by the response from the first stage. It includes whom to recruit? Where to recruit? When to recruit? What message to communicate?

Stage-3 (Recruitment activities): Recruitment activities include the recruitment advertisement and recruitment message. In order to be actual, recruitment message should be realism, completeness, timeliness). On the other hand recruiting many employers are not overly concerned with post-hire outcomes [20].

Stage-4 (Intervening/process variables)- The process variables are applicant attention, comprehension, message credibility, interest, an accuracy of expectations and applicant self-insight. These variables directly influence the relationship between recruitment activities and recruitment outcomes.

Stage 5-(Recruitment results)- This stage relates the review and assessment of the sources of the recruitment process. The organization gets invaluable information of recruitment strategy from this stage.

2.1.2 Sources of Recruitment

Many employers use a variety of recruitment sources. Other researchers have argued that different recruitment sources reach applicant groups that may differ on characteristics such as motivation or perceived job mobility [18].

Other researchers said that the sources of employees can be classified into two types, internal and external [21].

Besides the recruitment sources are closely linked to the organizational activities as the performance of employee turnover, employee satisfaction, employee wishes and the commitment of the organization [22]. Basically, there are two types of sources of recruit. These are given below:

<table>
<thead>
<tr>
<th>Sources of recruitment and selection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Internal sources</strong></td>
</tr>
<tr>
<td>- Promotion</td>
</tr>
<tr>
<td>- Transfer</td>
</tr>
<tr>
<td>- Job posting</td>
</tr>
<tr>
<td>- Job bidding</td>
</tr>
<tr>
<td><strong>B. External Sources</strong></td>
</tr>
<tr>
<td>- Advertisement</td>
</tr>
<tr>
<td>- E-recruitment</td>
</tr>
<tr>
<td>- Employee referrals</td>
</tr>
<tr>
<td>- Labor offices</td>
</tr>
<tr>
<td>- Employment agencies,</td>
</tr>
<tr>
<td>- Educating and training establishment</td>
</tr>
</tbody>
</table>

Figure 2. Sources of Recruitment (Source: Prashant (2009)).

A. Internal Sources of recruitment- Internal sources mean hiring people from within the organization to fill a position. An organization can hire internal candidate through job posting or rehiring former employees, through succession planning, through internet, advertising, employment agencies, temp agencies and other alternative staffing methods [23].

Promotions: It is another internal source of recruitment. It means to change position with higher prestige, responsibilities, compensation and others facilities. Basically the higher position may be filled up through giving promotions of the qualified employees.

Transfers: Transfer means to shift of an employee from present jobs to other similar jobs. Basically here is no change rank, responsibility, prestige, and other types of facilities.

Job posting: In this case the organization communicates with public for vacant position that it wishes to fill. Also it is an encouraging system of applicants to apply in vacant position.

Job bidding: It is a competition process among the applicants for a job position that is posted by an employer. It is the main source for internal recruitment. Here the organization gives the chance to apply for the job opening.

Former Employees: Former employee is another source of internal recruitment where the retired employee may be willing to come back to work in the organization.

Employee Referrals: The organizations or companies use this method to find out the talented employee through recommend their existing employee.

B. External sources-It is the attraction process of applicants from outside a particular organization to fill vacant positions. According to Bardwell and Brown [24] the external sources of recruitment are following-
**Advertisement:** It is the most common method or source of external recruitment. The organizations or companies publish their advertisement through electronic print media and others social network.

**E-Recruitment:** E-recruitment also known as online recruitment. Through this system the organizations can easily hire their respected personnel for work.

**Employment Agencies:** Employment agencies sometimes referred to as labor brokers. Employers can reduce the range of possible problems from these sources by giving a precise definition of the position to be filled.

**Labor Offices:** Labor offices are the sources of certain types of workers. Unions also can work to an employer’s advantage through accommodating staffing programs, as they do in the building and printing industries [25].

**Campus Recruitment:** Sometimes the organization finds out their qualified employees from colleges, universities, and other institutes through different tests. It is the major source of recruitment for many respected corporations [26].

**Walk-ins, Write-ins and Talk-ins:** Other sources of recruitment are Walk-ins, Write-ins and Talk-ins. It is the direct application process to respected organization without prior appointment. Here direct applications are effective in filling entry-level and unskilled vacancies. Some organizations compile pools potential employees from the direct applications for skilled positions [27].

**Radio and Television:** It is very effective to reach individuals who are not actively seeking employment. However, these ads are expensive.

### 2.2 Selection

Selection is the process of making the choice of the most suitable applicant from the pool of applicants who are recruited to fill the relevant job vacancy [10].

On the other hand selection is a procedure in which particular instruments are utilized to select the best people from the pool of individuals that are suitable for the jobs [2].

Moreover the selection is the systematic process of deciding on a specific individual to fill an available position [11].

On the other hand selection is the process of selecting the most suitable candidates from among the alternative candidates.

The objective of the selection process is to match the applicant’s ability, knowledge, skills and experience with job requirements in a fair and legal manner [28].

Selection is the process of choosing the best qualified candidates from among alternative group of qualified candidates for a particular position in an organization [29].

Whereas the recruitment process is aligned to encourage individuals to seek employment with the organization, the selection process is to identify and employ the best-qualified and suitable individuals for specific positions.

#### 2.2.1 Selection Process

Selection process is the hiring procedure of prospective employees among alternatives employees for doing a particular job [21]. He also said that in the hiring procedure varying methods are used to discover significant information about an applicant, which can be compared with the job specification.

All managers of the organization need to understand about necessary skills and abilities which need to perform a particular job. Interviews, reference checks, tests, applications and résumés can help to identify differences among candidates.

The managers can take selection decision through strengths and weaknesses of the applicants. Similarly like recruitment have also divided selection process into six different phases [30]. These phases are mentioned in the following-

<table>
<thead>
<tr>
<th>Preliminary Interview</th>
<th>Application blank interview</th>
<th>Employment test</th>
<th>Employment interview</th>
<th>References check</th>
<th>Physical check</th>
<th>Offer employment</th>
</tr>
</thead>
</table>

Figure 03: Selection process (Erasmus et al., 2000)

**Preliminary Interview:** It is also called the screening interview. The purpose of preliminary interviews is basically to eliminate unqualified applications based on information supplied in application forms.

**Selection Tests:** Selection tests are also called employment tests. Different types of tests may be administered, depending on the job and the organization. Through this test the organization can determine the applicant’s knowledge, abilities, skills, behavior etc.

**Relevance of Tests:** Basically the organization use the testing process for attracting the higher level of applicants [31]. However the personnel selection procedures is helpful in selecting good employees. In his
analysis, test utility studies showed the value of selection for increasing productivity.

**Personality tests:** There are five dimensions of effective personality test like extroversion, emotional stability, agreeableness, conscientiousness, and openness to experience. Actually the personality test is used by the organization to assess the personality of worker and his relationship with employer [32].

**Aptitude Test:** An aptitude test is a systematic means of testing a job candidate's abilities to perform specific tasks and react to a range of different situations. An aptitude test helps determine a person’s potential to learn in a given area.

**Interest tests:** These tests are used to measure an individual’s activity preferences. Separately these tests are very essential for the better carrier for the employees.

**Graphology test:** Employers usually consult graphologists to supplement their usual personnel recruitment procedures. Graphology tests are designed to ensure accuracy of information given in the application.

**Making the decision:** It is necessary to inform all the applicants of the outcome as soon as possible, whether successful or unsuccessful. Keep in touch if the decision is delayed. Offer of the employment should be made in writing to aware candidate about legal regulations.

**Induction:** After finally selection the applicants the employer arranged the well-planned induction program. Medical examinations and documentation are other points to be considered during effective, fair and efficient recruitment and selection process [33].

### III. CONCEPTUAL FRAMEWORK OF RECRUITMENT AND SELECTION:

#### 3.1 Explanation of Conceptual framework-

The recruitment and selection processes are not equally exclusive, but occur in a structure. Basically at first recruitment then selection, where recruitment process is end and selection process is start. The best assets of the organization are employees. So every employer needs to undertake recruitment by creating a pool of applicants, which mainly leads to the selection of qualified people to work in the organization. In this model different variables are considered as independent, dependent and outcome. According framework of this study here antecedents variables are considered as sources of recruitment. Basically there are two types of recruitment sources internal and external. The internal and external sources are transfer, promotion, and extension of services, advertisement, and employment agencies, employee referrals, e-recruitment, labor office, campus recruitment, walks-ins, radio television, job bidding. Here recruitment is considered as independent variable because the recruitment process is depends on antecedents’ variables (internal and external sources).

Recruitment is depends on antecedents variables whereas the selection is dependent variable which is responds to the independent variables. Selection is follow the recruitment which includes initial screening, interview, employment test, reference check, medical examination, job offer. After completing the proper recruitment and selection procedures then it leads to achieve organizational performance that is outcome variable of this model. The objective of this model is to establish
The focus of recruitment and selection is to match the capabilities of prospective candidates against the demands and rewards inherent in a given job. For why the quality selection systems the top organizations give considerable resources and energy. The overall aim of the recruitment and selection process should be to obtain at minimum cost the number and quality of employees required to satisfy the human resource needs of the organization [14].

The process of recruitment and selection and Human Resource Management are directly related to the planning of human resources. Due to the importance and knowledge gained about the recruitment process, organizations disclose the importance of recruitment and selection in their success. The success of human resources departments is measured on their recruitment and performance of competent employees.

IV. CONCLUSION

Recruitment and section is the essential function of Human Resource Management. The organizational performance depends on qualified employees of the organization. Recruitment and selection is the best practice for hiring talented candidates of the organization. It helps to regulate the purpose of the organizations. Basically the recruitment and selection process is guided by organization’s strategies, missions and objectives.

The focus of recruitment and selection is to match the capabilities of prospective candidates against the demands and rewards inherent in a given job. For why the quality selection systems the top organizations give considerable resources and energy. The overall aim of the recruitment and selection process should be to obtain at minimum cost the number and quality of employees required to satisfy the human resource needs of the organization [14].

The process of recruitment and selection and Human Resource Management are directly related to the planning of human resources. Due to the importance and knowledge gained about the recruitment process, organizations disclose the importance of recruitment and selection in their success. The success of human resources departments is measured on their recruitment and performance of competent employees.

REFERENCES


Financial Reporting Practices of Local NGO’s Operating in Bangladesh

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Abstract – NGOs are the most old development institutions that are contributing towards the development of third world economy. Due to globalization some NGOs operate in the other countries. But their financial reporting inevitably is somewhat specialized in nature. In Bangladesh different NGOs using different method of accounting and reporting system due to lack of accounting and financial reporting standards, hence the comparison among the NGOs isn’t possible. As there is no IAS/IFRS it is very difficult to follow a common standard in generation and presentation of accounting and financial information. This paper aims to demonstrate financial reporting and accounting system of all the local NGO’s operating in Bangladesh and provide a guideline for constituting suitable financial reporting and accounting systems for NGOs. Both primary and secondary sources of information have been used in achieving the aim. The article elaborates on basis of preparation of financial statements, some issues regarding the recording of financial statements in NGO’s and the quality of maintaining these reports. The final part of the article discusses issues relating to financial report and how these reports plays an important role for the managers in taking financial decisions.


I. INTRODUCTION

“Financial Reporting”, which actually underpins accountability, is a process to provide information about the financial position, financial performance, and cash flows of an entity through a set of general purpose financial statements that is useful to a wide range of users to make a diversity of investment, credit, and other decisions including tax assessment. Users, the buyer of the information in the reported financial statements, need to know the status of the business as a result of its past performances to expect and predict current or future capacity of the entity. They at varying degrees hinge upon the information that the concerned organization supplies to allure them.

Considering the information need in the market and its role in economic activities, the International Accounting Standard Committee (IASC), the predecessor of the International Accounting Standard Board (IASB) of which the Institute of Chartered Accountants of Bangladesh (ICAB) is a member has issued a framework explaining the purpose of a set of general purpose financial statements, and the concepts that underlie the preparation and presentation of financial statements for external users.

With the fundamental assumptions of Accrual Basis and Going Concern on top, these concepts such as: i) Understandability ii) Relevance iii) Timeliness iv) Reliability v) Prudence. vi) Comparability vii) Truthfulness viii) Fairness ix) Recognition and measurement of: Asset, liability, equity, income, and expenses to maintain capital are to be adhered to while the preparers of the financial statements apply the relevant Bangladesh Financial Reporting Standards/Bangladesh Accounting Standards (BFRS/BAS) and Bangladesh Financial Reporting Interpretations/Bangladesh Accounting Standards Interpretations (BFRI / BASI) -all of these together form the BFRS.

In addition to the Framework and BFRS, the local regulators like the Registrar of Joint Stock Companies and Firms, the Securities and Exchange Commission, NGO Affairs Bureau, Bangladesh Bank etc. can prescribe industry specific formats of presentation of financial statements. Thus an applicable Financial Reporting Framework emanates from local statute, and international standards. The range of regulatory activities typically includes setting minimum standards and requirements for corporate reporting, requiring submission of the financial reports to the oversight body for its review, making regular inspections, and investigating and prosecuting misconduct by the corporate entities for breaching and abusing reporting framework. Therefore, strongly active Financial Reporting Regulations can encourage and compel standardized financial reporting within applicable framework.

Objective of the study

The objectives of the study are as follows:

- To find out the importance of financial reporting practices of Local NGO’s operating in Bangladesh;
- To identify and analyze the problems of NGO’s financial reporting practices;
- To highlight the quality of NGO’S financial management; and
• To find out the differentiating issues of NGO’s financial reporting practices in relation to general financial reporting.

Research Questions
To get more insight into the research following research questions have been investigated:
1. How important are the financial reports to the NGOs operating in Bangladesh?
2. What is the overall quality of the financial reports and do the NGOs follow the standards while maintaining these reports?
3. What are the differentiating issues between the NGOs financial reporting practices in relation to general financial reports?
4. What are the different problems faced by the NGOs while analyzing these financial reports?

Research Hypotheses
The purpose of this hypothesis is investigating the existence of a significant relationship between age, gender and occupation in relation to the importance of financial reporting practices in the NGO’s.
1. Financial reporting practices helps in the recording and reporting system of the local NGO’s.
2. Financial reporting helps in highlighting the quality of the NGO’S overall financial management.
3. NGO’s financial reporting practices are quite similar to the general financial reporting.
4. Financial Reporting is one of the most important practices in the NGO’s.

II. LITERATURE REVIEW
The NGO concept started its operation in 1945 following the establishment of the United Nations Organizations which was organized in the need to give a consultative role to organizations categorized as neither government nor member states. Ref [1], studied the financial reporting practices of India, Australia, USA and UK etc. The results of the study showed that present reports were insufficient for modern business conditions and did not disclose the necessary information required in these days of complex trading conditions. The disclosure practices of 40 public sector companies for 1972-73 were done by [2]. An index of 35 items of financial and non-financial information was prepared after scanning the annual reports of these companies. The findings of the study revealed that quality of disclosure varied from enterprise to enterprise and the nature of industry had a great influence on the quality of the disclosure. A comprehensive attempt to compare the current status of disclosure level of Indian and U.S. companies for the years 1990-91 to 1994-95 was done by [3]. The study was based on 100 Indian and 100 U.S. companies. Findings of the study showed that there was improvement in mean disclosure score of Indian companies over the period of study. Ref [4] examined the accounting standards and their practices in Oman, with a view to strengthen the accounting standards and improve their practices for good corporate governance. Ref [5] analyzed the annual reports of 10 insurance companies and 10 banking companies listed on the Dhaka Stock Exchange (DSE), selected on random basis for 2001 and 2004. Findings of the study showed that banking and insurance companies do not comply with all the mandatory requirements in the annual reports. Another study done by [6] showed the environment disclosure practices followed by different companies of Bangladesh from their financial statements. Study is based on the financial Statements of 121 companies. Findings showed that among 121 companies, only 13 companies have disclosed environment related information in their annual reports. Ref [7] analyzed the mandatory and voluntary disclosure practices of public limited companies in India for the year 2009-10. The author identified 22 items of mandatory disclosure and 32 items of voluntary disclosure. Findings of the study showed that there was 100 percent disclosure for mandatory items but wide diversity in the type and presentation of voluntary disclosure among companies.

III. RESEARCH METHODOLOGY
This report was based on both Primary and Secondary data. The primary data was collected through surveys, discussions, close-ended questionnaire method, in-depth study of selected cases. The secondary data sources are- Annual reports, Newspaper, articles, journals and websites. Sample unit of research was based on the people working in finance or business development department in a NGO to get a proper idea of how the financial reports are recorded and if the NGOs are actually following the accounting standards for recording their statements. Both male and female of ages among 16-34 (+) years were considered for this study. The sample size for the study was 40.

This study used probability sampling technique that involved selecting participants randomly for questionnaires. The information was collected from the service holders and students currently working in an NGO. As it is a relatively internal practice of an organization, not many people are aware of it. The data that collected from survey and observation is analyzed with SPSS using descriptive statistics and regression analysis produced graphs, charts etc. and necessary information to explain the result.

IV. DATA FINDINGS AND ANALYSIS
Research findings and analysis basically includes analysis of the overall survey which was done using
SPSS software. Descriptive analysis has been used and shows the percentage of the responses of all the questions in the questionnaire. Out of the 40 respondents 20 of them were female and 20 of them were male. 7.5% of the respondents were in the aged in between 16-20. 21 of the respondents were aged in between 21-24 which is 52.5% of the respondents, 12 of them were aged in between 25-29 which is 30% of the respondents, 4 of them were aged in between 30-34 which is 10% of the respondents. 15 of them were students who represents 37.5% of the total population. Only 1 respondent doesn’t have any clear understanding about financial reporting which is about 2.5% of the overall respondents. And the rest 39 have a clear idea about the financial reporting practices of the organization which is around 97.5% of the overall respondents. And around 11 respondents use modifies cash basis in their organization which is about 90% of the total respondents. And around 4 respondents uses accrual basis which is around 10% of the total respondents. Out of the 40 respondents 6 of the respondents think that financial reporting practices in NGO are not similar to general financial reporting practices which is 15% of the overall respondents. And 34 respondents think that financial reporting practices are similar to general financial reporting practices.

From 40 respondents, only 1 respondent agrees with the fact that the organization prepares timely financial statements which is useful for the Board and the employees and it is around 2.5% of the whole respondents. Around 10 respondents are neutral with the fact that the organization prepares financial statements which is useful for the board members to take decisions and it is around 25% of the whole respondents. Around 22 respondents agree with the statement which is around 55% of the overall respondents. About 7 people strongly agree with the statement and it is around 17.5% of the overall respondents. Among 40 respondents, around 7 respondents strongly disagrees with the statement that the organization prepares cash flow projections to identify the sufficient cash in one hand which is around 17.5% of the whole respondents. Around 6 respondents disagree with the statement which is 15% of the whole respondents. 6 respondents are neutral, which is about 15% of the overall respondents. 16 respondents agree with the statement which is around 40% of the overall respondents. And about 5 respondents think that the organization prepares cash flow projections to determine the sufficient cash in hand.

7 respondents are neutral with the fact that the forecasts year end revenues and expenses assist in making sound management decisions which is around 17.5% of the overall respondents. 23 respondents also agree with statement which is 57.5% of the whole respondents. 10 respondents strongly agree with the statement which is around 25% of the whole respondent.

Among 40 respondents, only 1 disagree with the statement that financial reporting practices helps in determining the overall financial position of the organization which is about 2.5% of the total respondents. 27 respondents are neutral about the statement which is around 67.5% of the overall respondents. 16 respondents agree with the statement and which about 15% of the overall respondents is. 16 respondents agree with the statement which is around 40% of the overall respondents. And about 5 respondents think that the organization prepares cash flow projections to determine the sufficient cash in hand.

Testing of Hypotheses

The test of selected hypotheses is shown below:

i. NGO’s financial reporting practices are quite similar to the general financial reporting.

Table 1.0: Similarity of NGOs Financial Reporting and General Financial Reporting

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
<th>Exact Sig. (1-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>.0520</td>
<td>1</td>
<td>.819</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuity Correction</td>
<td>.000</td>
<td>1</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>.053</td>
<td>1</td>
<td>.818</td>
<td>1.000</td>
<td>.600</td>
</tr>
<tr>
<td>Fisher's Exact Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.051</td>
<td>1</td>
<td>.821</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.25.

b. Computed only for a 2x2 table

P-value = .819
Since the calculated p-value is greater than .05 as shown in table 1, the null hypothesis is accepted. Therefore, this means that NGO’s financial reporting practices is not quite similar to the general financial reporting.

ii. Financial reporting practices helps in the recording and reporting system of Local NGOs.

Table 2.0: Recording and Reporting System of Local NGOs

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>2.005&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3</td>
<td>.571</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>2.306</td>
<td>3</td>
<td>.511</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>1.688</td>
<td>1</td>
<td>.194</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .38.

P value=.571

It has been shown in table 2.0 that the p-value is greater than .05, the null hypothesis is accepted. Therefore, this means that NGO’s financial reporting practices doesn’t help in the recording and reporting system of the NGO’s.

iii. Financial Reporting helps in highlighting the quality of the NGO’s overall financial management.

Table 3.0: Quality of the NGO’s Overall Financial Management

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>4.399&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3</td>
<td>.223</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>6.422</td>
<td>3</td>
<td>.093</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.015</td>
<td>1</td>
<td>.902</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 6 cells (75.0%) have expected count less than 5. The minimum expected count is 1.13.

P-value=.222

Table 3.0 also shows that p-value is greater than .05, hence, the null hypothesis is accepted. Therefore, this means that NGO’s financial reporting practices doesn’t help in highlighting the quality of the NGO’s overall financial management.

The summary of the hypotheses testing:

Table 4.0: Summary of Hypotheses Testing

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Hypotheses</th>
<th>Null hypotheses Accept/ Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ha: NGO’s financial reporting practices is quite similar to the general financial reporting.</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>Ho: NGO’s financial reporting practices are not quite similar to the general financial reporting.</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.0 lists down the summary of all three hypotheses tests and it reveals that all of them have been accepted.

V. DISCUSSION

After proper research and analysis I have developed some specific findings of the study. The following findings were completely developed depending on the overall survey of the report. These basically includes introducing proper accounting standards in NGO’s because most of the NGOs in Bangladesh are using different method of accounting and reporting system due to lack of proper accounting and financial reporting standards. As a result of which it is very hard for the NGOs to keep track of their financial statements properly. Proper development of these accounting policies helps in carrying out the financial reports accordingly. The NGO Financial Management should describe the accounting policies, systems and procedures to be used by the organization. The Policy will cover the input, processing, output, control and distribution of financial data. The present financial condition of any organization determines its future. In a similar manner, NGOs should also opt for sustainable use of finance. NGOs should make more productive decisions concerning resource allocation, fund raising, fund mobilizing and other undertakings. Good decision making skill enables right amount of funds to be invested at the right place. Funds are therefore efficiently and optimally utilized. The very first step in making a policy is to understand its purpose. NGOs need to address specific needs or objectives while making financial policies. Identifying the purpose will give a strong foundation and base to overall policy development. Therefore, it is the most significant stage in the policy making procedure.

VI. CONCLUSION

Financial reporting practices is one of the most important function local NGOs operating in Bangladesh. In this report, the overall picture of the recording of financial reports has been shown and a survey has been done on the service holders and students working in a non-government organization. After proper analysis it has been found that most of the NGO’s are not following the proper accounting standards and the quality of maintaining these reports to some extent is not up to the...
mark. Most of the NGO’s are not even registered and even though they are operating in different important places their financial management is not properly developed and hence their quality is also degrading day by day. Throughout my research, I have found that the financial management policies of NGO’s are quite similar to general financial reporting. This is mostly true because although these organizations has the same financial management policies they are not following the proper accounting standards hence there is always a difference between the general financial reports and the NGO’s financial reports. The problem that is basically faced by the organizations is NGO’s Financial Management policy which should describe the accounting policies, systems and procedures to be used by the organization.

VII. RECOMMENDATIONS

As this research has encountered some limitations and the relationship between variables is not up-to the mark, I have suggested some recommendations for the overall research:

Overall Approach to Accountability, Quality and Impact:

The most effective NGOs are those that work to their strengths, and are able to mobilize the skills of the people that they serve. Their impact is linked to their responsiveness to people’s needs, and it is the strength of their bonds with all those affected by, or interested in their work that matters, rather than their scale of operation.

Financial goals set before the beginning of budget development process:

Financial policy development is dependent on budget development and these policies must adhere to the overall budget plan. Therefore, it is best for NGOs to have financial goals in addition to their overall objectives, as a part of their annual planning process.

Budget processes include strategy development for funding overhead costs:

If budgets don’t define strategic development of overhead costs funding, then it is the financial policy that needs to address it. NGOs are often faced with challenges such as securing funds for its administrative costs, raising unrestricted funds and developing earned income streams. These challenges must ideally get a solution either through budget or through financial policy.

Proper training and guidance for Finance stuff:

Financial policies must address the need for proper training and guidance of its financial staff. It must formulate strategies that will help in conducting training programs and sessions so that financial staff gets more educated and are informed about their scope of work.

Preparing a proper financial agreement:

One of the most important documents for the finance and accounts department is the funding agreement between the donor and the organization. The agreement should typically have details related to: Deliverables, budget breakup, deadlines, reporting procedures, fund release schedule and clear demarcation of financial and non-financial aid.

Structure of financial management policy for the NGOs:

All financial decisions, activities and plans are done in accordance to a set of procedures that form the basis of the financial policy. Once the financial objectives are confirmed, the next move is to frame policies to guide its further proceedings. Financial management policy of an NGO is a manual that covers all the accounting policies, procedures and systems of the organization. Primarily, there are two purposes for framing a financial policy:

- To look into proper governing of the financial transactions taking place in the concern so that the staff can abide by the set procedures and
- To fulfill requirements of local statutory bodies and establish strong management practices, as adopted by the NGO.

REFERENCES

Changing Paradigms of Higher Education in India through the Adoption and Use of E-Learning Technology by Faculty Members

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Abstract – Digital technology has become all pervasive and there is no aspect of our lives, which has remained untouched by this phenomenon. Digital technology is rapidly changing the face of the education industry at a rapid pace. Teaching has evolved over the centuries. Earlier subjects were taught as theory but now the introduction to online teaching has added to the enrichment of learning. Overall the advantages are numerous. Faculty Members of higher education institutions are adopting the use of E-Learning technology. The efforts of teachers and technology have combined to improve the quality of education and learning attempts to emphasize a number of advantages. With advanced technology, contemporary higher education has become a technology oriented educational environment for its students. Having advanced technology makes an educational environment more effective and efficient. This paper will make a detailed study about the adoption and use of E-Learning technologies by teachers in institutions of higher education in India. We will also make an attempt to identify the factors that encourage or discourage the adoption of E-Learning technologies in higher education institutions.

Keywords – E-Learning, Digital Technology, Higher Education Institutions, Digital Literacy.

I. INTRODUCTION

Digital India is changing the face of the education industry at a rapid pace. The purpose of this research is to carry out an in-depth investigation and analysis of the use of learning platform technologies for learning, teaching and management in institutions of higher education. The developments in the field of information and communication technology have brought psychological, sociological as well as technological changes in every field including education.

The present boom in technology has had its own very special impact on education. This impact is noticeable in formal as well as informal education, traditional as well as professional education at all levels. The efforts of teachers and technology combined to improve the quality of education and learning attempts to emphasize a number of advantages. With advanced technology, contemporary higher education has become a technology oriented educational environment for its students. Having advanced technology makes an educational environment more effective and efficient. Teaching has evolved over the centuries. Earlier subjects were taught as theory but now the introduction to online teaching has added to the enrichment of learning. Overall the advantages are numerous. But there are some limitations as well, that can keep the traditional methods at an edge. The creation, preparation and uploading of study material is time-consuming and requires the teachers to put in a little extra effort that is required in the traditional methods of teaching. A massive restructuring of higher education is being envisaged by institutions like UGC and AICTE.

Government of India’s Digital Empowerment program takes into account the following factors:

Digital Empowerment of Citizens
- Universal digital literacy
- Universally accessible digital resources
- Availability of digital resources / services in Indian languages
- Collaborative digital platforms for participative governance
- Citizens not required to physically submit Govt. documents / certificates

As we see that Universal digital literacy, universally accessible digital resources and availability of digital resources / services in Indian languages are at the top of government’s agenda for digitalization. The National Mission on Education through Information and Communication Technology (NMEICT) Scheme meanwhile aims to leverage the potential of ICT for teaching and learning processes. The Mission has two major components - content generation and providing connectivity along with provision for access devices to the institutions and learners. Under the NMEICT Mission connectivity to 419 Universities/ University level Institutions and 25000+ colleges and polytechnics in the country has been envisaged to be provided. Digital India has been envisioned as an ambitious umbrella program to transform India into a digitally empowered society and knowledge economy.

As defined by the National Science Foundation, E-learning is the use of networked computing and communications technologies to support learning.”
**E-Learning** tools and technologies often represent a collection of different tools and applications that are centrally connected and coordinated within the institution. Institutions of E-learning platforms share a variety of materials and resources including policy documents, details of key objectives, assessments and assessment results, planning documents and policies, e-safety documents and access to e-services for solving technical issues. E-Learning tools have laid a foundation of research methods, theory, practice, and scholarly conferences and online journals.

**II. OBJECTIVES:**

- To develop a detailed understanding of the factors and issues that encourage or inhibit the effective adoption of E-learning technologies by teachers in institutions of higher education in India.
- To identify E-learning technologies that are commonly being incorporated in instructional practices by teachers of higher education institutions in India.
- To provide evidence for the benefits that accrue through the effective use of E-learning technologies by teachers of higher education institutions in India.

**III. RESEARCH GAP**

The use of E-Learning technology in India is a recent phenomenon and further it is rapidly evolving. There are not many studies available on the topic, in the Indian context, and further by the time the studies are published, new learning technologies emerge, replacing the old ones. This paper will make an attempt to study the use of E-Learning Technologies currently being used in institutions of higher learning.

**IV. CONCEPTUAL FRAMEWORK: E-LEARNING VS CYBER LEARNING**

Cyber learning and E-learning are essentially working towards the same goal: *provide learning experiences via a technology-based platform*. However, the difference lies in the ways in which such learning experiences are provided.

Cyber learning is essentially a newer twist on E-learning, where technology tools are used to actually **carry out and facilitate learning experiences** that would otherwise be impossible without the technology itself. E-learning, on the other hand, is essentially the pure **delivery of online content** as opposed to actual ‘doing’.

In E-learning, the focus is on transmission of information via a digital platform, whereas cyber learning uses a digital platform to create a comprehensive technology-based learning experience, wherein students derive their own meaning, understanding, and thus learning.

In the field of education, this is an exciting time to find ways to harness the power of computers and the networked environment to better educate students.

**V. THE E-LEARNING PARADIGM SHIFT.**

In the E-learning environment, the learner and the teacher need not to travel to a common physical location for the purpose of education. They can be away from each other, yet achieving the goal of education through technological means. In E-learning the academic content can be personalized and accessed anytime. It is a learner-centric tool whereby the learner does not have to follow a rigid schedule.

Though the use of E-learning is growing in teaching, there are still certain limitations attached to it. Advancement in E-learning extends further possibilities of learning going beyond traditional way of black board teaching. Easy access to materials, flexible space, time and pace of study and immediate feedback are some of the advantages that make E-learning a fun thing to go. E-learning also helps in increasing the involvement of teachers, learners, parents and other stakeholders in the provision and administration of educational institutions. The sciences, arts, and humanities have converged and diverged in various ways over the centuries. In the area of E-Learning, many interests are in common across the disciplines. It is the pace of adoption that is different. The technical and science streams, and to a lesser extent the social sciences, have been successful in developing the technical, social, and political infrastructure for E-Learning under the rubrics of cyber infrastructure. Cyber infrastructure refers to an infrastructure that enables forms of teaching learning process that are information- and data-intensive, distributed, collaborative, and multi-disciplinary. Cyber infrastructure encompasses the technology, services, practices, and policy that support the teaching learning process and research in all disciplines.

Two major areas for improvement in E-learning are the use of common technology platforms and open access to resources. The latter is being adopted in a big way by institutions of higher education in India and abroad like the IITs and Harvard. MOOCs have become a common platform for E-learning today and are being widely used in Higher Education in India. The NPTEL (National programme for Technology Enhanced Learning) is one such widely used open source learning platform. It is a project funded by Ministry of HRD, Government of India and jointly developed by Indian Institutes of Technology and Indian Institute of Science.

The exponential growth of Internet and smart phones in India has also contributed to the rapid adoption of E-learning. Further the cost of accessing internet has dropped substantially as a result of the entry of Reliance Jio, thereby making internet accessible over a wide geographical area and also to a large section of the population, thereby reducing the great digital divide.
Most Institutions of higher education in India today provide free access to internet via WiFi technology. The Internet and a proliferation of Internet access devices have given students the ability to learn anytime.

VI. RESEARCH METHODOLOGY

A Conclusive Descriptive research will be carried out with the help of a survey using a structured Questionnaire administered online as well as offline.

The sample will include faculty members from various institutions of Higher education, in India, spread across various disciplines. Method of Sampling will be Non Probability-Judgmental.

Analysis will be done with the help of various relevant statistical tools like percentages, averages, Chi-Square etc.

VII. DATA ANALYSIS & FINDINGS

A structured questionnaire was used to collect primary data whereby a total of 180 valid responses were received, which comprised 109 men and 71 women. The data analysis and findings revealed the following facts:

Q.1. Academic Program level in which you teach
(a) UG (b) Graduate and above

<table>
<thead>
<tr>
<th>Academic Program</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total respondents</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG</td>
<td>48</td>
<td>30</td>
<td>78</td>
<td>43.3</td>
</tr>
<tr>
<td>Graduate &amp; above</td>
<td>61</td>
<td>41</td>
<td>102</td>
<td>56.7</td>
</tr>
</tbody>
</table>

43.3% of the respondents were teaching UG courses, while 56.3% were teaching Graduate courses.

Q.2. Type of Academic Program in which you teach
(a) Technical (b) Science (c) Humanities (d) Professional (e) Vocational (f) Others

<table>
<thead>
<tr>
<th>Academic Program</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total Respondents</th>
<th>% of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical</td>
<td>44</td>
<td>26</td>
<td>70</td>
<td>38.9</td>
</tr>
<tr>
<td>Science</td>
<td>18</td>
<td>8</td>
<td>26</td>
<td>14.4</td>
</tr>
<tr>
<td>Humanities</td>
<td>14</td>
<td>16</td>
<td>30</td>
<td>16.7</td>
</tr>
<tr>
<td>Professional</td>
<td>29</td>
<td>18</td>
<td>47</td>
<td>26.1</td>
</tr>
<tr>
<td>Vocational</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>2.8</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>71</td>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

The respondents were teachers from various institutions of higher education. The distribution of types of academic programs in which they were teaching is as follows: 38.9% were teaching technical courses, 14.4% were teaching Science, 16.7% from the field of humanities, 26.1% were teaching professional courses, 2.8% were teaching vocational courses and 1.1% in others.

Q.3. Type of academic institution in which you teach
(a) Government (b) Government aided (c) Private University (d) Affiliated private College (e) Others

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total Respondents</th>
<th>% of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>9</td>
<td>3</td>
<td>12</td>
<td>6.7</td>
</tr>
<tr>
<td>Government aided</td>
<td>10</td>
<td>9</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Private University</td>
<td>22</td>
<td>14</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>Affiliated private College</td>
<td>66</td>
<td>45</td>
<td>112</td>
<td>62.2</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>71</td>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

The respondents were teachers from various institutions of higher education. The distribution of types of institutions in which they were teaching is as follows: 6.7% were teaching in Government Institutions, 10% were teaching in Government aided institutions, 20% were from Private Universities; the majority i.e. 62.2% were teaching in affiliated private colleges and 1.1% in others.

The sample again represents respondents from all kinds of institutions of higher education.

Q.4. Which if the following Electronic Device(s) do you use for instructional practices?
(a) Desktop (b) Smartphone (c) Laptop (d) Tablet (e) E-reader (f) None
The choice of devices used by respondents was as follows: 16.7% of the respondents preferred desktops, the majority i.e. 81.1% used smartphones, 60.6% used laptops, 13.9% used tablets and 6.7% used E-readers, while 11.7% of the respondents did not use any device. Laptops and smart phones were the most widely used devices for instructional purposes. Respondents have selected more than one alternative.

To see whether there was any significant difference in the choice of devices used by men and women a Chi Square analysis was used.

**TABLE 5**

<table>
<thead>
<tr>
<th>Device</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total no. of respondents</th>
<th>% of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desktop</td>
<td>18</td>
<td>12</td>
<td>30</td>
<td>16.7</td>
</tr>
<tr>
<td>Smartphone</td>
<td>84</td>
<td>62</td>
<td>146</td>
<td>81.1</td>
</tr>
<tr>
<td>Laptop</td>
<td>66</td>
<td>43</td>
<td>119</td>
<td>60.6</td>
</tr>
<tr>
<td>Tablet</td>
<td>16</td>
<td>9</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td>E-reader</td>
<td>9</td>
<td>3</td>
<td>12</td>
<td>6.7</td>
</tr>
<tr>
<td>None</td>
<td>12</td>
<td>9</td>
<td>21</td>
<td>11.7</td>
</tr>
</tbody>
</table>

The choice of instructional device among different academic programs. Smart phones and laptops were the most preferred devices by respondents from different academic programs. Respondents teaching vocational courses do not appear to be using E-Learning devices.

**TABLE 6**

<table>
<thead>
<tr>
<th>Type of E-Learning resource</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total no. of respondents</th>
<th>% of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Books</td>
<td>27</td>
<td>19</td>
<td>46</td>
<td>25.6</td>
</tr>
<tr>
<td>Website support of text books</td>
<td>52</td>
<td>41</td>
<td>93</td>
<td>51.7</td>
</tr>
<tr>
<td>Digital Learning platforms</td>
<td>33</td>
<td>41</td>
<td>74</td>
<td>41.1</td>
</tr>
<tr>
<td>Work Sharing apps</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Learning Management Systems</td>
<td>49</td>
<td>24</td>
<td>73</td>
<td>40.6</td>
</tr>
<tr>
<td>Lecture recordings</td>
<td>28</td>
<td>24</td>
<td>52</td>
<td>28.9</td>
</tr>
<tr>
<td>Online discussion forums</td>
<td>12</td>
<td>9</td>
<td>21</td>
<td>11.7</td>
</tr>
<tr>
<td>Webinar</td>
<td>9</td>
<td>7</td>
<td>17</td>
<td>9.4</td>
</tr>
<tr>
<td>Online Journals</td>
<td>60</td>
<td>51</td>
<td>111</td>
<td>61.7</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>None</td>
<td>13</td>
<td>11</td>
<td>23</td>
<td>12.8</td>
</tr>
<tr>
<td>Total</td>
<td>292</td>
<td>228</td>
<td>522</td>
<td>100</td>
</tr>
</tbody>
</table>

Q.5. Which of the following E-Learning Resources do you use for instructional practices?
(a) E Books (b) Website support of text books (c) Digital Learning platforms 
(d) Work Sharing apps (e) Learning Management Systems (f) Lecture recordings 
(g) Online discussion forums (h) Webinar (i) Online Journals (j) Others

**TABLE 7**

<table>
<thead>
<tr>
<th>Type of Device</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total no. of respondents</th>
<th>% of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Program</td>
<td>Deskto</td>
<td>Smarthp</td>
<td>Laptop</td>
<td>Tablet</td>
</tr>
<tr>
<td>Technical</td>
<td>19</td>
<td>66</td>
<td>43</td>
<td>8</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
<td>17</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>Humanities</td>
<td>0</td>
<td>22</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>Professional</td>
<td>7</td>
<td>40</td>
<td>26</td>
<td>12</td>
</tr>
<tr>
<td>Vocational</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>146</td>
<td>109</td>
<td>25</td>
</tr>
</tbody>
</table>

H0: There is no significant difference between the choice of device among men and women.
H1: There is a significant difference between the choice of device among men and women.

Calculated Value of Chi Square = 0.884054
Critical Value at .05 and 5 d.o.f = 11.0705

Since the calculated value is less than the critical value the Null Hypothesis is accepted, hence there is no significant difference in the choice of instructional device among men and women.

**TABLE 6**

The above cross table indicates the choice of instructional device by respondents teaching in different academic programs. 25.6% of the respondents used E Books, 51.7% of the respondents used Website support of text books, 41.1%
used Digital Learning platforms, 5% used Work Sharing apps, 40.6% used Learning Management Systems, 28.9% used Lecture recordings, 11.7 used Online discussion forums, 9.4% used Webinars, 61.7% used Online Journals, 2.2% used Others and 12.8% of the respondents did not use any.

Hence we see that website support for text books, online journals and Digital Learning platforms were the most popular E-Learning resources being used.

Q.6. To what extent do you agree with the statement “Use of E-Learning Technology plays an important role in the teaching learning process”
(a) Strongly agree (b) Agree (c) Neither agree nor disagree (d) Disagree (e) Strongly disagree

TABLE 8

<table>
<thead>
<tr>
<th>Degree of agreement</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total no. of respondents</th>
<th>% of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>69</td>
<td>38</td>
<td>111</td>
<td>61.7%</td>
</tr>
<tr>
<td>Agree</td>
<td>27</td>
<td>22</td>
<td>53</td>
<td>29.4%</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>9</td>
<td>3</td>
<td>12</td>
<td>6.7%</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1.1%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1.1%</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>71</td>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

Q.7. Do you see academic performance tracking technology as beneficial
(a) Yes (b) No (c) May be

TABLE 9

<table>
<thead>
<tr>
<th>Response</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total no. of respondents</th>
<th>% of total no. of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>87</td>
<td>54</td>
<td>141</td>
<td>78.3%</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>6</td>
<td>14</td>
<td>7.8%</td>
</tr>
<tr>
<td>Maybe</td>
<td>11</td>
<td>25</td>
<td>36</td>
<td>13.9%</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>71</td>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

The above table indicates that majority of the respondents agreed that the use of academic performance tracking technology was beneficial in the teaching learning process.

Q.8 What benefits do E-learning technologies provide
(a) Easy accessibility of study material (b) Economical (c) Wide variety of material (d) Authentic content (e) Discussion forums (f) Improved grades (g) Better preparation for lectures (h) Less Stress of teaching (i) Improved ability to handle non-academic work. (j) Creativity (k) Less time consuming (l) None

TABLE 10

<table>
<thead>
<tr>
<th>Benefits of E-Learning</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total no. of respondents</th>
<th>% of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy accessibility of study material</td>
<td>86</td>
<td>49</td>
<td>135</td>
<td>75%</td>
</tr>
<tr>
<td>Economical</td>
<td>59</td>
<td>65</td>
<td>124</td>
<td>68.9%</td>
</tr>
<tr>
<td>Wide variety of material</td>
<td>79</td>
<td>53</td>
<td>132</td>
<td>73.3%</td>
</tr>
<tr>
<td>Authentic content</td>
<td>27</td>
<td>31</td>
<td>58</td>
<td>32.2%</td>
</tr>
<tr>
<td>Discussion forums</td>
<td>11</td>
<td>9</td>
<td>20</td>
<td>11.1%</td>
</tr>
<tr>
<td>Improved grades</td>
<td>26</td>
<td>37</td>
<td>63</td>
<td>35%</td>
</tr>
<tr>
<td>Better preparation for lectures</td>
<td>77</td>
<td>56</td>
<td>133</td>
<td>73.9%</td>
</tr>
<tr>
<td>Less Stress of teaching</td>
<td>31</td>
<td>28</td>
<td>59</td>
<td>32.8%</td>
</tr>
<tr>
<td>Improved ability to handle non-academic work</td>
<td>19</td>
<td>11</td>
<td>30</td>
<td>16.7%</td>
</tr>
<tr>
<td>Creativity</td>
<td>44</td>
<td>37</td>
<td>81</td>
<td>45%</td>
</tr>
<tr>
<td>Less time consuming</td>
<td>23</td>
<td>31</td>
<td>54</td>
<td>30%</td>
</tr>
<tr>
<td>None</td>
<td>14</td>
<td>10</td>
<td>24</td>
<td>13.3%</td>
</tr>
</tbody>
</table>

Regarding the benefits provided by E-Learning resources, 75% of the respondents indicated that it was Easy accessibility of study material 68.9% said that the content was Economical, 73.3% said that a Wide variety of material was available, 32.2% believed that the content was authentic, 11.1% indicated the importance of discussion forums, 35% believed that it helped in improving the grades of students, 73.9% said that it helped in better preparations for lectures, 32.8% believed that teaching with E-Learning resources was less stressful, 16.7% believed that it helped them in handling non-academic work, 45% believed that the teaching process could be made creative with E-Learning resources, 30% believed that use of E-Learning resources helped them in saving time and 13.3% indicated they did not provide any benefit.

Q.8. For what purpose(s) do you use primarily “E-Learning Technologies”?
(a) Instructional purpose (b) Interacting with students (c) Interacting with professors and peers. (d) Access, organise and develop your teaching material (e) Academic Research (f) Assessments and examinations (g) None
TABLE 11

<table>
<thead>
<tr>
<th>Purpose of using E-Learning Technologies</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total Respondents</th>
<th>Total Respondents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional purpose</td>
<td>74</td>
<td>52</td>
<td>126</td>
<td>70</td>
</tr>
<tr>
<td>Interacting with students</td>
<td>36</td>
<td>23</td>
<td>59</td>
<td>32.8</td>
</tr>
<tr>
<td>Interacting with professors and peers</td>
<td>16</td>
<td>26</td>
<td>42</td>
<td>23.3</td>
</tr>
<tr>
<td>Access, organise and develop your teaching content</td>
<td>68</td>
<td>49</td>
<td>117</td>
<td>65</td>
</tr>
<tr>
<td>Academic Research</td>
<td>81</td>
<td>64</td>
<td>145</td>
<td>80.6</td>
</tr>
<tr>
<td>Assessment and examinations</td>
<td>42</td>
<td>31</td>
<td>73</td>
<td>40.6</td>
</tr>
<tr>
<td>None</td>
<td>14</td>
<td>11</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td>Total</td>
<td>331</td>
<td>256</td>
<td>587</td>
<td></td>
</tr>
</tbody>
</table>

The survey indicated that 70% of the respondents used E-Learning Technologies for instructional purposes, 32.8% used it for interacting with students, 23.3% used it for interacting with professors and peers, 65% used it to access, organize and develop teaching content, 80.6% used it for academic research, 40.6% used it for assessments and examinations and 13.9% did not use it.

Q.9. In your opinion which are the greatest impediments in the adoption of “E-Learning Technologies”

- (a) Cost of acquisition
- (b) Unavailability of relevant content
- (c) Students’ hesitation to adopt technology
- (d) Poor Digital Infrastructure in educational institutions
- (e) Lack of support from the top management.
- (f) Difficulty of use.

TABLE 12

<table>
<thead>
<tr>
<th>Impediments in using E-Learning Technologies</th>
<th>No. of respondents (Men)</th>
<th>No. of respondents (Women)</th>
<th>Total Respondents</th>
<th>Total Respondents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of acquisition</td>
<td>63</td>
<td>34</td>
<td>97</td>
<td>53.9</td>
</tr>
<tr>
<td>Unavailability of relevant content</td>
<td>14</td>
<td>11</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td>Students’ hesitation to adopt technology</td>
<td>29</td>
<td>22</td>
<td>51</td>
<td>28.3</td>
</tr>
</tbody>
</table>

The survey indicated that the respondents 53.9% of the respondents believed that Cost of acquisition was the main impediment in using E-Learning Resources, 13.9% of the respondents believed that it was unavailability of relevant content, 28.3% said that it was the students’ hesitation to adopt technology, a large majority i.e.46.1% of the respondents attributed it to poor digital infrastructure in educational institutions, 20% said it was lack of support from the top management and 43.9% said it was difficulty of use.

VIII. CONCLUSIONS

On the basis of the above research, we can conclude that E-Learning resources are not widely used in the Northern part of India, where the survey was conducted; however the usage pattern is growing. The penetration of smart phones and laptops and the availability of E-Learning content have also been instrumental in the popularity of E-Learning resources. However there appear to have been some major impediments in the adoption and use of E-Learning technologies, namely the costs of acquisition in a developing country like India, poor infrastructure and the difficulty faced by students in adopting this new mode of learning.

REFERENCES


Bangladeshi Students and Their Families’ Willingness to Study Abroad and the Factors Those Are Influencing Them

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shiffat8567@gmail.com

Paper ID: ICBM-19-0280

Abstract – The main objective of the research is to get an idea about Bangladeshi students and their families’ willingness for the students to study abroad and the factors influencing them to want to do so. 15 survey questions and 150 in-deep interviews; SPSS was used to study the correlation and the gathering method to categorize the factors which encourage them for studying abroad. A solid link between the demographic factors was found; that the perception of Bangladeshi families and future international students rely on for study abroad, which supporting the patterns identified in the literature review. Based on surveys and former international students’ experience, a guide for the challenges of study abroad will be provided. There are small percentage between the number of interviews and the number of questionnaires.

Keywords – Career Opportunities, Personal Development, Life Experience, Economic Education

I. INTRODUCTION

Studying abroad is when a student agrees to pursues his/her studies in an overseas country rather one’s own. There are significant numbers of returns of studying abroad for students as they get to experience a new culture and have many more chances in terms of knowledge, research and work if they are in a more developed country. Studying abroad for Bangladeshi students has gained a lot of popularity in recent times. However, there are many issues those pursue to influence the students about study abroad. To some extent guidance from people sharing the same experience is valuable and should be taken into account.

II. METHODOLOGY

METHODS OF RESEARCH USED:
A descriptive research was done on the respondents to evaluate their willingness to study abroad and what factors influenced them

SOURCE OF INFORMATION:
Both primary and secondary sources of data were used in this research

Secondary data:
The secondary data for this is research was collected form journal papers and conference papers. These have relevant information which was derived from the respective researches.

Primary data:
Survey method was to reach primary data. An online survey was done to collect the data required along with some face to face surveys which was later put as input into IBM SPSS. Most of the data was collected from students while some of them had other professions. A total of 150 respondents were taken which including people from under 18 years old to over 46 years old and all in between.

RESPONDENTS AND SAMPLING PROCEDURES:

Population:
The population I chose was from an age of below 18 to over 46 years but most of them were from the younger age group. The population was all from Dhaka since I didn’t have enough resources or time to take a survey for the whole of Bangladesh. I also choose a group which had proper internet access and were active on social media.

Sample:
The sample number of the population was 150 and non-probability sampling was used due to time constraints.

RESEARCH INSTRUMENTS/QUESTIONNAIRE:
The types of question I used among our 15 questions were
- Likert Scale
- Nominal Scale
- Interval scale
- Ordinal scale

I have created close ended question based on these types of measurement scales. In Likert scale questionnaire, categories such as “strongly disagree to strongly agree” were present. I also used single questions where the respondents answer to either “Yes” or “No”.

COLLECTING DATA:
The data was primary collected through google doc forms and some face to face surveys. The process was through self-administered questionnaires were in the form. The information was later put as an input into IBM SPSS to evaluate the information.
STATISTICAL TREATMENT OF DATA:
I used google docs and IBM SPSS to do properly analyze the collected information. I collected all the data from Google survey forms and input the data of 150 respondents into SPSS. Through the SPSS arithmetic mean, standard deviation and reliability analysis has been done.

III. RESULTS

A. FIGURES AND TABLES

The Graphs and statistics are showing the results of the SPSS. I will give a short description of each diagram below.
It showed that maximum families, around 74% have an income 315000 to 150000 which is partially average middle class income.
Most of the students of Bangladesh want to pursue abroad degree are for Post-graduation. 66% of 150 respondents want to go for Post-graduation.
Most students around 54% desire high standard lifestyle further and other students want better job security in home country. These are the reason they desire to study abroad.
22% strongly agree and 54% respondents agree that the ranking of the universities do matters for abroad study.
The sources of information are also a major factor due to being deceived by the fake agencies.
The sources of information are also a major factor due to being deceived by the fake agencies.

TABLE I

Graphs
Statistics
Approximately what is your income or your family income per month?

<table>
<thead>
<tr>
<th>N</th>
<th>Valid</th>
<th>150</th>
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<tbody>
<tr>
<td>Mean</td>
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<td>.495</td>
<td>Std. Deviation</td>
<td>.245</td>
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<tr>
<td>Minimum</td>
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<td></td>
<td>Maximum</td>
<td>4</td>
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</table>

TABLE II

Which degree do you want to pursue?

<table>
<thead>
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<th>Frequency</th>
<th>Valid Percent</th>
<th>Percent</th>
<th>Cumulative Percent</th>
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<tr>
<td>UNDERGRADUATION</td>
<td>56</td>
<td>23.1</td>
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<tr>
<td>POSTGRADUATION</td>
<td>99</td>
<td>63.5</td>
<td>66.0</td>
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TABLE III

Approximately what is your income or your family income per month?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20001-35000</td>
<td>9</td>
<td>5.8</td>
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<tr>
<td>35001-50000</td>
<td>111</td>
<td>71.2</td>
<td>74.0</td>
</tr>
<tr>
<td>ABOVE 50001</td>
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<td>19.2</td>
<td>20.0</td>
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<tr>
<td>Missing</td>
<td>System</td>
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<tr>
<td>Total</td>
<td>152</td>
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</table>

TABLE IV

TABLE V

Which factors actually motive you to study abroad?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BETTER JOB IN FUTURE AT HOME COUNTRY</td>
<td>18</td>
<td>64.6</td>
<td>36.0</td>
</tr>
<tr>
<td>PART TIME WORK FACILITIES</td>
<td>3</td>
<td>10.0</td>
<td>46.0</td>
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</table>
TABLE IV
Statistics
Which factors actually motive you to study abroad?

<table>
<thead>
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<th>Valid</th>
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</thead>
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<tr>
<td>Mean</td>
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<tr>
<td>Std. Deviation</td>
<td>0.941</td>
<td></td>
</tr>
<tr>
<td>Variance</td>
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<td></td>
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<tr>
<td>Minimum</td>
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<td></td>
</tr>
<tr>
<td>Maximum</td>
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TABLE VI
Statistics
The ranking of university matter to study in abroad?

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<td></td>
</tr>
<tr>
<td>Maximum</td>
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<td></td>
</tr>
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</table>

TABLE VII
The ranking of university matter to study in abroad?

<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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</thead>
<tbody>
<tr>
<td>STRONGLY AGREE</td>
<td>33</td>
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<td>22.0</td>
</tr>
<tr>
<td>AGREE</td>
<td>81</td>
<td>51.9</td>
<td>54.0</td>
<td>76.0</td>
</tr>
<tr>
<td>NEUTRAL</td>
<td>27</td>
<td>17.3</td>
<td>18.0</td>
<td>94.0</td>
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<tr>
<td>DISAGREE</td>
<td>3</td>
<td>1.9</td>
<td>2.0</td>
<td>96.0</td>
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<tr>
<td>STRONGLY DISAGREE</td>
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<td>Total</td>
<td>150</td>
<td>96.2</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

TABLE VIII
Which source do you think appropriate for you to get information about your desired University?

<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIVERSITY IBISITE</td>
<td>96</td>
<td>61.5</td>
<td>64.0</td>
<td>64.0</td>
</tr>
<tr>
<td>AGENTS OF DIFFERENT UNIVERSITY IN HOST COUNTRY</td>
<td>12</td>
<td>7.7</td>
<td>8.0</td>
<td>72.0</td>
</tr>
<tr>
<td>RELATIVES</td>
<td>62</td>
<td>36.9</td>
<td>28.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>96.2</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing</td>
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<td>1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
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</table>

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TABLE IX
Reliability Statistics

<table>
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<tr>
<th>Description</th>
<th>Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>0.640</td>
<td>0.663</td>
<td>15</td>
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</table>

TABLE X
Case Processing Summary

<table>
<thead>
<tr>
<th>Cases</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>150</td>
<td>96.2</td>
</tr>
<tr>
<td>Excluded a</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>100.0</td>
</tr>
</tbody>
</table>

B. References from previous studies

In recent years, studying abroad has increased rapidly (Alghamdi & Otte, 2016). In Bangladesh, the student who wants to pursue higher studies in abroad is increasing day by day. In Bangladesh, the most popular choices for higher studies abroad are the United States, Canada, Australia and the United Kingdom. However, of late people have taken a liking towards some very good universities in Asian countries - Singapore, Malaysia, India, Japan and Hong Kong. The choices for destinations depend on several factors, the most important being the choice of the university itself, which is mostly decided by the University's ranking, course rating and also the tuition fees and living expenses (Khan, 2015). However, when in terms of the students of Dhaka, Bangladesh, the young generation is mostly eager to pursue their higher studies in abroad. At initial data mining I found various newspaper articles, journal papers and conference papers about student interest towards higher studies in abroad. At add, The United States of America embassy informed Y&I via email that there are nearly 8,000 Bangladeshi students studying in the ME last year (iraj, 2017) and other more than 15,000 students are doing their higher studies in other countries like UK, Australia, European countries and Asian countries. Upon further research, I found that several study conducted on overall student interest towards higher studies in abroad. The survey was conducted by non-probability sampling technique because the exact population size was unknown and the accessibility of the customer was not so easy because I wanted to ensure more sample was there. In study, I found out that, students are mostly want to get post-graduation degree which is 66%, 24% are interested for under graduation and others like the PhD is 10%. However, the ranking of the university matter to study in abroad is, strongly agree 22%, agree 54%, neutral 18%, disagree 2% and strongly disagree is 18%. Here, the students who had choose agree the most is higher because the family income level of the students is 315001BDT-1500000BDT is 74%, above 150001BDT is 20% and 20001-315000BDT is 6%. Another important factor is, the gender percentage is, female 38% and male 62%. According to the students, the source they think appropriate in get information is university Website 64%, relatives 28% and university in home country is 8%. Moreover, the factors that motivate the students to pursue higher studies in abroad is, better job opportunity in home country is 36%, part-time work facilities is 10% and high standard life style is 54%. Using this research survey as guide, I set out to find the current situation of student’s interest towards higher studies in abroad and in my research I have tried to find the students of Bangladesh are enforced by some factors to pursue higher studies in abroad.

C. Abbreviations and Acronyms

IELTS elaborated as International English Language Testing System, GMAT as Graduates Management Admission test, GRE- Graduate Record Examination, Test Of English as a Foreign Language (TOEFL) and SAT elaborated as Scholastic Aptitude Test

D. Other Recommendations

For the recommendations on basis of research for the interested students for higher study of Bangladesh are given below:

1. **Peer influence**: Bangladeshi students follow others during selecting university and countries. Whereas, they should justify, according to their needs and demands.

2. **Avoid fraudulence**: Most students are really relying on agents and other anonymous mediums which might be the deceitful one. Who might do blunder with the papers and documents. So they should be verified the actual source for authentication about university admission.

3. **Acquiring international degrees and publish different journal papers**: Students should focus on acquiring different international degrees like IELTS, GMAT, GRE, SAT, TOEFL and publish different journal papers, conference paper which are very renowned as global, before applying different universities in abroad. These degrees and papers really help student’s better opportunity up to 80% to 100% scholarship and easy work permit.

4. **Dream high** (Disney) says, “All our dreams can come true, if I have the courage to pursue them.” So there might be discourages, obstacles and barriers on doing abroad education. But then again, I should face for higher education.

5. **Occupation & income**: Before selecting abroad universities people need to consider their income of and afford abilities. If someone has a family income of 300000BDT, but he is planning to go
that university which per month cost will approximate 150000 BDT. This could impact their regular life.

These are the recommendations which should followed by the Bangladeshi students when they consider to go abroad study further.

IV. DISCUSSION

These are the observations and recommendations which will impact for the students who are dreaming to go for higher studies in abroad. Further research needed to be conduct for giving better recommendations. Since, it has done only on 150 respondents and there was time shortage while conducting research.

V. CONCLUSION

The topic “Study in abroad” is very common in a student’s life. There are few decisions that have more of an impact on a student's life than their university/college selection choice. The sobering reality facing students today is to find a suitable course with a competitive fee from a well-known reputed university or college. In my survey, I tried to find out some statistical answer regarding this broader topic. From the perspective of our country, financial decisions and regarding the college or university selection process plays a vital role for further higher study. In assessment, I tried to find out the best result that matches overall current condition of students. After analyzing the survey it can be said that most of the young people who have completed under graduation, would like to go abroad for higher study as they think, this decision will bring them better lifestyle and job facilities.

REFERENCES

Consumer Behavior and Psychological Factors, towards Purchasing Smartphone of Bangladeshi Consumers

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shiffat8567@gmail.com

Paper ID: ICBM-19-0281

Abstract – The main objective of the research is to find out the Psychological Factors, towards Purchasing Smartphone of Bangladeshi Consumers. For Methodology/approach-quantitative methods I have prepared 12 questionnaires and 100 in-depth interviews; Microsoft Excel was used to evaluate the relation and the collection method to classify and identify the psychological Factors. Intended for findings of the research mostly young consumers generally are greater target market and the factors that actually influences them, during purchasing smart phones. Based on former smart phone purchaser’s experience, related recommendation including the challenges of consumer behavior and psychological factors are given. Also, the small ratio between the number of interviews and the number of questionnaires exist.

Keywords – consumer behavior, smartphone, social factors, personal factors, smartphone users, smartphone use.

I. INTRODUCTION

We are living in the era of technology where the products are manufactured targeting consumers and their satisfaction Consumer behavior is the study of human behavior where I have found many important factors which directly or indirectly influence the customers to buy a product. Bangladeshi people are very much particular about buying their smartphones. They consider many factors before buying a smartphone where personality plays an important role. Some people choose globally renowned brands like iPhone, Samsung etc. which cost high but goes with their ideal social image, on the other hand some people goes with less specified brands like Symphony, Walton, Xiaomi etc. which are comparatively cheaper. At the same time many Bangladeshis has exploratory purchase behavior; they switch brands often to experience new features with new brands. Some people follow inner directedness, they prefer their own choice. On the other hand, some follows other directedness, cause they follow the trend, or take decision by observing others and rely on other’s opinion. Some Bangladeshis also go for Product-specific goals; they select specifically branded products or services, like buying an iPhone. So, from the study it is clearly noticed that Bangladeshis has different consumer behaviors.

II. METHODOLOGY

METHODS OF RESEARCH USED

Data Collection:
For the purpose of making this assignment a success, I have used both:
1. Primary data &
2. Secondary data

Primary Data:
The main source of primary data is the questionnaire where I have included 12 survey questions and collected the answers from respondents. Then I made a Google form that is consisted of those questions and gave the link of those questionnaire to the people from different age groups via Facebook, email and face to face as well. Besides, I have got response from 100 people in this short span of time. After collecting the answers and analyzing it thoroughly find some outcomes of the research.

Secondary Data:
On the other hand, I have also collected some information browsing from journals and scholars that are inter-related with the topic. The secondary data helped me broadening knowledge & views on the topic.

Sampling:
I have used Simple Random Sampling Method. Total respondents were 100 who were from different age groups. Since, total population is unknown to me for the research.

COLLECTING DATA:
The data was primary collected through google doc forms and some face to face surveys. The process was through self-administered questionnaires - in the form. The information was later put as an input into Microsoft Excel sheet to evaluate the information.

STATISTICAL TREATMENT OF DATA:
I used google docs and Microsoft Excel to properly analyze the collected information. I collected all the data from Google survey forms and input the data of 100 respondents into Microsoft Excel.
III. RESULTS

A. FIGURES AND TABLES

**Fig. 1:** The satisfaction level of the current Smart phone users.

- Satisfied: 72%
- Dissatisfied: 8%
- Neutral: 20%

**Fig. 2:** Which Brand currently they use.

- iPhone: 20%
- Samsung: 15%
- XiaoMi: 14%
- Huawei: 13%
- Walton: 12%
- Symphonи: 10%
- Oppo: 9%
- 1+ : 6%
- BlackBerry: 3%
- Google Pixel: 3%
- Sony: 2%
- We: 2%
- Nokia: 1%
- Posh: 1%

**Fig. 3:** The factors that motive most, while purchase smartphones.

- Basic features (Phone call & communications): 30%
- Camera: 19%
- Showing off tendency: 13%
- Gaming efficiency: 10%
- Battery capacity: 8%
- After Sales Service: 7%
- 3%

B. References from previous studies

Mostly people purchase the smartphone for their personal consumption. Usually they buy for their own use or as a gift for their family members or dear and near ones. So, distinct consumer behavior has an impact on sales. For example, I might want to give a smartphone as a gift to my sister. I will choose one of the smartphone brands which includes the significant features of a smartphone. Along with that it needs to have a brand value. Moreover, a little fancy could be suitable option for smart phone as well. By getting primary research we have seen every customer purchased smartphone for their personal consumption.

Marketing Concept:

Mostly now the brands are aware of the needs and the customers demand. They have conduct different research methodology like primary and secondary, targeting, market segmentation, and positioning about the brands. After that they go for launching brands.

Customer Research: Over here marketers do research on primary data and secondary data that whether Bangladeshi
people have the desirability means the established need belonged or not. Along with that they ask for several questions that indicate they have the product demand that means the purchasing power or not. For example, Bangladeshi people has desirability for Blackberry phone, contrarily most people do not have the purchasing power for that exclusive brand.

**Segmentation:** The purpose of segmentation is the concentration of marketing energy and force on the subdivision or the market segment to gain a competitive advantage within the segment. Basically, dividing the market, into subsets according to the needs, wants and demands of phone users are determining segmentation. They will then segment according to the market into groupings such as:

- Age
- Sex
- Income
- Lifestyle

By segmenting the market the smartphone marketers will then know which brands need to be brought in the store.

**Positioning:** In Bangladesh mostly Samsung has overwhelmed customers’ mind with their positioning. Just because of the reasonable price, availability and after significant sales service.

These are the factors identified from market research for smartphone users brands.

Successful Relationship with the consumers of different brands:

- By conducting primary research, (in Fig.1), it is found that around 72% of the smart phone users are satisfied with their current smartphone. 20% are not whereas 8% could be varied.
- So we can assume from our personal research that customers fall under apostles, defectors, terrorists and mercenaries. Most people who are satisfied with their brands recommend to others to use not only the brand also the version of the brand. Also some people fall under defectors who usually move to brand to brands. They prefer to experience different brands as per judgement. On the other hand, some people ask their friends not to use specific brands because of the difficulties. Moreover, the mercenaries are the maximum of number about the smartphone users. They use the brand but if they get better option they would not avoid switching from the brand.

**Acquired Needs:** Purchasing smartphone always fall under acquired needs, consists of the psychological factor and considered as secondary need. The need of the smart phone is created. Now a day’s people take it as a complementary need. For example, without a social media and selfie camera we take our day as an incomplete one.

Product specific goal denoted that most customers purchase the phone according to the brand basis.

Sometimes people purchase repeatedly from their personal experience.

Most importantly they bargain smartphone rationally rather emotionally. From our survey most of the customers are choosing brand based on the basic features like call dial, receive, Ram, Rom, camera and other features rather than showing off tendency.

Among arousal motives Bangladeshi people use cognitive arousal. Most of the customers have done research before purchasing smartphone. The Ram, Rom, Camera pixels, Basic services and gaming efficiency are studied in advance. Also one researcher says, the most utilized application software is music player, calendar, picture viewer, and video player [3]. Moreover, GPS, dictionary, and games received moderate attention in the utilization.

In psychological research it is also founded that on basis of Alfred Alder’s lifestyle and compliant from Karen Horney’s personality theory people buy smartphone [4]. According to Horney, people wanted to be loved, appreciated, and focused. Therefore, we, the humans, used to show these kinds of behavior. The survey also showed that Bangladeshi people are motivated by other directedness and inner directedness in addition.

**Grouping:** Grouping is a major factor of purchasing smartphone. There are a lot of people in Bangladesh who wanted to be a part of different brand community. For instance, in Facebook there is a group of iPhone Community. Not only in virtual life, in real life also have they wanted to belong to a specific smartphone brand group.

**Brand Personality:** Diverse brands have their own significant personality. For example, iPhone The Apple brand personality is about lifestyle; imagination; liberty regained; innovation; passion; hopes, dreams and aspirations; and power-to-the-people through technology. Oppo is mainly named as camera phone. Besides, Samsung announce them that it inspires the world and it creates the future. Bangladeshi people are found their equivalency with brands of smartphone and go for getting.

**Perceived Price:** Bangladeshi people use both Internal pricing and external pricing while purchasing phone. They usually talk to people and compare previously purchased phone which designates internal pricing. On the other hand, Bangladeshi consumers usually observe the competitors price of a brand, with the same features. From a survey of one to one communication we got this finding.

**Perceived Quality:** Most of the perceived qualities of Bangladeshi people are purchase according to both intrinsic value and extrinsic value. For this perceived quality in intrinsic concerns they mainly focus on the battery capacity, maybe the size, camera, touchscreen flexibility, sometimes color is also determined for purchasing. On the other hand, extrinsic concerns
considered the brand name of the phone, reputation and the availability of the showroom.

**Importance of learning:** Among the behavioral learning, instrumental knowledge is more effective for the brand. A person wants to touch the phone and have a trial before purchase. For that reason each and every brand keeps trial section in the front of the showroom. Similarly, after sales service is important, like warranty, guaranty and extra services.

**Tri-component Model:** Tri-component model is the grouping of models which attempt to understand the relationship between the behavior of Bangladeshi people attitude and behavior. Among those 3 models, cognitive and conative are accepted for smartphone.

- Cognitive model: People who already have experienced purchasing a brand and became loyalist falls under this model. They already believe that the brand they using are superior to others.
- Conative model: Usually people who have the tendency to purchase from a specific store a specific brand fall under this model. Generally, the behavior of the salesperson and extra value gaining believes make them under this category.

These are the findings I have gotten from my studies for Bangladeshi Smart phone users follow these psychological behaviors while purchasing Smart phones.

**C. Other Recommendations**

During the analysis of understanding the psychological and consumption behavior of Bangladeshi about smart phones I found a lot of positive responses. However, there are a lot of limitations as well, considering of doing promoting different brands of smart phones. The recommendations on basis of research for the smart phones brands are given below:

1. **Brand image:** Total quality for their significant brands and the versions of different phone should be focused. For example, the Samsung has reputed brand value, but in 2017 they faced a crisis with Note 7 which impacted the overall brand image [1]. So brands should maintain the quality control.

2. **Price maintain:** Secondly the price of the brand should be comparatively related with the previous prices and their brands. Also brands should maintain the price floor.

3. **Advertisements and offers:** Sometimes, brands provide different types of invalid and illogical, advertisements and offers which might increase the sales for a short term but in the long run they might face brand value scarcity.

4. **Features and technology:** The features and the uses of technology should be simple. As Bangladeshi people always prefer the comfort zone when using technological goods.

5. **Income of consumers:** Brands should offer the price of phones according to the income level of Bangladeshi people. In the research most of the respondents were students. They prefer the smart phone price to range between 15000BDT to 25000BDT, so brand should offer their product among these prices.

6. **After sales servicing:** Brands need to offer after sales services. Since, it is very important to convert a potential customer to loyalist. Bangladeshi people emphasize on guaranty and warranty while purchasing the products.

Recommendations on basis of research for the consumers of Bangladesh brands are given below:

1. **Peer influence:** Bangladeshi people follow other directedness before purchasing the brands. Whereas, they should justify, according to their needs and demands.

2. **Post purchase valuation:** Bangladeshi people are really relying on post purchase evaluation now-a-days. Social media reviews are most effective way to provide the evaluation. So it might impact other customers while choosing any brands. For that reason Bangladeshi people need to give a proper evaluation.

3. **Occupation & income:** Bangladeshi people need to consider their income and afford abilities before purchasing of a smart phone. If someone has an income of 30,000BDT, but he is using the smart phone of 50,000 BDT. This could impact their regular life.

4. **Avoid too much Comparison:** Before purchasing people need to avoid too much comparison among brands. From different personal experiences and research people usually becomes confused. After that they become frustrated among brands. It is the negative vibe and impactful psychological behavior.

These are the recommendations for both purchaser and sellers of the Smart Phones of Bangladesh.
IV. DISCUSSION

These are the observations and recommendations which can have an impact on the Bangladeshi consumers and existing brands for sustaining in the market. Further research needs to be conducted for giving better recommendations.

V. CONCLUSION

After finishing this research, the author explored valuable facts about behaviors of consumers during the time of buying mobile phones in Bangladesh. The author has found that most of the smartphone users are young. On that note one researcher said, they have different perceptions on choosing their brand based on several issues including price, configuration, processors efficiency, brand value and so on [2]. Besides level of income, standard of living, occupation also plays a vital role to determine the most suitable smart phone brands for different persons. Different brands have their different target markets based on our local customer’s buying behavior.

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Social Impact of App-based Service: A Study Based on URAL EMS

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Abstract – The basic function of the mobile app is to fulfill people’s needs via the Internet. Apart from this basic function, the mobile app has already started introducing some diversified areas with the help of its virtual manner. Mobile technology is presently providing various cheap solutions in people’s daily life. The traditional thinking of connecting people through mobile phone is far behind in comparison with the present scenario. Information technology enables software companies to provide economic solutions with a very cheap and easily available access, which was earlier not accessible to some extent. As a result, there is an increasing number of app-based service in the market. The study aims to find out if these increasing number of app-based service is really beneficial for our social development. In this regard, this study revolves around a particular new app-based service, URAL EMS, and if it can create any social impact or not.

Keywords – App, Ambulance, Healthcare, Innovation, Impact, Smartphone, Social

I. INTRODUCTION

WOADEC Limited is a dynamic software solution provider. It started its journey in 2017 in Bangladesh. URAL EMS is an original product brand of WOADEC Limited. First time in Bangladesh, URAL EMS introduced a convenient and simple emergency medical service platform. It is a location-based service that makes hiring an on-demand ambulance easy from mobile or computer. URAL EMS aspires to create a new ecosystem in the medical emergency service. It aims to reduce sufferings of the patients and their families significantly by fair and expedient communication and access system. All patients and attendants will hire an ambulance instantly from their smartphone. They will feel comfortable and trust URAL’s a uniform and reasonable fare rate all across Bangladesh. On the other side, hospitals will receive early notifications of patients’ arrivals. Life-critical patients will arrive at hospital emergencies in a single trip. No hopping around from hospital to hospital in search of a vacancy in an emergency in the final hours. This study proposes to investigate if it can really make a major breakthrough in the emergency healthcare industry. If so then how much and in what way app-based services such as URAL EMS can contribute to the societal development. Finally, some recommendation was made that URAL EMS can implement for improvement.

II. METHODOLOGY

The study is conducted in a systematic procedure. The integral part was to identify and collect data; they were classified, analyzed, interpreted and presented in a systematic manner to find the vital points. Primary Data was derived from the practical observation and archival research. Moreover, the survey data collected from 50 random people also helped me to get information directly from the market. The survey helped me in both deriving the information and also explaining the social impact of URAL EMS. Secondary data was collected from WOADEC and URAL EMS websites and other related websites and documents. Some diagrams were used in this report for analyzing the collected data and to explain certain concepts and findings more clearly. The help of Google Analytics derived the diagrams. Moreover, the collected data were analyzed more precisely. In the case of survey research, the sample size was quite small as it was not possible to analyze large sample due to time constraint. The duration of my work was only three months. But this period of time is not enough for a complete and clear study. Some assumptions were made because of the limitation of information. So, there may be some personal mistakes in the paper. Although there were limitations, I tried to give my best effort to furnish the paper.

III. DISCUSSION

A. OPEN INNOVATION

The term “Open Innovation” has numerous implications just as the Eskimos have several names for “snow”. According to Henry Chesbrough, “the open innovation paradigm can be understood as the antithesis of the traditional vertical integration model in which internal innovation activities lead to internally developed products and services that are then distributed by the firm.” He defines the vertical integration model as a closed innovation model. Another term of open innovation expands on the idea of open-source software that ignores the business model and takes no account of the concept of false negative projects. Although Chesbrough argues that one should have legitimate routines and business model to empower the open innovation process, both of the perspectives share the understanding that being open is a ground-breaking generative instrument to start a great deal of innovation. Thought of how innovation happens in
services is a more recent improvement. In some cases, business model is changing that can turn a product business into a service business. Particularly in services, innovation needs to deal with a tension between standardization and customization. Spreading the fixed costs over many exchanges, Standardization enables exercises to be rehashed ordinarily with incredible proficiency. Customization guarantees high personal fulfillment by enabling every client to get what s/he needs. The problem is that standardization denies custom needs of the customers whereas customization undermines efficiency. The solution to this problem is to construct service platforms. These platforms permit economies rising up out of the standardization by welcoming others to expand on its own contributions along with customization made by the additions of other parties. “Not all smart people work for you”, which means that there’s more value in making the architecture that links technologies together in useful ways to solve real problems than there is in making yet another technological building block, is a primary premise for open innovation. A business model designed to allow customers, developers and other parties to create business models that work for them, even while the business model works for the platform creator, which can motivate those third parties to join the platform is an essential necessity for the success of that platform. In this way, their activities and investment make the core business more significant. Open innovation has become a new way of organizing innovation that assumes that organizations should utilize outside and inside thoughts and ways to market. It joins inside and outside thoughts together into frameworks. This is the eventual fate of open innovation that will be all the more captivating, broad and communitarian with an assortment of members.

B. Fourth Industrial Revolution and Dynamic Economy

Klaus Schwab, the president of World Economic Forum (WEF), mentioned the Fourth Industrial Revolution as a disruptive innovation in 2016. Disruptive innovation refers to the idea that our models and values are replaced with new ones. In this era, the world has turned into the appearance of a hyper-associated society that is adjusting to different segments, for example, drug, transportation, fabricate, transportation, and training, bringing about a creative change in the current procedures. A new business model, such as a sharing economy, is proceeding to develop. It is conceivable to make transactions that were unrealistic in the past by utilizing the Internet of Things (IoT) and location-based big data. Additionally, this kind of sharing economy, such as Uber and Airbnb, is becoming more easily implemented on account of their base marginal expenses. A sharing economy can be characterized as a financial action in which an element isn’t acquired however obtained. With the emergence of those technologies, it is expected that the technology will complexly combine value chains destroying the sequence of the current value chain, which is going to change the industrial ecosystem completely. It will annihilate the barriers of the existing businesses and have a huge effect on upstream and downstream industries. Humans were closely connected with computers and machines to make production automation in the Third Industrial Revolution. However, computers and machines are communicating independently and interactively along with humans in the Fourth Industrial Revolution. This revolution is different than the previous one in terms of speed and range. The expectation is that it will increase the creation of demand, that is, new businesses, brought about by new technologies. In other words, convergence with new technologies is expected to construct new markets and jobs. This revolution is defined as a technological revolution that fuses digitalization based on the previous revolution. It seems that the most promising technology is the necessary based and service technologies using cyber-physical systems. New business model creation along with accumulation of big data and its advanced utilization can make the arguments of market-driving more suitable and the accuracy of demand articulation more enhanced. It is expected that the demand for sensors that link people, things, and spaces, as well as platforms that share and utilize a lot of information and data will increase rapidly. According to many experts, the source of competitive edge has shifted from “economy of scale” to “economy of scope” to “economy of expertise” to “economy of convergence”. The digital, physical and biological sectors should be actively converged to implement the dynamic economy. We should open the possibility of building new values through convergence. Digital technology was a target for convergence in the past. In contrast, technology will be expected to be the catalyst to boost creative convergence in the future. Many instances, such as Data-based retails system and E-commerce, indicate that the “creative destruction” mentioned by Schumpeter actually happens. A combination of exploitation, that is using a well-known thing, and exploration, that is exploring an unknown thing, is the new convergence innovation strategy. Now-a-days, a customer may be someone who does not physically experience products or services. Even the potential customers are also included in the category of customers. In the long run, the new advancements (IoT, artificial intelligence, AR) will make a blue ocean with a blend of expulsion, decrease, development and inventiveness, and further, innovation activities of receptiveness and convergence for opening a new ecosystem.

C. Disruptive Innovation in Healthcare Delivery

The theory of disruptive innovation clarifies how confounded, costly items and administrations are eventually changed over into less difficult, reasonable ones. A significant number of the most incredible disruptive innovations that disrupted different businesses did as such by empowering a bigger populace of less-talented individuals to do in a more advantageous, more affordable setting things that historically could be
performed just by costly authorities in concentrated, inconvenient locations. Disruptive technologies have been one of the crucial components through which the nature of our lives has improved. The disruption left consumers much better off than they had been. The healthcare industry today is endeavoring to save antiquated establishments. The time has come to make new associations to do the disrupting. The historical backdrop of disruptive innovations discloses to us that those establishments will be supplanted, soon enough, with new organizations whose plans of action are suitable to the new technologies and markets. An effective disruptive revolution of this framework will unfurl all the more rapidly, and far less horrendously for everybody, if pioneers at provincial and national dimensions cooperate—not to manage the current framework but rather to organize the expulsion of the obstructions that have kept disruptions from occurring.

D. Digital Bangladesh and Healthcare Ecosystem

Honorable Prime Minister, People’s Republic of Bangladesh, had declared a vision of making digital Bangladesh back in 2008. Over the last ten years, A steady progress has been seen towards that goal and it can be anticipated that this rise will continue to grow even faster in the upcoming decade. In recent years, uses of the smartphone have been increased significantly. As a result, services based on mobile app have begun to get popular among the common people of Bangladesh. It has been seen how Pathao and Uber gained an immense impact on the public transportation system. In addition, it has been noticed how they improved the lifestyle of the people of Bangladesh and thus created an overall positive perception among the people on mobile app-based services.

A research indicated that ambulances are least popular emergency service in Dhaka. The findings of that research suggested that Ambulance services are least frequently accessed by patients in need of emergency medical services in Dhaka. A report by The World Economic Forum (WEF), in collaboration with the University of Toronto, suggests that only 8% of patients accessed ambulances during a three-week study period by researcher Justin Boutilier. The most popular mode of transport is the rickshaw, which was used about 34% of the patients in Boutilier’s study. The CNG was used by 25% of the patients. Boutilier, a Ph.D. candidate in industrial engineering at the University of Toronto, further recorded that ambulances are also the most expensive service. Ambulances also have a long response time, which defeats the purpose of its existence. Justin Boutilier’s another research stated that Ambulance services in Dhaka are currently decentralized, meaning there are both private ambulance service providers, which are for-profit businesses, and ambulance fleets that belong to hospitals. Both types of organizations are incentivized to increase the number of patients transports they make but lack appropriate decision support tools to optimize their operations. For example, hospitals do not currently strategically pre-position their ambulances in the city, but rather position their entire fleet at the hospital. Until recently, contact information for these services was also decentralized and unique to each provider, providing significant access challenges for patients.

Another research on Ad-din Ambulance service reveals that the surprising expense and absence of accessibility of transportation can present critical boundaries to laboring ladies needing skilled care around the globe. In thickly populated urban conditions, transportation issues stay intense, in spite of the universality of vehicles. In this regard, Ad-din’s initiative was to make an internal ambulance network utilizing the Cell phone and GPS innovation. The fact that the overwhelming majority of customers who utilize ambulances to reach Ad-din Hospital are obstetrics and gynecology patients affirms that Ad-din’s service is to be sure benefiting those it was intended to serve. Ad-din keeps on developing and reinforce the rescue vehicle program with the goal that expeditious access to healthcare is progressively accessible to all, including ladies in danger of building up an obstetric fistula.

Now, let’s move to story. Sultana Begum was losing her patience. With her husband on a trolley, she was waiting for an ambulance at the Dhaka Medical College Hospital’s gate since around 11:30 am. Her husband Md Awal was admitted to the hospital five days ago with a problem in his spinal cord that has made him almost paralyzed. Awal needed to have a pathological test done at a private hospital in Dhanmondi. There was no ambulance at the DMCH gate. “It’s been two hours already, but I don’t find any ambulance,” said the hapless woman, aged about 30, from Khulna. Frustrated, Sultana hired a CNG-run auto-rickshaw to take her husband with the saline bag attached to his hand.

Two men were sentenced to six months in prison by a mobile court for trying to stop an ambulance at the DMCH. Sarwoer Alam, an executive magistrate of Rab, said, “We heard that a patient died at the DMCH. The patient’s relatives hired an ambulance from outside the DMCH to carry the body to Sirajganj. But two brokers of private ambulance services barred the ambulance from entering the DMCH.” Still, the ambulance driver managed to enter the hospital premises to carry the body. “The two brokers then tried to stop the ambulance. A Rab team saw the incident and informed me about it. I then sentenced the two,” he told.

These two incidents are true. These stories can illustrate exactly how much sufferings patients of Bangladesh are facing on a regular basis. These sufferings occur primarily because of inadequate ambulances, insufficient communication system, the existence of syndicates and brokers, inaccurate pricing and the existence of harassment by law enforcement (traffic police) as well as political parties. Ural EMS started its journey with a goal of creating such an environment in the emergency service sector of Bangladesh that can reduce these sufferings of the patients and their families significantly by developing a sound communication and access system all across Bangladesh using a mobile platform.
IV. RESULTS

A. People Survey

This is the primary survey for this study. It contains both qualitative and quantitative questions. It starts with personal information fields such as name and contact information. Afterward, the questions are as follows:

- The first question is about Ambulance Response time.

From the above diagram, we can see that 42% of people said they get an ambulance within 30 minutes. 38% of people said they get it within 1 hour. Another 10% responded 2-3 hours and 8% responded more than 3 hours. Only 2% of the people said they get an ambulance within 10 minutes.

- The second question asks about the problems they face regarding ambulance. This is a qualitative question. According to the responses, the problems are as follows:
  - Ambulances are not available all the time
  - They don’t have the contact number for calling an ambulance. Even if they have, the line remains sometimes busy
  - Ambulances are not available at the hospital
  - The elevated cost of ambulance is high
  - Excessive traffic jam
  - The process of getting ambulances is often time-consuming
  - Existence of syndicate
  - Inadequate communication system
  - Insufficient facilities and equipment
  - Corruption

- The next question asks if URAL EMS can solve these problems.

Can URAL EMS solve this problem?

Here, we can see that 96% of people responded positively regarding the ability of URAL EMS to solve the problems and the remaining 4% responded negatively.

- The next question asks about their opinion on the social benefits URAL EMS brings.

In your opinion, what impact does URAL EMS have socially?

We can see, 52% people think that URAL EMS is contributing in the development of the quality of healthcare service, 50% think that URAL EMS is increasing the availability of ambulances, 42% think that URAL EMS is making the ambulance response time faster, 42% think that URAL EMS is digitalizing healthcare to deliver it in the doorstep of the people and 7% think that URAL EMS is making the ambulance service corruption-free. Only 4% of people think that URAL EMS don’t have the ability to make things better.

- The questionnaire finalizes with the statement, “App-based services such as URAL EMS is beneficial for social development”, asking for the respondent’s agreement level on a nominal scale. The responses were sequentially distributed as: Completely Agree – Agree – Neither Agree Nor Disagree – Disagree – Completely Disagree

We can see that 50% of people agreed with the statement and 44% people completely agreed with the statement. Only 6% of people disagreed with the statement.

B. Findings

After analyzing the information above, it is clearly indicating that app-based service such as URAL EMS can create a major impact socially. The social impacts that URAL EMS can create can be listed as follows:

- It can revolutionize the emergency medical service system by digitalization and fasten the ambulance response time.
- It can also reduce the death rate especially the accidental ones significantly. In addition, it can make it easy for people to hire an ambulance in need. Finally, it can reduce corruption and increase the overall quality of the healthcare service sector.
C. Recommendations

As URAL EMS is a startup project, the author has come up with a few recommendations. They are as follows: They should maintain the quality of their service all the time and provide some facilities and benefits to their suppliers so that the supply chain works perfectly. They should also ensure quality workforce by maintaining a proper HR policy. Brand awareness is crucial at this stage. They should come up with ideas to create brand equity in the marketplace. Right now, they have four categories of ambulance services- Regular, A/C, ICU, and Freezer ambulance. However, they should include more categories of ambulance services such as air ambulance as soon as possible.

V. CONCLUSION

Finally, this research gave the author an insight on how beneficial this kind of software-based services can be for the social development. According to the result of this study and the authors practical observation, app-based services such as URAL EMS is crucial for the social development of a country in this era of globalization and digitalization. This kind of innovative ideas should be more implemented for the overall development of the society of Bangladesh.

To conclude, WOADEC limited should work on making the business process model of URAL EMS smoother and more flexible. As a result, the brand will be able to sustain in the long run which in turns will revolutionize the development of the healthcare service sector of Bangladesh.

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Special Cases of Business Decisions in EOQ Inventory Based Production System

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\textbf{Abstract} – This paper is based on development of model to compare linear cost function and hyperbolic cost function with assumption of variable in rate of production to achieve optimized cost, order quantity and profit value related to inventory and avoids any wastage or shortages simultaneously. Taking the basis of the generalized concept of EOQ model for basic cost of production, numerical design has been carried out through MATLAB and depicted through graphs and tables. This research intends to present the modelling techniques for stochastic problems in optimization of various costs involved in inventory. Here the working models that are derived and used are based on two mathematical cases that are linear functions and hyperbolic functions and hence justifying the application by giving the graphical analysis in 4 different cases of the variation in the parameters and the corresponding results obtained.

\textbf{Keywords} – Stock, EOQ model, Quantity, Costs, Profit, Inventory.

I. INTRODUCTION
This paper offers mathematical EOQ model based results with demand dependent on level of stock and develops of cost function to get optimized value of corresponding profit and total cost. But the base condition taken here is that rate of production is variable, based on variations in demand, it was studied in review of literature that the linear cost functions gave optimum results and hence taking it as a reference, it is shown that the net inventory cost with respect to time is a non-linear function (hyperbolic) and compared the corresponding results from the two models to show the benefits of hyperbolic function over the linear function. Mathematical formulation is used to develop a model to define optimum net inventory cost and optimal order quantity related to it. A hypothetical illustration is used to illustrate the application and comparison of the results (i) Linear cost function for variable rate of production and (ii) Hyperbolic cost function for variable rate of production.

1.1 PURPOSE
The basis of the work in this paper is considering the various cost of production process according to the work done by Shukla. It is intended to explore that factors of time, cost, demand and production, can be studied for some nonlinear functional relationship. The purpose of this paper is to study and propose a mathematical model using a nonlinear (hyperbolic) cost function in this research work is to give advanced models for cost considerations and hence to optimize and improvise the various types of total cost related to production, profit and other costs involved in the organizations requirements.

II. LITERATURE REVIEW
The benchmark research on this prospect was by ref [14] “who developed an EOQ model with inflation subject to different types of pricing policies”. During the same time, [1] also gave “an EOQ model incorporating inflationary effects”. Ref [10, 11] derived a policy, considering different rate of inflation at different costs associated with them. Ref [6] developed “an inventory model under a constant inflation rate for initial stock-dependent consumption rate”. Ref [3] developed “a model with linear time dependent demand rate and shortages to investigate the effects of inflation and time value of money on ordering policy over a finite time horizon”, because of which the effect of inflation and its value in terms of money, on determining the optimized policy for inventory is done. Ref [14] extended ref [5] model and stated “relaxing the assumption of equal inventory carrying time during each replenishment cycle and modified their mathematical formulation”. Ref [13] developed “a deterministic stock model for deteriorating matter in an inflationary situation by pretentious that the seller had the preserve money to pay off the dealer in the commencement but takes benefit of his credit phase”.

Ref [17] developed “an inventory model for weakening objects with fractional backlogging shortage and inflation”. Ref [2] recognized a replica on trade credits. Ref [17] offered “an inventory model under inflation for fading things with rate of consumption dependent on stock and half-done backlogging shortage”. Ref [4] considered “an Inventory policy for an article with inflation induced cost price, selling price and market demand with immediate fraction imbursement”. Ref [16] derived vendor's "best policy under inflation in unclear situation with trade-credit". Ref [12] recognized “summed up a model with variable rate of production and rate of demand as the result of inflation”. Ref [7, 8, 9] offered an economic manufacturing quantity (EMQ) model which focuses on balancing pattern of selling price and the time dependent demand in an imbalanced production process. Ref [7, 8, 9] presented “an inventory model with setback in expenses and stock reliant demand in existence of flawed production”.

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developed “an assembly inventory model for objects by
considering consistency as a decision parameter.” Ref

III. DESIGN

Notations
The model is developed under the following notations, where,

\( D \) is the Demand per day
\( P \) is the Selling price per unit
\( \lambda \) is the Rate of production
\( C_s \) is the cost of set up/unit
\( T \) is the total time of one round of production.
\( N_i \) is the queue size of lots, at \( i^{th} \) operation
\( P_i \) is the lot size in operation, at \( i^{th} \) operation
\( Q \) is the Total number of lots
\( O_i \) is the Value of the part, at \( i^{th} \) operation
\( R \) is the daily rate of holding cost
\( M_i \) is the set up material cost at \( i^{th} \) operation
\( L_i \) is the rate of labour for set up, at \( i^{th} \) operation
\( S_i \) is the total Set up time, at \( i^{th} \) operation
\( k \) is the Total operations

Problem Formulation
The problem here considers inventory system in a factory
ware house, where the stock arrives after being produced
in different lots in the factory. The main focus of the
problem is on selling of single product, its storage and
production the units produced reaches the consumers at
the rate of Rs.P/unit time. It needs to be introspected
what should be the size \( Q \) of the lot to be kept ready for
sale, in order to avoid stock outs and earn maximum
profit in the system.

Assumptions

1. Demand can be determined.
2. No Lead time. Single delivery of order is assumed.
3. The rate of production \( \lambda \) is constant and limited, and
   is strictly higher than the rate of demand (\( \lambda > D \)).
4. Unit cost of set up \( C_s \) is constant.
5. Not to allow Backorders.

IV. METHODOLOGY
At any time say, \( t \), let \( Q(t) \) be the lot size. Different time
intervals \((0, t_1) \) and \((t_1, T) \) and the stock level increases at
the rate of \((\lambda - D)\) units/unit time and then falls at the
rate of \( D \) units/unit time, respectively in the time
intervals.

\[
\frac{dQ(t)}{dt} = \lambda - D, \quad 0 \leq t \leq t_1
\]
\[
= -D, \ t_1 \leq t \leq T \quad \text{……(1)}
\]

Also see that, \( Q(0) = Q(T) = 0 \)

The solution of Equation (1) can be stated as,

\[
Q_1(t) = \lambda - D_t, \quad 0 \leq t \leq t_1
\]
\[
Q_2(t) = T - tD, \quad t_1 \leq t \leq T
\]

But, \( Q(t_1) = Q(t_2) \)

\[
\Rightarrow t_1 = \frac{DT}{\lambda} = \frac{Q}{\lambda} = DT
\]

Hence, here conclusion is that at \( i^{th} \) operation, the cost of
holding, per day, per unit time is,

\[
C_1 = CQ (1+\frac{D}{\lambda}), \quad \text{where } C(Q) = \text{per unit}
\]

cost/ unit time

Also,

\[
C(Q) = \sum_{i=1}^{k} N_i + P_i Q O_i R \quad \text{…… (3)}
\]

\[
\Rightarrow \text{the daily holding cost/unit time for all } k
\]

operations will be,

\[
C_1 = \left[ \sum_{i=1}^{k} N_i + P_i Q O_i R (1+\frac{D}{\lambda}) \right] \quad \text{…… (4)}
\]

Number of lots decides the daily set up requirement and
hence the daily cost of set up. Individual set up cost is
summation of cost of used material and labor cost.
At \( i^{th} \) operation, the daily set up cost, can be expressed as,

\[
C_s \text{ at } i^{th} \text{ operation } = L_i S_i + M_i \frac{D}{Q}
\]

Therefore, using this model, for total \( k \) operations, the
cost of set up per unit time is,

\[
C = \sum_{i=1}^{k} L_i S_i + M_i \frac{D}{Q} \quad \text{…… (5)}
\]

\[
\Rightarrow \text{Total cost/day/unit time is } C = C_1 + C_s
\]

i.e \( C = \sum_{i=1}^{k} \left[ N_i + P_i Q O_i R \left(1+\frac{D}{\lambda}\right) + L_i S_i + M_i \frac{D}{Q} \right] \)

\[
\text{…… (6)}
\]

if Rs. \( P \) is set as selling price of one unit/unit time, then
profit earned by the system can be expressed as,

\[
\text{Profit} = \text{(Total Revenue)} - \text{(Total cost/day)} \quad \text{…… (7)}
\]

Where, Total Revenue = \( DP - CQ \) \quad \text{…… (8)}

Substituting (8) in (7), profit is

\[
Z(Q) = DP - CQ - \sum_{i=1}^{k} \left[ N_i + P_i Q O_i R \left(1+\frac{D}{\lambda}\right) + L_i S_i + M_i \frac{D}{Q} \right] \quad \text{…… (9)}
\]
Hence from (9), \( \frac{\partial Z}{\partial Q} = 0 \), will help us determine the optimal value of Q (also written as \( Q^* \)) and hence determine the maximum profit, once the sufficient conditions are satisfied.

**Policy: When Demand D and Price P are variables**

Here, the demand D is assumed to be known and variable. Per unit selling price P is directly proportional to order Quantity Q and is related as:

\[
P = \theta CQ, \text{ where } \theta > 1 \text{ is constant} \quad \cdots \quad (10)
\]

This is represented as demand function, \( D = fP \), where P, D > 0 \( \cdots \quad (11) \)

The demand function (11) is monotonically non – increasing, continuous, real and single valued function of Q. Hence (10) and (11) shows demand function for fixed mark – up of prices, \( D = f \theta CQ \) \( \cdots \quad (12) \)

**Working Algorithm for Policy, considering the Linear Cost Function**

Here let,

a) Demand D is variable
b) Mark up price P is fixed
c) Cost functions allow quantity discounts

Then profit function \( Z(Q) \) can be calculated from equation (9) and equation (12)

\[
Z(Q) = (\theta - 1)(CQ)f \theta CQ - \sum_{i=1}^{k} N_i + P_i Q O_i R \left( 1 + \frac{\theta}{\lambda} \right) + (L_i S_i + M_i) f \theta CQ \quad \cdots \quad (13)
\]

Let us consider, the demand law as D = KP\(^{-\eta} \) \( \cdots \quad (14) \)

Where \( \eta \) is the elasticity of demand \( \epsilon (0, \infty) \)

Therefore, (13) and (14) gives,

\[
Z(Q) = K(\theta - 1)\theta^{-\eta}N_0 - aQ^{-\eta+1} - \sum_{i=1}^{k} (N_i + P_i) Q O_i R + \frac{K}{\lambda \theta^n} \sum_{i=1}^{k} (N_i + P_i) Q O_i R C_0 - aQ^{-\eta} - \frac{K}{\lambda \theta^n} \sum_{i=1}^{k} (L_i S_i + M_i) (C_0 - \alpha Q)^{-\eta}
\]

\[\cdots \cdots \cdots \quad (16)\]

Differentiating equation (13), Finding \( \frac{\partial Z}{\partial Q} = 0 \), gives

\[
K = \alpha(\theta - 1)\theta^{-\eta}(\eta - 1)(C_0 - \alpha Q)^{-\eta} - \sum_{i=1}^{k} (N_i + P_i) Q O_i R(C_0 - aQ)^{-\eta} = 0 \quad \cdots \quad (17)
\]

The demand curve becomes a rectangular hyperbola with \( \eta = 1 \) at every point of the curve; hence (17) reduces to,

\[
\frac{c_0}{(C_0 - \alpha Q^2)} + \frac{K}{\eta Q^2} \sum_{i=1}^{k} (L_i S_i + M_i) \frac{c_0 - 2\alpha Q}{c_0 - \alpha Q^2} = 0 \quad \cdots \quad (18)
\]

As \( \lambda \to \infty \), equation (18) reduces to,

\[
Q^4 - H_1 Q^3 + H_2 Q^2 + H_3 Q - H_4 = 0 \quad \cdots \quad (19)
\]

Where,

\[
H_1 = \frac{2c_0}{\alpha}
\]

\[
H_2 = \frac{c_0^2}{\alpha^2}
\]

\[
H_3 = \frac{2K \sum_{i=1}^{k} (L_i S_i + M_i)}{\alpha \theta \sum_{i=1}^{k} (N_i + P_i) O_i R}
\]

\[
H_4 = \frac{c_0 K \sum_{i=1}^{k} (L_i S_i + M_i)}{\alpha^2 \theta \sum_{i=1}^{k} (N_i + P_i) O_i R}
\]

Considering rate of production to be finite, equation (14) becomes,

\[
Q^4 - H_5 Q^3 + H_6 Q^2 + H_7 Q - H_8 = 0 \quad \cdots \quad (19)
\]

Where

\[
H_5 = \frac{2c_0}{\alpha}
\]
\[ H_6 = \frac{C_0}{\alpha} - \frac{k}{\alpha \theta} \]

\[ H_7 = \frac{2k \sum_{i=1}^{k} (L_i S_i + M_i)}{\alpha \theta \Sigma_{i=1}^{k} (N_i + P_i) O_i R} \]

\[ H_8 = \frac{C_0 k \sum_{i=1}^{k} (L_i S_i + M_i)}{\alpha \theta \Sigma_{i=1}^{k} (N_i + P_i) O_i R} \]

Note: The value of \( Z^* \) at unit elasticity of demand can be found by taking, \( Q = Q^* \) from equation (19) and substituting in equation (14).

Special Cases

1) Now let \( \eta = 1 \) in the case of constant cost then,

\[ Q^*_c = \sqrt{\frac{K \sum_{i=1}^{k} (L_i S_i + M_i)}{C_0 \theta \Sigma_{i=1}^{k} (N_i + P_i) O_i R (1 + \frac{k}{m} \theta)}} \]……..(19)

\[ Z^*_c = \frac{K \theta - 1}{\theta} \sum_{i=1}^{k} N_i + P_i Q_c^* O_i R + \frac{K}{\lambda \theta C_0} \sum_{i=1}^{k} N_i + P_i Q_c^* \]

\[ + \sum_{i=1}^{k} (L_i S_i + M_i) \left( b + \frac{d}{Q^*} \right)^{-\eta-1} \]

\[ \left( b + \frac{d}{Q} - \frac{d \eta}{Q} \right) = 0 \]……..(23)

2) Let \( \lambda \to \infty \), then (20) reduces to,

\[ Q^*_c = \sqrt{\frac{K \sum_{i=1}^{k} (L_i S_i + M_i)}{C_0 \theta \Sigma_{i=1}^{k} (N_i + P_i) O_i R}} \]……..(21)

Hyperbolic cost Function

For variable cost,

\[ CQ = b + \frac{d}{Q} \ (Q_0 \leq Q < \infty) \]

The profit function becomes,

\[ \Rightarrow ZQ = K (\theta - 1) Q^{-\eta} \left( b + \frac{d}{\theta} \right)^{-\eta+1} \]

\[ - \sum_{i=1}^{k} N_i + P_i Q OR + \frac{K}{\lambda \theta Q^\eta} \]

\[ - \sum_{i=1}^{k} N_i + P_i Q OR \left( b + \frac{d}{Q} \right)^{-\eta} \]

\[ - \frac{K k}{\eta} \sum_{i=1}^{k} \frac{L_i S_i + M_i}{Q} + \frac{d^\eta}{Q} \]

\[ \Rightarrow \frac{\partial Z}{\partial Q} = 0 \] gives,

\[ \Rightarrow \frac{1}{Q^2} k (\theta - 1) Q^{-\eta} (\eta - 1) + \frac{d}{Q} \]

\[ + \sum_{i=1}^{k} (N_i + P_i Q)OR \left( b + \frac{d}{Q} \right)^{-\eta-1} \]

\[ \sum_{i=1}^{k} (N_i + P_i Q OR) \left( b + \frac{d}{Q} \right)^{-\eta-1} \]

\[ \left( b + \frac{d}{Q} - \frac{d \eta}{Q} \right) = 0 \]……..(23)

For special case \( \eta = 1 \) eqn. (23) becomes,

\[ - \sum_{i=1}^{k} N_i + P_i Q OR + \frac{K}{\lambda \theta} \sum_{i=1}^{k} N_i + P_i Q OR + \left( b + \frac{d}{Q} \right)^{-2} \]

\[ \left( b + \frac{2d}{Q} \right) + \frac{kb}{Q^2 \theta^2} \]

\[ \sum_{i=1}^{k} \left( L_i S_i + M_i \right) \left( b + \frac{d}{Q} \right)^{-2} = 0 \]

Simplifying further,

\[ \sum_{i=1}^{k} N_i + P_i Q OR + \left( 1 - \frac{k}{\lambda \theta} \right) \left( b + \frac{d}{Q} \right)^{-2} \left( b + \frac{2d}{Q} \right) + \frac{kb}{Q^2 \theta^2} \]

\[ \sum_{i=1}^{k} \left( L_i S_i + M_i \right) \left( b + \frac{d}{Q} \right)^{-2} \]

\[ \Rightarrow \]
Substitutes (24) in (22), to get \( Z^* \) corresponding to \( Q^* \)

**Constant Cost**

In \( CQ = b + \frac{d}{Q} \), assume \( d = 0 \Rightarrow CQ = b = \) constant; \( (Q_0 \leq 1 < \infty) \)

Hence for \( \eta = 1 \) & constant cost,

\[
\begin{align*}
Q^*_c &= \left[ \frac{Kb \sum_{i=1}^{k} L_i S_i + M_i}{\theta \sum_{i=1}^{k} N_i + P_i O_i R \left( b^2 - \frac{Kb}{\lambda \theta} \right)} \right]^{1/2} \\
&= \left[ \frac{K \sum_{i=1}^{k} L_i S_i + M_i}{\theta \sum_{i=1}^{k} N_i + P_i O_i R b} \right]^{1/2} \\
&= \left[ \frac{K \sum_{i=1}^{k} L_i S_i + M_i}{\theta \sum_{i=1}^{k} N_i + P_i O_i R b} \right]^{1/2}
\end{align*}
\]

………… (25)

\[ Z^*_c = \frac{K(\theta - 1)}{\theta} \sum_{i=1}^{k} (N_i + P_i Q_c^* O_i R) \]

\[ + \frac{K}{\lambda \theta b} \sum_{i=1}^{k} (N_i + P_i Q_c^* O_i R) - \frac{K}{\theta b} \sum_{i=1}^{k} (L_i S_i + M_i) \]

If \( \lambda \rightarrow \infty \), then (24) & (25) becomes,

\[
\begin{align*}
Q^* &= \left[ \frac{Kb \sum_{i=1}^{k} L_i S_i + M_i}{\theta \sum_{i=1}^{k} N_i + P_i O_i R \left( b + \frac{d}{Q} \right)^2} \right]^{1/2} \\
&= \left[ \frac{K \sum_{i=1}^{k} L_i S_i + M_i}{K \sum_{i=1}^{k} L_i S_i + M_i} \right]^{1/2}
\end{align*}
\]

And

\[
Z^* = \left[ \frac{K \sum_{i=1}^{k} L_i S_i + M_i}{\theta \sum_{i=1}^{k} N_i + P_i O_i R b} \right]^{1/2}
\]

**Problem**

Suppose that the following information is given:
\( D = 540 \) Units, \( \lambda = 600 \) Units, \( P = 3 \) Rs. / Unit, \( R = 0.001 \).
\( K = 50 \), we get the following results:

<table>
<thead>
<tr>
<th>Case</th>
<th>( \theta )</th>
<th>( c )</th>
<th>( \eta^* )</th>
<th>( Z^* )</th>
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<tbody>
<tr>
<td>Case (a)</td>
<td>2</td>
<td>5</td>
<td>19.79</td>
<td>18.42</td>
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<td>16.14</td>
<td>28.01</td>
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<tr>
<td>5</td>
<td>5</td>
<td>12.49</td>
<td>35.87</td>
<td></td>
</tr>
<tr>
<td>Case (b)</td>
<td>2</td>
<td>4</td>
<td>22.15</td>
<td>17.72</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>25.63</td>
<td>16.62</td>
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<tr>
<td>2</td>
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<td>1</td>
<td>1</td>
<td>45.03</td>
<td>10.68</td>
<td></td>
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<tr>
<td>Case (c)</td>
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<td>4</td>
<td>18.06</td>
<td>27.38</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
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<td>31.55</td>
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<tr>
<td>5</td>
<td>2</td>
<td>19.79</td>
<td>33.48</td>
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<tr>
<td>Case (d)</td>
<td>6</td>
<td>2</td>
<td>18.06</td>
<td>35.72</td>
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<td>5</td>
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<td>4</td>
<td>15.62</td>
<td>32.34</td>
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</table>
When $P$ and $D$ are variables: Hyperbolic Cost Function

<table>
<thead>
<tr>
<th>Case</th>
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<th>$q^*$</th>
<th>$Z^*$</th>
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</thead>
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<td>13.97</td>
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<td></td>
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<td>10</td>
<td>11.40</td>
<td>29.56</td>
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<td></td>
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<td>10</td>
<td>9.86</td>
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<tr>
<td></td>
<td>5</td>
<td>10</td>
<td>8.82</td>
<td>37.08</td>
</tr>
<tr>
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<td>8</td>
<td>15.62</td>
<td>19.84</td>
</tr>
<tr>
<td></td>
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<td>Case (c)</td>
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<td>8.91</td>
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</tr>
<tr>
<td>Case (d)</td>
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<td>10.86</td>
<td>41.86</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>5</td>
<td>9.3</td>
<td>41.36</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>7</td>
<td>8.91</td>
<td>39.90</td>
</tr>
</tbody>
</table>

Research Limitation

This model has been developed by considering the various variables. This model needs more practical application in different small and medium industries. Generally small and medium industries do not have optimized EOQ model whereas large scale industries have access to various models.
V. CONCLUSION

Using sensitivity analysis, the results in equation (15) for hyperbolic cost function when compared to the results of equation (12) for linear cost functions, are shown in table (23) and table (24) respectively, the comparative graphs are drawn in four different cases. The following graph justifies that hyperbolic cost function gives an optimized value of both Quantity as well Profit as compared to results from Linear Cost Function.

For constant $C_0$ and increase in $\theta$, there is decrease in order quantity $Q^*_c$ and increase in profit $Z^*_c$.

Fig.(A1): Comparison of Quantity: constant $C_0$ and increase in $\theta$

The above graph shows that hyperbolic cost functions gives an optimised quantity at increased rate of production.

Fig. (A2): Comparison of Profit: constant $C_0$ and increase in $\theta$

The graph shows that higher profits are achieved in case of hyperbolic cost function considering the given conditions.

For constant $\theta$ and decrease in $C_0$, there is increase in order quantity $Q^*_c$ and decrease in profit $Z^*_c$.

Fig.(B1): Comparison of Quantity: constant $\theta$ and decrease $C_0$

This shows that the quantity at lower cost of production is optimum in case of hyperbolic cost function as compared to the results of the linear cost function.
Fig. (B2): Comparison of Profit: For constant $\theta$ and decrease $C_0$

The graph shows that higher profits are achieved from hyperbolic cost function as compared to the linear cost function.

For increase in $\theta$ and decrease in $C_0$, there is increase in both order quantity $Q_c^*$ and profit $Z_c^*$.

Fig. (C1): Comparison of Quantity: increased $\theta$, decrease in $C_0$

The result shows that hyperbolic cost functions enables to detect lower limit of quantity with decreasing cost as compared to linear Cost function. This can help reduce wastage.

Fig. (C2): Comparison of Profit: For increased $\theta$, decrease in $C_0$

Hyperbolic cost function enables to achieve higher profits at lower cost as compared to the values of linear cost function.

For decrease in $\theta$ and increase in $C_0$, there is decrease in both order quantity $Q_c^*$ and profit $Z_c^*$.

Fig. (D1): Comparison of Quantity: decreased $\theta$, increased $C_0$

The graphs shows that hyperbolic costs function are more effective to achieve optimum quantity with increase in cost whereas simultaneous quantity values from linear cost function are higher.

Fig. (D2): Comparison of Profit: For decreased $\theta$, increased $C_0$

The graph shows that hyperbolic cost function gives higher profits at given conditions as compared to the results from linear cost function.

**Future Scope**

This research will present an opportunity to SMEs to develop an optimized EOQ model. Future scope for this paper will be to adopt this model to various industries and study the practical implications of the model.
REFERENCES


Resolving Obstacles of Supply Chain Management in RMG Industry Through Transportation Management

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Abstract – This paper tries to illuminate the issues regarding current supply chain management in RMG industry of Bangladesh and developing countries, the influence of transportation decision making in core supply chain management. Transport management aims to integrate transport decisions in core supply chain process. This paper is based on a secondary information which includes journal, article papers as well lectures given by professors. The paper finds that supply chain management of Bangladesh and other developing countries RMG industries exclude transportation management from strategic level decisions and considers transportation as a commodity rather than a part of supply chain management. The findings through mathematical analysis reveals that modes of transport and network routes both impact the total cost in transportation system. By empirical analysis this paper suggests that transport management should be considered at strategic level and vertical horizontal transport collaboration is need among stakeholders of RMG industry.

Keywords – Supply chain management, Readymade garments, Transportation, Lead time, Cost minimization.

I. INTRODUCTION

RMG sector of Bangladesh holds an important part of the economy. Due to globalization and rapid changes in customer demand and service competition is now more than ever. Textile industry of But recent times Bangladesh RMG industry is incurring losses due to increased lead time, mismanagement at port, political turmoil and other external problems. Ref. [1] suggests that import of fabrics takes 55-75 days alone increasing the lead time 90 to 130 days where dependency imports is 80% fabrics are imported and 50% import related problems caused by dependency. This paper explores ways of choosing transport modes, network and long term decision in order to maximize utility.

Ref. [2] suggest that acknowledges three factors cost, quality and lead time for apparel retailers plays a vital role but the importance of finishing a job in less possible time can be some buyer’s requirements. Therefore, for Bangladesh RMG industry vital components of the Supply Chain Management comprises informational sharing of demand, efficient planning and management of logistics, transportation of raw materials, availability of better infrastructure of roads and railways, availability of proper warehouses to store goods, inventory planning and controlling for optimized solutions, availability of enhanced maritime physical infrastructure, highly efficient planning and controlling of ports and shipments [3]. Transportation has been neglected and seen as a commodity of SCM rather seeing it as part of the SCM. The purpose of this paper is to emphasize transportation as integral part of SCM and looks for means of reducing cost and increasing efficiency by integrating transportation with core SCM of RMG industry.

Transportation services play’s an important role in continuous supply chain operations, transporting inbound materials from supplier to manufacturing location, transposition of inventory among different plants or distribution centers, and supplying finished products to customers [4]. Ref. [5] refers that transports shouldn’t be seen as the weakest link because it is very vital that all supply chain processes provide quality in form of enhanced worth and hence it is important that transport play its proper role in terms of cost and service provision.

II. LITERATURE REVIEW

Due to the importance of particular factors varies from industry to industry, company to company, sometimes within a company from one facility to the next and so mode plus carrier selection is habitually perceived as different for inbound and outbound shipments, even in case of identical location [6]. Supply chain management integrates supplier, manufacturer and distributors further more supply chain deals with process management beyond organizational boundaries measurement of performance is very necessary [7]. Supply chain management concept originated from the recognition that the process of transforming raw materials into final products and delivering those products to customers is becoming increasingly complex [8]. Bangladesh’s export-oriented RMG sector has some distinctive features, which differentiate it from other businesses such as wage, supply chain, timeframe, and compliances are among the most important features of this business [9].

SCM in Bangladesh RMG sector is complex due to due global supply chain, crossing borders general barriers.
such as tariff, nontariff barriers, exchange rates, different product requirements, consumer tastes and finally business practices operating at different level of supply chain from supplier to manufacturer to buyer [10].

Supply Chain process of Apparel Manufacturing Industry are scattered in standpoint of Bangladesh, which is lagging behind in the international competition [11]. Ref. [12] refers that long lead time, interruption in utility supply as well as on-time supply problems are the most prioritized supply side barriers.

III. METHODOLOGY

The information’s have been gathered through secondary basis. These secondary data’s were collected from various publications i.e. books, journals, conference papers. In this research numerical method has been used. By evaluating all the data’s and how transportation affects overall SCM in RMG industry.

IV. RESULTS

FIGURES AND TABLES

Supply chain management in RMG industry of Bangladesh:
SCM in RMG industry includes many stages from supplier to process and finally to end customer. The process starting from supplier goes into transformation in processing stage and thus ultimate product is provided to customer through distributor.

Ref. [13] provides a conceptual model of supply chain of RMG sector of Bangladesh, it can be derived that all the Bangladeshi companies in RMG industry are subcontractor mainly they are performing cutting, making and trimming (CMT) activities which progressive chain consisting suppliers, manufacturer, customers and ultimate buyer In RMG sector.

The following model provides a theoretical framework of SCM in RMG industry of Bangladesh.

Transportation decision making tools in SCM: The emergence of new objectives for the transportation function has created a need for a framework that identifies and organizes transportation decision making in an integrated supply chain environment. The framework portrays initial transportation decisions as strategic, long-term decisions that focus on the overall supply chain transportation system. Once decisions are understood at this level, the decision-making scope becomes increasingly tactical in nature, focusing on operations that implement the overall system decisions. Details regarding each decision area are provided below [4].

Figure 1: Conceptual framework of SCM in RMG industry of Bangladesh [13].
1. Total network and lane design decisions: This is the highest strategic decision level where transportation managers must be aware and constantly evaluate the total supply chain freight flows and have input into network design. This area requires consideration of the network link/node structure, supplier, plant, distribution center, and customer locations including the various physical movements among them. Long-term decisions correlated to the transportation modes which are suitable and accessible for freight movement should be made. Network and lane design decisions should examine the transactions with other operational cost factors such as inventory and distribution center costs. In this case factors considered among these decisions is that networks doesn’t need not be fixed or constant. Significant service developments and cost can be reduced by critically examining existing networks and linked flows [4].

2. Lane operation decisions: Where network and lane design decisions focus on long-term planning lane operation decision focuses on daily operational freight transactions which is the second level decision making step in decision making frame. Transportation managers in this level use concurrent data on product needs at the various system nodes organizes product movements along inbound, interfaculty, and outbound shipping lanes tries to meet service requirements at lowest total costs possible [4].

3. Mode or carrier assignment decisions: Just as information enables the deployment of different techniques in network and lane operations decisions, the capability to store and access large amounts of data facilitates a new approach to transportation mode/carrier assignment decisions [4].

4. Service negotiations: Although price is one of the core concerns among transportation managers understanding of service potentials, customer and product specific costs must be considered while making contract negotiations. Additionally cross functional tradeoffs and inter firm relationships should be taken in consideration as well. Managers should have knowledge about the legal implications of contracts besides to the operational decisions that must be made with regard to transportation service choices [3], [4].

5. Dock level decisions: Dock level decision is the final set of transportation decisions which involves dock level operations like load planning, routing and scheduling. Improper or miscalculated decisions and mistakes in this stage of the process can loss the labors and cost which were added over preceding stages. In modern era relationship oriented business, emphasis on dock workers and drivers should be given so that errors made in the finishing stage of order fulfillment won’t devastate the critical supply chain relationship. Due to rise of advanced information technology and decision support systems managers at the dock level must have expertise in using the information tools available to aid in such decisions [4].

Fig 3: A theoretical framework outlining the demand for and supply of better optimized transport solutions through combining vertical and horizontal collaboration [5].

In normal cases traditional supply chain overlooks transport management is considered separate entity and not included in core management. But when industries are powerful on the demand side high pressure is exerted on existing supply chain. Managers in this case must have to assure that they are able to provide just in time through smaller and frequent orders and transports in integrated supply chain. To avoid such scenarios a joint application of vertical collaboration along with transport
models added by firm portion of horizontal collaboration is needed. New level of value can be attained if such collaboration is practiced [5].

**ABBREVIATIONS AND ACRONYMS**

TTC-Total Transport Cost, FC-Freight cost, TSCC-Total Stock Carrying Cost, PCC-Pipeline Carrying Cost, TSSCC-Total Safety Stock Carrying Cost, DC-Damage Cost, EOQ-Economic Order Quantity, LT-Lead time.

**Equations**

Ref. [14] Proposes equation for calculation of transportation modes, which enables transport mode selection on basis of cost. When calculating cost for transportation modes one have to consider some cost factors, whether consignment meets minimum requirement or not. There are mainly five types of cost related to transport modes and those are given below.

1. **Freight cost, FC:**
   \[
   \text{Annual demand}(D) \times \text{Freight charge}
   \]

2. **Total stock carrying cost, TSCC:**
   \[
   \text{carrying cost}(cc\%) \times \text{purchasing price}(PP) \times \left(\frac{\text{EOQ}(Q)}{2}\right)
   \]

   \[
   \text{EOQ}, Q = \sqrt{\frac{2 \times \text{Annual demand}(D) \times \text{Order or Setup cost}(s)}{\text{Annual Holding Cost}(H)}}
   \]

3. **Pipeline (in process) carrying cost, PCC:**
   \[
   \text{Lead time (LT)} \times \text{Pipeline or In process Quantity (PQ)}
   \]

4. **Total safety stock carrying cost, TSSCC:**
   \[
   \text{carrying cost}(cc\%) \times \text{purchasing price} \times \text{safety stock}
   \]

   \[
   \text{Safety stock}, SS : z \times \sqrt{\sigma_L^2d^2 + \sigma_d^2LT}
   \]

   \[z = \text{standard deviation of service level}\\
   \sigma_L = \text{standard deviation of lead time}\\
   d = \text{demand}\\
   LT = \text{Lead time}\\
   \sigma_d = \text{standard deviation in demand}\\
   D = \text{Annual Demand}
   \]

5. **Damage cost, DC:**
   \[
   \text{Annual damage} \times \text{purchasing price}
   \]

   Total transport cost, \(\text{TTC} = \text{FC}+\text{TSCC}+\text{PCC}+\text{TSSCC}+\text{DC}\)

By calculating cost of each preferable transport modes such as airplane, train or shipping the lowest one has to be chosen. After choosing the transport modes we have to look into the cost of supply of materials and demand of products which

Ref. [15] cost minimization equation derived for linear Programming Transportation Models: Cost minimization through transportation model enables movement of products from a number of sources to a number of destinations at the minimum possible cost. Each source is able to supply a specific number of units of the product, and each destination has a fixed demand for the particular product. The linear programming model has constraints for supply at each source and demand at each destination. All constraints are considered equalities in a balanced transportation model where supply equals demand. Constraints contain inequalities in unbalanced models whereas supply does not equal demand.

Transportation Modes through Transportation model

**Problem Definition and Data:**

**Cost minimization, Z= \sum_{ij} \text{TTC}_{ij}**

Subject to constrains

\[
\sum_{j} X_{ij} = A_i , i=1,2,.....n
\]

\[
\sum_{i} X_{ij} = B_j , j=1,2,.....n
\]

\[
X_{ij} \geq 0, \text{ for all } i, j
\]

Where

\[A_i = \text{Quantity of product available at origin } i ; \]

\[B_j = \text{Quantity of product needed at destination } j ; \]

\[\text{TTC}_{ij} = \text{Cost of transporting one unit of product from origin } i \text{ to destination } j \]

And \(X_{ij} = \text{Quantity of transporting from origin } i \text{ to destination } j\)

Ref. [7] and Ref. [8] we can summarize the equations and it can be incurred that total transport cost is correlated and directly effects the total cost of transportation. Assuming quantity being transported is one \(X_{ij} = 1, \text{TTC}_{ij} = Z\)

If, \(\text{TTC}_{ij} \uparrow = \text{Total cost}, Z \uparrow \)

If \(\text{TTC}_{ij} \downarrow = \text{Total cost}, Z \downarrow \)

The following implies that per unit change directly affects the total transport cost. Thus increasing total cost, \(Z\).

**V. DISCUSSION**

Transport collaboration is now a trending occurrence in popular supply chain management. Sometimes retailers collaborate with their suppliers or suppliers often collaborate with manufacturers in addition retailers, suppliers, and manufacturers sometimes all collaborate together. RMG industry in Bangladesh are third party suppliers. Various materials such as cotton and other fabrics are imported. Which makes RMG a complex network of supply chain. From equations we can derive that, \(\Delta \text{TTC}_{ij} = \text{Total cost, } A \Delta Z \) thus change in total transport cost \(\text{TTC}_{ij} \) changes the whole transport cost \(Z\).

At the strategic level of SCM, RMG companies can use following transportation decision making tools among the following selection criterions below.

**Transportation modes:** formula provides calculation of
transport modes by cost. It is not always necessary to opt for the cheapest mode, but depends on the situation and time [14].

Selection of transportation network: After deciding transport mode next step is to decide network for transports. Ref. [15] suggests linear programming method can be used to select different transport routes to make a network. There are few decisions which integrated in transport network for smooth flow which are in the following.

Vertical-horizontal integration: Among supplier, manufacturers transport management and distributor/retailer is needed. This integration will reduce transport cost and time creating more efficiency.

Selection of transport service provider: Bangladesh RMG industries are subcontractors many companies are small and don’t have their own transport management rather dependent on transport services. So service provider must be selected meticulously and proper communication channel has to be maintained. In situation companies has to include transport service provider in vertical-horizontal integration chain therefore transport service provider can cooperate with the manufacturers need.

Dock related decision: Dock level decision includes unloading or loading of materials, routing and scheduling.

Information technology: In order to implement transport decisions properly information flow of transportation is needed among supplier, manufacturer and distributor/retailer is needed in order to make proper decision.

The input data of the decision making tools have to change according to strategic level decisions.

Fig 4: Conceptual framework for transport management collaboration between stakeholders and RMG firm.
VI. CONCLUSION

This study theorizes that in the strategic level the garments industries have to make decision based on the transport management tools described in section DISSCUSSION-V. The mathematical analysis of this paper reveals that in order to minimize transport cost, selection of transport mode and network route is important as both add up to total cost. Furthermore in order to maintain smooth flow, RMG industries should set up own transport management if not possible then RMG industries should at least collaborate with transport providers in the decision making process. The model depicted in Fig 4 represents collaboration between RMG stakeholders and the data flow required for decision making in strategic level. By considering transport management in core supply chain quick decision can be taken. In conclusion this paper would reaffirm that transport management tools described in section DISSCUSSION-V are essential and need to be adopted. A robust transport management tool can reduce the net cost and thereby reduce the lead time by timely delivery. The proposed model and mathematical analysis is still rudimentary by design and approach, the authors of this paper fully welcome any redesign or improvisation by other authors and researchers.

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Solutions for Lead Time Minimization of RMG in Bangladesh: Backward Linkage and Port Facilities

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\textbf{Abstract} – The purpose of this paper is to come up with solutions in lead time minimization based on the current problems faced in the RMG sector of Bangladesh. Lead time is one of the most crucial aspects in the apparel sourcing market; the execution of a final order is highly dependent on lead time. This paper is based on secondary data which includes journal papers, articles, and various newspaper articles. The paper analyzes the business structure of RMG, how reduction of lead time and increasing overall competitiveness in the sector would change the current scenario of the most spectacular industry of Bangladesh. The objective of the study is to discuss the current situation of RMG sector, the gaps in the industry and how with plausible actions these gaps can be fulfilled and the potentials of the sector can be boosted, resulting in a more profitable industry. This paper talks about the existing problems in the apparel industry. However, more research is needed in the fields through primary data collection, face-to-face interviews with the authorities in charge which was not possible for the researchers. So, further study is required accordingly.

\textbf{Keywords} – Lead time minimization, Bangladesh readymade garments, backward linkage, domestic fabric market, apparel industry.

I. INTRODUCTION

The robust growth of the ready-made garments (RMG) sector in Bangladesh has been phenomenon in the FY18. With a growth of 8.76 percent during July-February, FY18, the country’s export growth was solely driven by the sector where growth of knit products amounted 11.6 percent. The sector has established a significant place in the nation’s economy which contributed $30.61 billion (83.49%) to the country’s total exports of $36.66 billion in last fiscal year. \cite{1}

In order to sustain and survive in this sector Bangladesh has to take into account reasonable and grounded policies to help the nation in competing more efficiently in the ever changing business environment by minimizing the lead time. In the beginning of 1990s, the lead time was 120-150 days but in 2007, it was reduced to 90-100 days \cite{2}

In order to compete successfully, manufacturers and other intermediaries of the supply chain network must be updated about the latest knowledge of scientific management in minimizing lead time and other management issues in order to make sure the operations are run efficiently.

Bangladesh is infamous for delayed production solutions and meeting deadlines. Global retailers source from Bangladesh just because of the competitive costs because of cheap labor, and sustainable quality which in turn makes up for the delayed shipments. Therefore, improving the management operations and lead time minimization would help Bangladesh to meet up their potentials. The minimization of lead time can be possible by taking some immediate steps, such as- building up the backward linkage industry to reduce dependency on imported raw materials, i.e., fabrics, accessories, etc.

Lead time is defined as the time between the customer order and customer receipt of the product or service, i.e., the time needed to process an order, to procure the raw materials and manufacture them into finished goods, and transporting them through the various stages of the supply chain. A researcher named Marc Smith explained lead time in two ways. First of which is customer lead time, which refers to the time span between customer ordering and customer receipt. Second, manufacturing lead time, this refers to the time span from material availability at the first processing operation to completion at the last operation.\cite{2}

From Ref. \cite{3} Bangladesh has a big opportunity in the global market because of the current trade war between the US and China.

The investment guru Mark Mobius, one of the ‘godfathers’ of emerging market, stated that ‘those countries who are going to be exporting to the US instead of China – like Bangladesh, Turkey, Vietnam. They are all big producers of garments and shoes and consumer goods.’ Moreover he provided an example of how Bangladesh could take advantage of the opportunity and increase the level of exports to the US. Currently, Bangladesh exports around $5.5 billion and Vietnam around $11.50 billion to the US. A local think tank, Ahsan H Mansur, executive director of Policy Research Institute, stated the New Age that Bangladesh RMG sector might gain as an immediate effect if Trump slapped duties on Chinese apparel products.\cite{4}

In the short-run, Bangladesh’s garment export may rise because of the trade war between the US and China and some of the Chinese investment might come to Bangladesh, however, it is not sustainable in the long-run. According to Mobius, any trade war is not good for the global economy. This paper aims to provide
information to the concerned stakeholders of the RMG industry to be enlightened about the current scenarios of the sector, the issues relating to the lengthy lead time and possible solutions to minimize the gap in order to achieve profitability and meet up the potentials.

LITERATURE REVIEW

Lead time is the time between a customer placing order and the customer receiving the final product or service, i.e., the time required to process an order, to procure the raw materials and manufacture them into finished goods, and transporting them through the various stages of the supply chain. Lead time can be defined in two ways: (i) customer lead time – which refers to the time between the customer order and customer receipt, (ii) manufacturing lead time – which refers to the time span from procurement of raw materials to the final product in the manufacturing process.

II. METHODOLOGY

The information for the study has been gathered through secondary data which was collected from various publications i.e. books, journals, conference papers, newspaper articles. In this research numerical method has been used through equations for calculating lead time and discussing how lead time affects the overall performance of RMG industry in Bangladesh.

III. RESULTS

FIGURES AND TABLES

Ref. [2] provides an illustration of the business structure and raw materials collection process and how foreign raw material suppliers result to a longer lead time indicated as the problem area. In the apparel sector, the raw materials are the fabric and accessories of which, fabric are mostly imported from countries like- China, India, Indonesia, etc. However, 80% of the accessories are locally produced which therefore, does not affect the total lead time.

Figure 1: Business structure and raw materials collection process. [2]

Time is one of the most crucial factors about the industry, this is because, the lesser the time required to go for production the more competitive the manufacturers can be. In an industry like fashion, new trends and styles last for a very short period of time, new styles, cutting are released every now and then by popular celebrities and stylists.

Figure 2. shows comparison of life cycle pattern between fashion and basic products. [5]

Usually a product passes through the four different stages of a product life cycle by different planning strategies in order to enhance its success and sustainability. Each successful product goes through at least the four stages in the product life cycle, which are: introduction, growth, maturity and decline. The product life cycle length is also different depending on the product, where the fashion life cycle usually experiences a sharp decline at the end of the growth stage. According to Figure 2, the growth stage is noticeably shorter when compared to a basic product. [5]

This means that the declining stage starts immediately after its apex in the growth stage, making fashion item inventories very difficult to manage. There is immense pressure on the manufacturing industry to deliver apparel within and short and limited time span. Customers are updated and aware of the latest fashion styles and trends through social media which is ever-updating within seconds. New styles, fabrics and trends are changed through different seasons-summer, winter and fall. Therefore, it is very difficult to know what new trends or
styles will be popular and accepted by the consumers and what styles would be obsolete.

Figure 3: Obsolescence problem for late entrant in the fashion market [5]

Ref. [5] states how late entrants would have obsolescent stock, the shaded, grey area, if the lead time were higher, resulting in late deliveries provided that the time is limited because of the fluctuating trends and styles. Since, Bangladesh garment factories go for production after their orders are finalized the main concern lies in minimizing lead time in the manufacturing process and delivery of the final product through port facilities or through air.

Lead time is the time between a customer placing order and the customer receiving the final product or service, i.e., the time required to process an order, to procure the raw materials and manufacture them into finished goods, and transporting them through the various stages of the supply chain.

Lead time can be defined in two ways: i) customer lead time- which refers to the time between the customer order and customer receipt, ii) manufacturing lead time-which refers to the time span from procurement of raw materials to the final product in the manufacturing process.

In order to reduce the amount of lead time two solutions can be provided- firstly, the expansion of backward linkages which will make sure that there are enough fabric suppliers in the domestic market to serve the apparel sectors’ demand and secondly, improving the inefficiency of port management.

Backward linkage: domestic fabric supply can reduce the overall lead time drastically and increase the response of the whole supply chain of the apparel industry of Bangladesh. In order to be competitive in the global arena it must be a pre requisite for Bangladesh to develop a backward linkage of textile mills and domestic fabric supplies. A system dynamics model has been developed to analyze and simulate the variables that are linked with lead-time management [5] this analysis shows that it takes at least 10 years to raise the production capacity of fabric to meet about 80% of the total demand for apparel goods but also for other commodities. Thus, the investment in textile mills to produce fabrics is the best policy advice for the time being.

Port management: according to a new article, the country was unable to achieve its export target for RMG in last FY16-FY17 due to longer lead time at the port. However, RMG exporters from Cambodia, Sri Lanka and India who are the main competitor of Bangladesh achieved their export target because of shorter lead times and their excellent management performances. Due to delay and traffic at the Chittagong port, Bangladesh is lagging behind exporters are forced to use a more expensive mode of transportation, i.e., the air shipment to maintain the strict deadlines of the international buyers. Port users have stated that it is easier to transport goods at a very minimum cost from ports in Malaysia and china rather than using the Chittagong port, which they are reluctant to use.

**ABBREVIATIONS AND ACRONYMS**

| LT- LEAD TIME |
| CLT- Customer Lead Time |
| ILT- Information Lead Time |
| OLT- Order Lead Time |
| MFT- Fabric manufacturing time |
| FX- time to import fabrics |
| I- fabric inspection / other processing |
| GM- Garments Manufacturing (cutting, sewing, washing, finishing and packing) |
| FI- Final Inspection and sending to Chittagong sea port |
| MGT- manufacturing time of garments |

**Equations**

Ref. [2] proposes an equation for calculation of lead time, which is the summation of information lead time and manufacturing lead time. The information lead time includes the time when correspondence between buyers and the RMG factory merchandisers takes place to negotiate about the garments quality, color break down, cost/price per unit, order quantity and required delivery date. Order lead time can be defined as starting immediately after the order issue date and spanning up to the last shipment date, in general, at the Chittagong sea port. During manufacturing lead-time, factories source/buy fabrics, the main raw material, either from local markets or outsource from China, India, Pakistan, Sri Lanka, Indonesia or other countries. Sourcing fabrics is a time consuming factor in the RMG business and it is included in order lead-time. Order lead-time plus shipment time is the replenishment lead-time for the overseas merchants who procure garments from Bangladesh. The less replenishment lead-time is allowed, the more pressure there is on every supplier in the supply chain, which is a source of competition among manufacturers.

CLT = ([ILT] + [OLT])
For Bangladesh garments (in general):

\[ LT = MFT + FX + I + GM + FI + buffer \text{ time} \]  

(woven garments)

Generally, it takes 120 days LT in Bangladesh for woven garments.

\[ LT = MFT + MGT \]  

(Knit garments)

In case of knit garments it takes 90-110 days LT.

Shipping time for import includes shipping time, unloading time and transport time from port to manufacturing point.

Shipping time for export includes manufacturing time for final products and shipping time for export. [2]

E. Other Recommendations

The Chittagong port has been facing vessel congestion during the last two months which resulted in delays and many ships waiting at the outer anchorage. About 90 percent of the country’s exports and imports are executed through the Chittagong port. However, because of inadequacy in infrastructure the port located in the estuary of the Karnaphuli River is facing a lot of challenges. Chittagong port is experiencing 16% to 17% growth in cargo and container handling for the past few years nonetheless no jetty has been constructed in the last nine years. As a result, the vessel congestion persists in absence of adequate jetty facilities. To add more to the problems of the port, two gantry cranes were damaged by an accident on June 25, 2018, which disturbed the operations of the port. [6]

IV. DISCUSSION

There are three significant parameters that need to be maintained as best as possible. They are- cost, quality and lead time for the apparel retailers. Production cost, quality of fabrics and lead-time required to execute an order are all correlated. Because of high quality fabrics the orders are placed and due to low production costs due to labor, the order is finalized. However, paying high cost to get the product that exceeds the sell period converts to huge loss to the retailer. Fast fashion is very time sensitive. It is merely unpredictable to know what trends would come in the future. Therefore, it is crucial to meet deadlines and deliver the finished product as soon as possible. High quality fabrics with simple designs need shorter turnaround time compared to the embroidered or premature fashion cuts. The time required for the raw materials like fabric, accessories, etc. are important in calculating the lead time required to make the final delivery. Longer the time required to procure the more time required to meet deadlines and hence higher stock and inventory level for the retailers. Lead time reduction can lower a firm's overall costs and make it more responsive to the marketplace by decreasing the amount of finished goods inventory required and optimizing production levels.

The best way to solve the problem of lead time in Bangladesh garments industry is through domestic backward linkage which would aim to reduce production and distribution time. The apparel industries that do not have their own backward link industry for which they have to source fabrics from local or foreign producers which requires an extended lead time. Fabric import is a lengthy process and on average takes up to 60 days. In the woven sector where more than 90% of fabric is sourced from mainly China requires a lead time of around 120 days to ship the end product.

If such steps are not taken international buyers may divert their attention and enthusiasm towards other suppliers from other countries for importing quota free garment supplies. Therefore, Bangladesh should emphasize on improving competitiveness by reducing total production and distribution time. The production and distribution time refers to the total time required for the entire process to take place, starting from the textile production to the shipment of the garment. However, the prerequisite of such a strategy is the existence of a strong domestic textile industry, i.e. the availability of quality fabrics locally. Bangladesh faces significant constraints in this regard for which it is difficult to establish a strong backward linkage swiftly.

In order to sustain and enhance Bangladesh’s position in the international market there must be a good balance between the two solutions: i) expansion of backward linkages which would improve competitiveness and ii) port facilities.

V. CONCLUSION

The study shows how backward linkage can reduce the overall lead time and increase efficiency and promptness in the entire process of the apparel industry. To compete in such a market where time has become a weapon for succeeding, Bangladesh has to take this into consideration and invest on textile mills for woven fabrics and strengthen the domestic fabric supplies. Moreover, the RMG sector is highly affected by the inefficiency of Chittagong sea port which can be reduced by expanding the port capacity just like countries such as- Sri Lanka and Myanmar who have achieved their export target for FY16-17.

REFERENCES


A Responsible Agricultural Supply Chain Model from the Perspective of Developing Countries

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Abstract – Agriculture plays a vital role in the development of the world economy especially in the case of developing countries. Faulty agricultural supply chain might be a constraint in the way of the world’s economic development. Again, applying advanced technology like artificial intelligence and Internet of Things in the agricultural supply chain might not be possible for many developing countries in the world because of the high expense and unavailability of the advanced technology. Therefore this paper suggests a model that can improve this situation in an economical manner. This report has the potentiality to guide the governments of developing nations and practitioners regarding the development of an agricultural supply chain that is economical, efficient and ensures the free flow of information. Furthermore, the paper has been focused on using cost-effective technology for poor farmers who grow crops and need financial assistance. Further research can be applied to examine the extent of applicability and sustainability of the agricultural supply chain model.

Keywords – Agriculture, developing country, supply chain model.

I. INTRODUCTION
Agriculture is one of the essential tools that can help developing countries grow their economies and thereby reduce poverty all over the world. It has been marked as a powerful device that can help underprivileged people raise their earnings. Around 800 million people living in rural areas around the world (78% of the world’s poor population) rely on agriculture to make a living [1]. Therefore, if the economic condition of these people changes, it will directly improve the world economy. Moreover, if we consider the living standards of these people, then it will be visible that they cannot even fulfill their basic needs within the present agriculture supply chain. For example, in South-Asia most of the farmers produce paddy or rice as their main crop, i.e. people eat rice as their primary food, but these farmers do not get much payment for their products. Instead they sometimes cannot compensate the cost that had incurred for producing these products, and as a result, the farmers’ economic conditions do not change slightly that deteriorate. The price of the food might be increased, but it cannot make sure that the farmer gets the intended benefit. In the sequence of the fact the world economy collapses. Improper and inappropriate distribution of food due to the information gap in the system storage is another issue of the agriculture supply chain. The world on the developed side using high technology and skills to overcome the situation but in the case of developing countries situated in Asia and Africa, this cannot be possible at least for the near future. However, the miseries of the farmers should be stopped as early as possible. This paper suggests a model that can improve this situation in an economical manner.

II. LITERATURE REVIEW
In developed countries, the agricultural supply chain has seen rapid changes along with advanced technologies. They used radio frequency identification (RFID) technology which is applied to the integrated food supply chain to replace bar code recognition technology, and they also built a management information system. [2] Some researchers in developed countries used the Internet of Things (IoT) to coordinate logistics and information flow, improve the integrated food supply chain management and reduce its cost. [3] Some established a system through IOT, which assess the quality of agricultural products and processed products “from farmers to table.” [4] In case of the developing countries of the world due to starting late agricultural development faces many difficulties, such as the backwardness of rural logistics infrastructure, low level of technology, lag agricultural supply chain regulation system and operation mode, weak administrative details and other issues. In most developing countries price discrimination is a significant problem in the agricultural sector which is also a significant barrier to maintain a sound supply chain. In India, farmers committed suicide because they even did not get the cost of production where profit is a dream for them. [5] We find from all the above discussions that the scholars have focused on macro-level, multi-round concept, circulation system, and other conditions and policy analysis, but all of these failed to address issues regarding the sparse population and feasibility of the application of IOT in developing and under-developed countries. Therefore a simple agriculture supply chain with regulatory commission might proof itself economically active base.
III. DISCUSSIONS

It is a simple agriculture supply chain from supplier to consumers which is controlled by the Agricultural Supply Chain Regulatory Commission (ASCRC). ASCRC is an entirely IT-based organization which is will be created under the act of government. ASCRC will also work as a Datacenter for every chain member. ASCRC has both legal power and advisory power. Under the legal power, ASCRC determines price, control quality, storage, distribution, and raw material supply. It can recommend banks and other financial organizations to provide financial support to the chain member especially farmers under the advisory power. Farmers are poor in developing countries, and they do not get fair prices after the production and based on these problems of the farmers the ASCRC is suggested. The three main functions of ASCRC are Arrangement of Financing, Price Determination, and Data Center.

Arrangement of Financing:

ASCRC will arrange loan with interest of single digit or financial aid for the farmers with the help of bank and financial institution on the basis of their land and harvesting time and with this financial support they will arrange seeds, fertilizers, irrigation and other raw materials for harvesting and this support is also adequate for their livelihood at pre-production period.

Price Determination:

The primary function and responsibility of ASCRC is to determine price for every product which is on the basis of farmers cost of production, and this price will be determined in such a way that the farmer receives profit more than his production cost, and it will ensure suitable price not only for the farmers but also for every chain members from distributors to consumers without just making it a burden on the consumers. Farmers will get their seeds, fertilizers and other raw materials from the suppliers at the right time at the right price. ASCRC will determine the maximum retail price of seeds, fertilizers and other raw materials that would break the supplier’s monopoly and will be helpful for the farmers.

Data center:

ASCRC will be an entirely IT-based data center for every chain member in the agricultural supply chain. This data center will be based on cloud computing and telecommunication. This data center will store every information of a farmer about what amount of lands he cultivates, the number of seeds, fertilizers or other raw materials he needed by using a cloud computing database. It will store data about suppliers and about what quantity of seeds, fertilizers and other raw materials they produce. The data center will create coordination between farmers and suppliers because with this data center suppliers can forecast their demand. The farmers can produce and supply by forecasting. This data center will store the price of raw materials, the price of the product (by each chain member). Suppliers, farmers, distributors, retailers, and consumers get their service in two ways; i. by web (provided by the website with the help of cloud computing) ii. By telecommunication (by call center). This data center will also track the information of price and product from farmers to retailers to maintain a sound agricultural supply chain.

IV. CONCLUSION

This paper analyzes the basic structure of the agricultural supply chain in developing countries and identifies the weak areas and proposes a model with an agricultural supply chain regulatory commission (ASCRC). The paper also describes the application of the commission and the three primary functions of ASCRC as arrangement of financing, price determination and data center. The governments of the developing nations should develop agricultural supply chain regulatory policies under which ASCRC can perform its core functions to achieve sound agricultural supply chain cost-effectively. The model should be applied in developing and underdeveloped countries to minimize the cost of supply chain and benefit farmers in the best possible manner. There is scope for further research in this area to extend the acceptability and applicability of the model. Further studies should be conducted on the development of a model that has sustainable solutions to the agriculture supply chain defaults.

Fig 1: A diagram on the Agricultural Supply Chain Regulatory Commission.
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An Empirical Study on Financial Risks in Agriculture Sector of Bangladesh

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Abstract - Many countries’ agriculture sector has proven phenomenal production capacity to dominate the world agriculture supply yet one of the most challenging business sectors. It is struggling to attain an inclusive growth and all-round development for decades. It involves multiple risk factors for the farmers, processors, intermediaries, suppliers, retailers and the firms originate that are to be managed. The descriptive study attempts to identify, evaluate, and explore the significant relationship between financial risk and sustainable agriculture industry. This research chronologically demonstrates a structured questionnaire across a few categories; also encompasses the influencing factors shaping the perception of farmers and agro-business specialist through quantitative analysis. This research furnishes some independent variables which are identified through correlation and multiple regression method to show the significance level with appropriate strategies also to review and appraise their performance towards a perception of the agricultural sector; this can add value to the society as well as an exemplary research for prospective researchers. The study suggests the policy interventions needed to mitigate risk and sustain Bangladesh agriculture industry.

Keywords - Financial risk, Agribusiness, Sustainability, Empowering.

I. INTRODUCTION

Agriculture plays a key role in Bangladesh’s economic growth. Overall economic development of the country is dependent on the development of agriculture sector. Due to a number of factors, Bangladesh’s labor-intensive agriculture has achieved steady increase in food grain production despite of unfavorable weather conditions. One of the major constraints that has been hindering sustainable growth and development of this sector is scarcity of fund amongst the poor farmers and others financial risks. This constraint can be overcome through proper form of policies to reduce risks and promote effective strategies [2].

II. METHODOLOGY

This is a descriptive research. Descriptive research is used to illustrate characteristics of a population or phenomenon being studied. There are different methods of researching on a topic (Experiment, Survey, Cross-sectional or Longitudinal study, History, Case study, Ethnography Action research, Narrative inquiry) and we heeded Survey Research technique here. This is a popular business/management research strategy. It allows the collection of quantitative data that can be examined through ‘Descriptive Statistics’.

It is crucial to endorse that our sample is completely representative. This paper narrates an investigation of the financial risk factors that regulate agriculture and agribusiness in Bangladesh. Non-probability purposive sampling method has been adopted to collect data for this study. In this regard, a questionnaire was devised with identified 15 variables that are associated in the agriculture sector industry by using five-point Likert scales rating from “strongly agree to strongly disagree”. Responses received from a focused group who are directly engaged with agriculture sector or agribusiness in Bangladesh. The sample size was 30 where respondents were from stakeholders of agribusiness, employees, farmers/producers, supplier/retailer, financial managers of financial institutions; all responses obtained through personal interview, phone conversation and email. As per the objectives of the study, the following hypothesis is developed for testing:

\[ \text{H}_0 \text{ (Null): There is no significant relationship between financial risks with a sustainable agriculture industry.} \]

\[ \text{H}_1 \text{ (Alternative): There is a significant relationship between financial risk for a sustainable agriculture industry.} \]

III. DATA ANALYSIS

There are fifteen variables derived from 15 questions which were designed for collecting data from the sample population.

Figure-1: Summary of data collection

\[ \text{H}_0 \text{ (Null): There is no significant relationship between financial risks with a sustainable agriculture industry.} \]

\[ \text{H}_1 \text{ (Alternative): There is a significant relationship between financial risk for a sustainable agriculture industry.} \]
From the above chart it is cleared that most of the respondents strongly agreed and agreed with the identified variables. So there is a positive relationship with their opinion and variables. Correlation Analysis is used to show the strength of a relationship among identified variables. It defined the strength of relationship of variables into four categories in terms of directions:


The correlation coefficient can range in value from -1 to +1. The larger the absolute value indicates the stronger relationship between variables. From the data analysis it is found that variables are positively, negatively correlated with each other.

**Figure-2: Correlation Analysis**

**Interpretation of result:** One of the variable direct selling has positive relationship with demand/supply where showing negative relationship with credit facility. Thus by correlation analysis represented strength of relationship with other variables.

Regression analysis is used to assess the association between or more independent variables and a single continuous dependent variable. To test the hypothesis, one way ANOVA has been used. For conducting this study there are two hypotheses with significance level, α=0.05; the hypotheses are –

**H0 (Null):** There is no significant relationship between financial risks with a sustainable agriculture industry.

**H1 (Alternative):** There is a significant relationship between financial risk for a sustainable agriculture industry.

The fundamental strategy of ANOVA is to systematically examine variability within groups being compared and also examine variability among the groups being compared. The null hypothesis in ANOVA is always that there is no significance relationship with means and alternative hypothesis contradict the null hypothesis.

**Table-1: Value of Regression Analysis**

**Interpretation of result:** Two ways can be followed to determine whether null hypothesis would be accepted or rejected. One is comparing by F-test value with critical value, if F-test value is greater than critical value that is F>sig.F , the null hypothesis would be rejected and another way is comparing P-values with Significance level , α=0.05; if P values are less than α=0.05 that is P < α=0.05 then null hypothesis would be rejected.

Therefore, from the result determined by the regression analysis, it is found that the value of F =1.27 is greater than value Sig.F= 0.32 and all P values are greater than α=0.05, so the null hypothesis (H0) rejected and established alternative hypothesis (H1).

**Financial risks and agricultural sector involved in Bangladesh**

More or less 70 percent of total population and 77 percent of its workforce lives in rural areas in Bangladesh. As part of their income, about 8:5% of rural households rely on agriculture. According to trade economics; GDP from Agriculture in Bangladesh enlarged to 10117.30 BDT Million in 2017 from 9922.80 BDT Million in 2016. GDP from Agriculture in Bangladesh averaged 8747.38 BDT Million from 2006 until 2017, feat an all-time high of 10117.30 BDT Million in 2017 and a record low of 7017.10 BDT Million in 2006. Agriculture and industry sectors devoted to the increase in the GDP growth in the final count [7].

According to the Bangladesh Bureau of Statistics (BBS); Agriculture grew 4.19 percent in 2017-18, way up from 3.06 percent in the transient estimate.
The World Bank published a report on agriculture status of Bangladesh which is showing:

a. 87% of rural households with income from agriculture
b. 65% of households rely on both farm and non-farm incomes
c. Irrigation augmentation, advanced technology, more dynamic markets, and widespread automation are factors behind the agriculture sector’s growth.

The agriculture sector is abounding with risk. In this sector financial risk is one of the high-priority risks. There are four main sources of financial risks:

![Financial Risk in Agricultural Sector](image)

**Prospective risk mitigation strategies:**
Mitigating financial risks from the agriculture sector are very challenging but the appearance rate can be lessened by forming proper and relevant crafts [8]. The following artifices can play an indispensable role to alleviate or reduce risks from the agriculture sector. Such as-

- Avoiding susceptibility to risk
- Crop diversification and Intercropping
- Diversification of livelihood sources
- Appropriation of forwarding cropping techniques (fertilization, irrigation, resistant varieties)
- Buffer stock addition of crops or liquid assets
- Crop sharing casual risk pool (contract marketing, future marketing, insurance)
- Coping with concussions (Ex-post strategies; social assistance, social funds, government incentives, cash transfer
- Reducing risk by evolving in capacity building
- Fabricator and Agribusiness Client Aptitude

**Solution to overcome weakness and challenges:**

**IV. CONCLUSION**

Farmer’s presence in the developing world is full of contingencies. The study has there is a meaningful relationship between financial risk and sustainable agriculture sector of Bangladesh. The research has fully defined the major financial risks and pinpointed the weights of them on farmers’ survival in Bangladesh. All those agricultural risks ought chronic and far-reaching adverse impacts on farmers’ life. State policy missteps in executing the agricultural risks and lack of known superintendence artifices have sparked the researchers to develop a process of bargaining the agricultural risk. The state should spend more consideration to these risks and continuation and field services should consider their obligations to manage the risks in the agriculture area [5].

**Recommendation**

Agricultural policy reform may be necessary to remove historical biases against agriculture, to help the sector become profitable, and sustainable [2]. This effort must be supported by a strong legal and regulatory framework.

**Future superintendence diminishing financial risk from agriculture sector for-**

- **Developing information system** – a critical component of most agricultural risk management strategies is access to information. Market information systems have positive influences on selling crops and livestock, helping producers to optimize prices received and better coordinate the timing of sales throughout the year. Weather information systems help farmers make decisive production and marketing decisions [1].

- **Empowering rural financial services**- having a financial practice in a resilient manner serving rural areas, is the best and sole most relevant program for letting effective risk management. Entrance to strong local savings institutions may allow growers to sell when the price is highest and purchase when it is lowest.

- **Promoting market-based price risk management** – Have to promote various mechanisms, such as buffer stocks and price bands, used to pursue price stabilization objectives. Governments may need to adopt an active role in facilitating the initial development of derivative markets, overcoming technical complexities, and ensuring that the concerns of the poor are adequately discussed [3].

- **Targeting worth of cash transfers and safety net programs** – Such programs fall into two levels – poverty protection nets to assure survival or reduce poverty, and transitional assistance programs that help producers conform to new market realities or production captivity. Cash transfer programs can yield significant extension benefits through income multipliers, stemming from an increased household investment.
• **Experimenting new passageways to agricultural insurance** – The potential to render effective insurance for rural producers is assuring, and it appears likely that new insurance products may ultimately become widely accessible and examined routinely by the private insurance industry. Field testing should be continued to assist the industry to develop and market insurance products valuable to poor farmers time to time.

• **Highlighting disaster planning rather than release** – Innovative invasions to address distinct disaster needs without compromising disaster risk-management manners either have not been contacted or have been designed poorly. These interferences need to be informed by sound technical analysis of how they can be better targeted, executed, and appraised as to their impact and sustainability.

**REFERENCES**


Proper Exposure Needed for the New Software Companies in Diverse Media

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Abstract – The main objective of the research is to find out the reason, about new software industries, which required exposing in diverse Medias. For Methodology approach—quantitative methods I’ve 20 questionnaires and 80 in-deep interviews; Microsoft Excel was used to analyze the relation and the cluster method to classify and identify the Factors and reasons with justifications. Intended for findings of the research mostly young consumers generally are future digital target market. Based on 14 employees of Software industries employees experience, a guide including manage with the challenges of Go to Market (GTM) activities are being observed. Also, the small ratio between the number of interviews and the number of questionnaires exist.

Keywords – Software and IT service industry, Social media Marketing, Digitalization, Adopting new technologies, E-commerce, F-commerce and so on.

I. INTRODUCTION

According to, ref [3] there are 1500+ registered Software and ITES companies. Among which, 1100 registered at BASIS. Considerable achievements in the IT sector have already been made over several years towards building a ‘Digital Bangladesh’ and more initiatives are coming[8]. So the prospects of IT industry are rising day by day. As ref [12] stated that, consumers will also adopt technology startups at a faster rate if they experience better quality. Software companies, as technology based organization, have the same vision. While renowned software companies emerged since early 1990 in Bangladesh. For that reason, new software companies needs much more exposure, not only in traditional media but also in digital media and Social media platform desperately. In response to this problem, my study proposes to investigate several options for doing enough pre-sale activities and go to market (GTM) activities for proper exposure. I have planned to carry out all-inclusive participatory investigation into options of questionnaire to identify the essential of exposure of new software companies. I will also consider less expensive ways to mitigate some or all of the problems noted above.

II. METHODOLOGY

METHODS OF RESEARCH USED:

A descriptive research was done on the respondents to evaluate the proper exposure needed the new software companies in dissimilar Medias like in print or digital media. Both primary and secondary sources of data were used in this research.

1. Secondary Data:

Secondary data defines the information that was collected by someone other than me. For my research the secondary data was collected from journal papers, newspaper article, conference papers, case study, film, online report, personal Quotation and Interviews and others papers. These have relevant information which was derived from the respective researches. The sources of information are given as APA citation in last section Bibliography. The research based done by secondary data. Since, primary research does not contain that much respondents. Along with that there are some limitations as well during conducting the primary research.

2. Primary Data:

Survey technique was to attain primary data. An online survey was done to collect the data required along with some face to face surveys which was later put as input into Microsoft excel sheet. Most of the data was collected from students while some of them had other professions. Along with them 14 employers of Software companies are also responds of the survey. A total of 80 respondents were taken through Google form survey. Apart from that other 10 respondents were collected through face to face interviews. Among those interviews every respondents were express descriptive ideas and shared positive feedbacks which is also mentioned in the survey results.

1.1. Respondents and Sampling Procedure

A. Populations:

The population I chose was from an age of 18 to over 56 years but most of them were from the younger age group. The population was all from Bangladesh since I didn’t have enough time, human resource and budget to conduct the survey globally. I also choose a group which had proper internet access and also active in social media. Along with this the face to face interview was conducted mostly from my friends and from my relatives and my colleagues due to the time constraints. Some of the job holders of Sheba Technologies Limited (A new...
software company) and other Software companies also participated in the survey which might make it an unbiased survey.

B. Sample

The sample number of the population was 80 and non-probability sampling was used because the exact population size was unidentified and the accessibility of the customer was not so easy, because I wanted to ensure more sample at Research instruments/ Questionnaire.

The types of question I used among 20 questions were Likert Scale, Nominal Scale, Interval Scale, and Ordinal Scale.

I have created some close ended question based on these types of measurement scales as well. In Likert scale questionnaire, categories such as “strongly disagree to strongly agree” were present. We also used single questions where the respondents answer to either “Yes” or “No” and some cases “Maybe” was there. Afterwards, I have put a rating based question on basis of 1-5 where 1 deciphers the lowest value and 5 decipher the highest value.

1.2. Collecting Data

The data was primary collected through google doc forms and some face to face surveys. The process was through self-administered questionnaires in the form. The information was later put as an input into Microsoft Excel Sheet to evaluate the information. Among those 80 respondents 12 of them are direct employees from Sheba Technologies Ltd. and 2 others from other software companies.

III. RESULTS

A. Figures and Tables:

The online survey has conducted through google form where 20 questions were plotted. Among those 20 questions the most applicable results are in use for stating the problem.
As in this chart the results shows that 45% people can’t recall any brand name of any software solution, which may a matter of concerns of Software companies in this competitive era.

Nowadays, in this contemporary world, the social media platforms play a very significant role for disclosure. Nonetheless, this graph shows that the around 50% people could not see the social media advertisements about any Software solutions. Which is very big missing body, almost update about their features. Ref [2] said, “Social media is not a media. The key is to Listen, Engage and Build Relationships”. On the other hand, about knowing Software companies name, people don’t recognize this brand. Noticeably it is because of less promoting of brands. According to ref [7], “Marketing is no longer about the stuff that you make but about the stories you tell.” So, lacking of advertising might cost in this huge competitive world.

Most people (around 53%) agreed that, Software companies are less public relation centric and more corporate client centric. This is a warning for lasting in future competitive market.

Lastly, the survey was about what would be the promotional tools they would like to refer for the software organizations. Above 56% said, that would be the social media platform and above 37% said about digital marketing. That is the most expressive way among social media. Software companies need to progress their public relations and advertisement unit. As the ultimate customers are directly related consuming the software solutions.

B. Face to Face interview reactions:

Ref [11] said, “Social media can augment when time and distance are issues, but you can’t replace face-to-face communication”. During face to face interviews responses of the people, I discovered some authentic reviews. That might not acquire in digital survey form. Most of the interviewers could not spot any Software Brands. Since the Software companies did not focus on any proper promotional activities they remain unspotted. Equally mentionable point is, the interviewees are not found any advertisements at all about the software corporations. The face to face interviewees ask to know about the services of companies. After that they could relate the Software companies services are here for the ultimate customers. Finally, I have asked them that what would be the promotional tools they would like to refer for Software concerns. They replied mostly the Social Media Tools and Digital Marketing Medias.

C. References from previous studies:

In recent years, Globalization, general access to internet and the wide spread of digital devices have made digital marketing a huge business. Compared to classical media forms like print, digital field, offers lowered costs and precise customer segmentation [9]. In Bangladesh, the Information Communication Technology (ICT) industry has consistently grown in recent years at 20 to 30 percent
I. INTRODUCTION

Software companies spend more than 75% of their marketing budget on traditional media like print and electronic media. According to a research by ref [10], the reason of brands failing today is because of low budget allocated for digital media communications, digital media communication gets on an average only 1.2% of the total communication and promotion budget. So, brands should go digital and increase digital marketing communication strategies.

According to a research by ref [10], the reason of brands failing today is because of low budget allocated for digital media communications, digital media communication gets on an average only 1.2% of the total communication and promotion budget. So, brands should go digital and increase digital marketing communication strategies.

IV. DISCUSSION

These are the observations and recommendations which will impact for the Bangladeshi software companies and existing brands for sustaining in the market. Further research needed to be conduct for giving better recommendations. Since, it has done only on 80 respondents and there was time shortage while conducting research.

V. CONCLUSION

The outcomes are to some degree adequate yet not exceptionally dependable. Because only few respondents were surveyed in which most of them were students, research area was limited as I choose from a certain area only, who are finalizing their study. In collecting primary data, it is really hard to get correct information from people as they might not feel comfortable or provide their false feeling. Not only that, different types of
professional personnel also took part in the survey. Lack of time was a great issue in my survey and for this mostly online survey was conducted. Most importantly, the budgetary issue is another limitation of my study. If I had enough time to survey others professionals from all over our country then it would have been more sophisticated and strong study. More elaborate study need to do further by gathering more respondent reviews. Along with that, the research is conducted based on several secondary data which were rather inefficient or unreliable.

REFERENCES


A Research Framework of Supply Chain Logistics using Horizontal Collaboration for Developing Countries

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Abstract - In the previous world, industries and enterprises were faced challenges to adapt to the market changes by responding quickly and there was an intense competition among them to survive in the business field. But now these competitions are turned into cooperation to confront the situation by working together, setting up their goals and adapting joint ventures. So, not only the initiative but also cooperation is needed to create high correspondence on several information frameworks. Firms or industries performed their internal activities to survive in the market through vertical collaboration in the supply chain which is quite popular. But still, industries are not quite satisfied so that they are finding new feasible ways to perform well in the present market field. So, considering all these terms and issues a model is proposed and explained in this paper based on horizontal collaboration with a view of improving the infrastructure development of Industries in the Supply Chain Management sector. The major preferred standpoint in horizontal collaboration of supply chain is the organizations can coordinate the request of the market by using the supply capacities of intra-authoritative systems under various hazard situations. To accomplish the win-win circumstance, the partners under collaborative supply chain need to share their benefits and there should remain some impalpable perspectives such as faith on each other, adaptability, combined action, patience which needs to be considered.

Keywords - Supply Chain, Horizontal Collaboration, Logistics

I. INTRODUCTION

Supply Chain is a system which consists of organizations, people, activities, information, and resources involved in supplying a product or service from supplier to customer; and the system has six drivers like facilities, transportation, sourcing, information, inventory and pricing; these are also known as logistics and cross functional drivers. Two types of collaboration are currently practiced around the world: vertical and horizontal supply chain collaboration. Around the world organizations tangled in collaboration practices might be related somehow: for example, they might belong to different levels in a supply chain (vertical collaboration) or to the same level in different supply chains (horizontal collaboration or HC). [1] In vertical collaboration, or supply chain management (SCM), agreements take place among organizations fitting to different levels inside a supply chain. Besides, HC refers to joint actions performed by several companies working at the same level of the supply chain In South East Asian region, Bangladesh is a developing nation which has a lot of infrastructural problems surrounding it. Nowadays Supply Chain Collaboration becomes a trending topic and no doubt the corporations that collaborate cogently across the supply chain have appreciated impressive reductions in inventories and prices, alongside enhancements in speed, work levels, and client satisfaction. Supply chain collaboration is of two types, vertical collaboration and horizontal collaboration. Horizontal collaboration is an inter-departmental relationship between two or more industries at the same level or phase in the supply chain to permit extra simplicity of work and participation towards achieving a typical goal.

II. PROPOSED MODEL

The system which is going to be proposed is called ‘HoriCol’ which will provide facilities to two companies as if they can horizontally collaborate with each other. In this system, we will provide:

- Shared Transport system
- Shared Storage Capacity
- Joint Procurement Service
- Control Tower facility

Besides, cloud computing system will be also introduced here. For describing the plan, a specific area of Dhaka is chosen as a region for our proposed system.
III. HOW THIS MODEL WORKS

HoriCol is a proposed model which is going to help two companies to collaborate horizontally with each other. To illustrate this model, we assume two companies: Company A and Company B; they will collaborate horizontally. HoriCol provides E-Cargo-pooling and Control Tower facilities. So, this model will work in few steps:

• At first, both companies, Company A and Company B send a signal (confining amount and destination) to the Control tower via mobile apps/software.
• Then, Control Tower sends this message to Cargo station 1. After that, a cargo will start journey towards company A and company B to collect the products/packages. Point to be mentioned that, only driver will know the amount of package and the destination.
• During package collection of cargo, companies pay 50% of total bill to HoriCol via QR Code.
• After collecting packages from both companies, cargo will again send a signal to Control tower during delivery to distribution point of both A and B. When all the products will be delivered by the cargo, companies will receive the delivery message on their apps/software, they will pay total bill to HoriCol in previous way automatically.
• Finally, cargo will send a signal to control tower after reaching Cargo Station 2.

IV. PROPOSED NETWORK DESIGN

This model can be applied on any kind of industry. For better understanding, here two companies, Company- A & Company- B are used. Both companies are the customers of HoriCol; can check their transportation status, inventory, package delivery in real time via apps/software. And companies can also propose the route of transportation. HoriCol can optimize the delivery point, forecast route status by analyzing weekly road condition with help of big data analysis and can change the whole route.

V. PROPOSED MODEL FEARTURES

A. Shared Transport System

Bangladesh is an emerging developing nation in the South-Asian region. The practice of shared transport service is already available in this region, but it is not that efficient enough to gain potential optimization across various industrial sectors. As our government so much concern about digitalization, we may focus on the technology centric shared transport service to build an efficient supply chain system.

As we know in case of sharing transport system among the industries, Cargo pooling is a popular concept in the world. So, to keep pace with the era of digitalization, we think about E-Cargo pooling to make efficient the transport system among various industries. We believe that this system not only help in maintaining effective horizontal collaboration among industries but also reduce the Traffic burden.

<table>
<thead>
<tr>
<th>Focus Point</th>
<th>Concept</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two companies or multiple</td>
<td>Easily Accessible</td>
<td>Customized Service</td>
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<td></td>
<td>Lower the cost</td>
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<td></td>
<td>Connective O2O service</td>
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<tr>
<td>Internet</td>
<td>Make transparent information</td>
<td>On-time information system</td>
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<td></td>
<td>Real time monitoring</td>
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<tr>
<td>Uneven distribution of capacity</td>
<td>Optimize the transportation route</td>
<td>Efficient and on-time transportation system</td>
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B. Shared Storage Capacity

To deal with volatile demand and rapidly changing manufacturing technologies, as a solution, shared storage capacity among companies at the same horizontal layer in supply networks is discussed in this section.
With HoriCol, supply chain partner records will be completed, organized and always up-to-date. Integrate content from any source, into a single system of record that will provide transparency throughout the supply chain. Automated collaboration tools will help streamline partner data collection, and administrative management controls will ensure the integrity of supplier records.

**Single system-of-record**
- Access supplier, distributor and service provider data
- Manage locations, contacts, documents and related records
- Define business units, regions, departments and workflow roles

**Reliable data efficiently managed**
- Automated data collection and collaboration tools
- Robust document management with acknowledgement and signature workflows
- Monitoring and task management for expired documents

**Specialty:**
In this shared storage capacity,
- HoriCol will secure their data and just send data real time to them.
- Two companies won’t be able to know or access data of each other.
- Mobile Application based real time data transfer.
- This system will give a flavor of Digital Supply Chain to customers.

**C. JOINED PROCUREMENT SYSTEM**
Joint Procurement Service (JPS) for HoriCol is given below:

All the companies get information of our JPS model by using cloud-based computing system from our control tower facilities. At first, the two or more companies sign into a contract to make joint procurement system by using our apps. As per the figure, then we identify companies those are mutually signed contract with each other by using our database system. Then we identify the amount of goods required for the both companies. Then we develop the specifications of goods for each company. Then we make research on supplier of the goods & make a value analysis for every product for the both companies, then make the price negotiation with the suppliers & purchase the product and control the inventory & disposal system.

**Advantages of JPS:**
1. Combining purchasing activities leads to economies of scale.
2. The total administrative work for the group of authorities can be substantially reduced.
3. Joining the procurement actions of several authorities also enables the pooling of different skills and expertise between the authorities.

**D. CONTROL TOWER FACILITY**
HORICOL WILL PROVIDE COLLABORATIVE CONTROL FACILITY TO COMPANIES. BY THIS CONTROL TOWER, HORICOL CAN OPTIMIZE THE SUPPLY CHAIN, DESIGN AND RUN PROCESSES, TAKE DECISION VIA DATA ANALYTICS.

**Advantages:**
- END-TO-END PROCESS ENABLEMENT
- MAXIMIZE UTILIZATION DEGREE, CENTRALIZED AND NEUTRAL DECISION

**VI. EXISTING SCENARIO OF LOGISTICS IN DEVELOPING COUNTRIES**
As the day goes on, the demand for logistics in the supply sector is increasing, in the industries and factories of
developing countries. But still there is lack of accurateness in infrastructural development in logistics of developing nations. Growth of forming of logistics sector increase rapidly in developing countries as a lot of industrial zone has grown up. [3] The practice of Collaboration has not yet been developed in developing nations. But already developed countries improve their business through proper collaboration that may be vertical or horizontal. The presence of coordinated effort of supply chain has created powerful production network activities in those developed nations. Lack of political permanence, Inadequate technological application, Insufficient flexibility of transportation, Longer procedure of issuing order, all of these are the current scenario in logistics of rising nations like Pakistan, India, Bangladesh, Bhutan, Vietnam, Thailand etc. and these obstacles throw direct challenge to these nations in the issue of improving supply chain systems in transportation. [4] Logistics sector now is one of the promising sectors for developing nations as maximum goods exported in abroad after manufacturing in factories which assist in developing the growth of total economy. Because of improper quality of pathway and proper communication network problem most of the shipment delayed as a result most of the buyers shifted to other countries whose transport and communication network facilities are developed enough to serve. [2] In this case, developing nations are lagging behind from developed countries. So, rising countries need to develop new technological based infrastructure in logistics by avoiding the traditional one as soon as possible for improvement in supply chain system.

VII. COMPARATIVE ANALYSIS

The proposed model will maximize the capacity and utilize the production system for long term period whereas existing models in developing countries are based on short period. It’s capable of managing the contacts, locations and other documentation registers and flexible transportation network as well as capable of minimizing transportation time. The existing models have no such caliber to do that. The model will provide high transparency as data recorded and seen by the supply chain partner. Whereas existing models cannot guarantee any transparency or security of exchanging data in between supply chain partners. It will also secure the environment as CO2, GHG and other toxic gases emission is less. By this model, supply chain partners requests for goods transportation are taken immediately and transformation of real time data, forecast and decision making by big data analysis. Existing models of developing countries have no such technology in practice. Reliability in system as goods delivered on time and responsive as well as it will maintain quality standards and facilitate faster delivery to distribution channel.

VIII. DISCUSSION

As one of main goal of this model is to reduce traffic burden by horizontal collaboration across the country, promoting E-cargo pooling system that can save time, costs by sharing and reduce traffic at the same time. As they’re already the acts of horizontal collaboration among industries in other developed countries, introducing horizontal collaboration will make existing supply chain more efficient. Authors believe that this model will be the best fit for current supply chain ecosystem. The proposed model about procurement services can secure the information of available data of goods transportation if any company don’t need to share their data with others company. The proposed service can contain information about supply chain partners, volume of goods, location, distribution channels etc. As government emphasis much on digitalization, this system is fully apps software based that contact the customers in real time to make the supply chain more effective in horizontal collaboration.

IX. CONCLUSION

To sustain and adapt with continuously changing global supply chain, Bangladesh as well as developing countries needs to follow the recent collaboration system. As the government of developing countries like Bangladesh truly believes in the growth of digitalization, authors believe that the proposed model ‘HoriCol’ will be the best suited for country’s supply chain ecosystem. They also believe that this model will be the first step towards fourth industrial revolution for Bangladesh reducing traffic burden, making environment safe and creating existing supply chain system more efficient across the industry.

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Research on Strategic Human Resource Management Innovation-Oriented

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Abstract – System of human aid management innovation-oriented is exactly the vital way assisting enterprise’s innovation. This research reviewed innovation theories from aspects of economy, administration and sociology, summarized domestic & foreign scholars’ research on human aid management and business enterprise performance, and outlined associated domestic & foreign researches on human resource management innovation-oriented. On the foundation of all these, this paper constructed machine of research method with ordinary research. The administration of human sources has passed through much transformation over the past decades, due to modifications in markets, industry, technology, costs, workforce, and employer-employee relationships. The management of human assets is no longer restricted to a single department; it is now a shared accountability across organizations. In trendy generation of heightened competition, firms are turning to modern human aid practices for aggressive advantage, and human resource insurance policies and exercise are more and more integrated with business strategy, each domestically and internationally. Improving people’s ability is an actual ‘win-win’ for all the economy, for society, for employers and of course, for humans themselves. In each and every single EU country, unemployment quotes systematically range with qualification levels. The employment charge for these with high skill stages across the EU as a complete is approximately 85%, for medium ability levels 70% and for low skill tiers it stands at 50%. (European Commission 2010)


I. INTRODUCTION

Human Resource Management or personnel management is one of the trends of modern-day management, aimed at the company and development of human sources in a unique company. The fundamental purpose of any HRM branch is hiring, training, enhancing and motivating of employees. The HRM process includes formation, arrangement, creation, and development of human resources of an organization.

If your purpose is to come to be an HRM specialist, you keep in thought that Human Resource Management research paper is one of the frequent assignments the place a character opinion or reality has to be validated with assist of references and arguments (if required). This discipline is continually developing, so students need to be conscious of each and every piece of this change. To complete HRM undertaking effectively, one has to pay interest the facts below.

HRM is a human element of business management and interactions between the agency and its employees. The essential target of workforce administration is to ensure the fantastic use of the company's human sources so that the organization can attain the best plausible advantage from their skills, and people would get the maximum feasible payment and psychological pride from their toil.

In 1911, American Frederick Winslow Taylor contributed a lot of efforts to HRM subject by using publishing his book titled "The Principles of Scientific Management," a deep and professionally written HRM review, which highlighted the which means of human factor in improvement and progress of various companies. He was one of the first to find out about overall performance and behavior of humans at work. Taylor assumed that the manufacturing process would flip out to be more environment friendly if specialization and division of labor have been accelerated and increased.

Over time, human useful resource administration moved to a separate area, and the first venture of a new-formed department used to be the environment friendly enterprise of employees, and then their motivation when performing distinct job assignments. Human Resource Management is a complicated self-discipline with a large range of issues, which can be developed in one's HRM term paper. This science, first of all, research administration problems of personnel via a long-term strategic coverage of the organization. Its main goal is to maximize an effectivity of hired employees. The personnel administration departments are charged with the project of recruitment, selection, and retention. They are also accountable for merchandising and rewarding employees. Besides, HRM departments deal with employees' wages, their security and health via preserving a regular working surroundings amongst workers, excessive enterprise ethics, and company culture.

II. METHODOLOGY

Overview of research in human aid management; sources of matters in human useful resource management research; research trouble identification and definition method with unique reference to human useful resource management; research purpose, targets and importance with reference to human useful resource management; hypotheses; literature...
overview focus, scope, fashion and purpose; sorts of research design; desire of a design; population; pattern design; facts types; collection contraptions and procedures; records analysis: procedures, methods and results; quotation and referencing practices; overview of research concept writing with particular reference to human aid management. To underpin my research, I have carried out a literature study in different Human Resource Management journals. I based my research on five international peer-refereed journals that are expected to represent main trends in HRM academic studies: Human Resource Management (HRM), Human Resource Management Journal (HRMJ), The International Journal of Human Resource Management (TJoHRM), Human Resource Management Review (HRMR) and Action Research. For this research it is essential to know to what extent the action research has been used in the Human Resource Management field.

Organizational cases on behavior-based safety (BBS) in India (Kaila, 2011)

Through BBS training interventions among multinational organizations in India, the observers try to create a safe work environment. Action research is a part of this research. In this research, action research has been used by the observing the participants whom are undergoing the BBS process. The observers were asked to identify the number of safe/unsafe behaviors and unsafe conditions of the workers. Most of the time the observers were people from the plant who were trained to do the observations of their coworkers. The study has been carried out over a time period of 12 years, the research has been done among 64 organizations in different working fields such as: petroleum, engineering, automobile, cement, power, chemical and pharmaceutical. To get enough observers to identify the safe/unsafe behaviors and the unsafe conditions an employee faces, some employees were trained to be an observer. In other words, the observer observes their coworkers. BBS interventions help to give a rise in the number of safe behaviors and a decline in the number of unsafe behaviors. Besides that, a BBS training also reduces the number of unsafe conditions in the organization (Kaila, 2011). It is necessary that the outcomes of the research are written and visualized in an easy way, just like a consulting company will present their findings to an organization. To build trust, employees will be more open during the interview. This will lead to a greater understanding of the organization for the researcher and thus for a better solution to the problem. The interviewees and the focus group of the research are at the same time the subjects under study and the key stakeholders that give insight into the organization.

It is quintessential that the consequences of the research are written and visualized in a convenient way, simply like a consulting corporation will current their findings to an organization. To schematically illustrate the hints for HRM action research I put them in six steps:

1. Finding an overlapping pastime between the researcher and the enterprise and define the research goal.
2. The researcher holds interviews and locate the focus group.
3. Performing surveys, this step is no longer usually the case. The researcher will only raise surveys if it is treasured for the organization.
4. Using archival facts that the organization made reachable to the researcher.
5. Combining all the gathered data.
6. Writing a document with the conclusion of the research.

An action research manner starts with a dialog between the researcher and the company in which the researcher will do the research. They have to discover the intersection between the researcher’s hobby and the challenges the organization faces. If they can come to a sufficient agreement, the researcher will start his/her research. By doing an action research process, it will not be the case that in all phases of the project one or more persons will participate. Sometimes it is necessary that the researcher does some research on his/her own, instead of working together with the employees of the organization. Because of the involvement of all stakeholder of the organization, the researcher will get access to more data and gives a better overview of the problems and or the benefits of the organization. That is why the first step is the most critical; it has to be made sure to the organization and all his stakeholders that engagement in the process is of great importance. The researcher needs to identify what the strategic issues are of the organization. It is essential that the researcher keeps these issues in mind, so that the outcomes of the research will correspond with the viewpoint of the organization. As said before, trust is an essential element in doing action research. Interviews are a key part of the action research process, if a researcher has built trust, employees will be more open during the interview. This will lead to a greater understanding of the organization for the researcher and thus for a better solution to the problem. The interviewees and the focus group of the research are at the same time the subjects under study and the key stakeholders that give insight into the organization.
the method is of great importance. The researcher needs to become aware of what the strategic troubles are of the organization. It is critical that the researcher continues these issues in mind, so that the effects of the research will correspond with the perspective of the organization. As said before, have confidence is an imperative thing in doing action research. Interviews are a key phase of the motion research process, if a researcher has constructed trust, employees will be more open throughout the interview. This will lead to a greater understanding of the company for the researcher and thus for a better answer to the problem. The interviewees and the focus group of the research are at the same time the topics under study and the key stakeholders that give perception into the organization.

III. RESULTS

For this research paper I was found some important information about human resource management in several organization link Bangalink Company, Humac Lab and also Asif enterprise limited. This three company show some significant part of human resource management like what are the good impacted of human resource management in the organization.

✓ Worker are motivated to work
✓ Worker work effectively
✓ Production possibility is so much high because of proper human resource management.
✓ Bangalink Sim Company is the company where the company is by the people for the people and to the people so they need a strong human resource management.

Finally, the author would like to say that the proper human resource management is must for every organization because without it company cannot run properly because, if people are not working proper how company run and I believe human resource management is the key to success any organization.

IV. DISCUSSION

The relationship between Genius and performance: The second key question that Meyers et al’s discussion of the nature of Genius raises for us concerns how gifted men and women performing the identical function in the two distinctive contexts can have exclusive performance outcomes.- or how does Genius translate into performance. While Meyers and her colleagues provide a very beneficial precis of lookup on brain transfer, this literature circulation has its roots largely in how athletes can transfer their athleticism shape one sport to another. While this raises some necessary questions, it fails to think about how an individual doing the identical role can display markedly exclusive overall performance tiers in two different organizations. One compelling empirical example of this trouble is Huckman and Piso’s (2006) find out about of cardiac surgeons performing the same mission throughout multiple hospitals at approximately the same time. Their find out about located that the overall performance of man or woman surgeons differed across different hospitals.

Surgeons carried out higher (measured through risk-adjusted mortality) in hospitals where they carried out a higher range of tactics in contrast to those where they performed a decrease range of procedures. The reality that the equal talented healthcare professional can perform in another way in extraordinary hospitals at roughly the equal time may tentatively be explained by means of the surgeon’s familiarity with imperative property in the clinic such as specific employees, group structures, and operating routines blended with the truth that surgeons with higher volumes at a precise health center may additionally be able to convey their have an effect on to endure in ensuring access to higher resources. This brings to the fore the social and bodily contexts in which talents perform. The importance of context is additionally probable to translate into variations when an intelligence changes organization. Empirical proof suggests that gifted humans with tested data of superior performance find difficulties performing at the equal or higher degree when they move to a new organization. For example, a learn about of Wall Street equity analysts determined that 85 percent of those interviewed believed their overall performance used to be impartial of the companies they worked for and rather portable, highlighting the view amongst these analysts that talent used to be 5 what differentiated overall performance (Groysberg, 2000). However, almost a decade of study, confirmed that big name performance used to be not as portable as believed and when famous person analysts switched employers their performance dipped significantly, a dip that lasted for five years suggesting that the translation of brain into overall performance is no longer stable (Groysberg, 2010). While Groysberg factors to the importance of company sources and abilities in facilitating the exceptional performance of celebrity analysts (a topic to which we return below) it is also possible that to a diploma at least the drop in overall performance may be explained by way of a lack of adaptability amongst the inventory analysts. The role of context is reinforced with the aid of Groysberg’s study of former GE executives who are hired as chairmen, CEOs or CEO-designates by means of different firms. Founding that even generic managers, who would be perceived to have an exceedingly accepted skill-set visa-vis other classes of managers, specialize in context-specific capabilities and that their human capital is only of fee within the identical context. In different phrases the place managers moved to firms whose structures did not resemble GEs, where managers modified industries, where the strategic desires of the new association differed from the executive’s experiences the hire tended to be unsuccessful in terms of the economic overall performance of the new firms. Or drawing close the debate from an alternative perspective, Dokko et al (2009) point to the viable for rigidities owing to norms, schemas and scripts which are received in one role, leading to inappropriate behavior in another role, which can at least partly offset the benefits of prior related experience. These studies advise move the debate beyond the interaction of nature-nurture and highlights the importance of understating how talent, whether or not
innate or acquired, interprets to organizational overall performance in specific contexts. People are the most necessary asset of each and every organization. This is in particular true in latest challenging business environment, the place human assets are considered as an integral enter for organizational effectiveness. Since there is a strong relationship between the exceptional of human sources and the overall performance and success of an organization, companies the world over are now striving for positive management of their human resource base.

The management of human sources has advanced in a number of phases over the twentieth and into the twenty-first century. As an occupation or a department within an organization, this vicinity first got here to light between the first and 2nd world wars, underneath the term 'human relations.' Subsequently, as trade unions became increasingly powerful in the middle of the century, the term 'industrial relations' grew to be popular. The phrases 'personnel administration' and 'personnel management,' collectively with the much less popular 'employee relations' and 'manpower management' emerged in the late Sixties and 1970s, due to the developing complexity of employment law, and ongoing concern about change unions.

At the time, the administration of human beings in agencies used to be viewed to be the accountability of the personnel function. As the personnel feature grew in scope and importance, monopolizing the management of people, these in managerial and supervisory positions were left with little to do when it got here to such things to do as the acquisition, improvement and compensation of human resources; the sketch of work systems; and labor relations. At the identical time, due to the fact personnel professionals were more and more concerned with rules and regulations and were on the whole seen as preoccupied with problem-solving, they were often left out of the strategic questioning of their firms.

The 1980s introduced new challenges for commercial enterprise organizations. In a generation of increasing competition, as the global taking part in subject became some distance extra aggressive and unstable than ever before, firms had to strive to achieve aggressive gain each time and wherever possible. Business was also altering at a much quicker fee and this used to be accompanied via excessive uncertainty.

As an end result of rising costs and increasing aggressive pressures on profit margins, firms also realized the need to be greater cost-effective. Trade union energy declined, and the 'me' era emerged, with its emphasis on individualism. There were additionally changes in organization structure, as firms decentralized duty to business devices constructed around merchandise and markets to get nearer to their customers. Organizations grew to become flatter, leaner, and extra flexible.

The technological revolution also posed amazing challenges for businesses, with improvements such as the introduction of facts science and computer-integrated manufacturing, which led to issues that had to be managed 'across' the organization and which themselves referred to as for a greater built-in view of the organization. The accelerated pace of new product development also supposed that humans in exclusive functions such as design, marketing, manufacturing and finance had to work lots more closely together than before. Rapid technological trade also led to improved demands for new capabilities through sourcing, educating, and retraining.

In addition, workforce values have been changing: the greater percentage of better-educated "knowledge workers" were increasingly more in all likelihood to demand self-actualization, causing higher attention to be paid to such issues as communications, participation and motivation. Firms in countries with growing old populations confronted the greater challenge of constrained availability of labor, amid a shrinking workforce. Thus, a premium used to be placed on the recruitment and retention of excessive great employees.

In general, the firms that survived or came on the scene after these changes, have been more complex in phrases of products, locations, technologies, enterprise functions, clients and markets. These changes led to an alternate in the image and role of the personnel function, leading to every other alternate in identify to 'Human Resource Management.' At the identical time, the management of human assets moved from a department function, to a shared duty among managers and non-managers, personnel or human aid directors, and line managers. In the pretty competitive, internationalized business structure that emerged in the twenty-first century, human aid management grew to become critical to gaining or retaining an aspect on opponents (Anca-Ioana, 2013; Brauns, 2013).

The lookup heritage the report of the party’s 17th session in October, 2007 explicitly declared to assemble progressive u. s. a. through promoting of independent innovating competence! Our country's scientific innovation stage still lags at the back of world level and there remains large disparity. Lu Yongxiang, the vice chief of Standing Committee of the National People's Congress committee, chief of Chinese Academy of Science and a dual academician wrote which proposed that promotion of impartial innovating competence ought to be guided through scientific improvement concept, scientific innovation need to be guided through scientific improvement concept, and request of scientific development thought ought to be carried out to scientific innovation's each aspect. To insist Chinese characteristic independent innovation path ought to take promotion of independent innovating competence as the necessary assignment of the current microscopic subject - corporation organizations. Therefore, developing gadget of human resource management innovation-oriented helps to promote enterprise's impartial innovating competence and hurries up enforcing approach of to construct innovative country.

APPLICATIONS

With the modifications in image, role and identify of the human resource administration function, came a quest for a new sort of innovation, as corporations recognized that
the traditional sources and capacity of competitive advantage, such as capital, technological know-how or location, had come to be much less significant. Innovative human resource practices have now grown to be one of the bases for aggressive benefit — no longer as a depend of trend, however as an alternative of survival.

Employee acquisition duties are pleasant performed in the context of an organization's culture. All things being equal, selection have to choose these candidates who show up to 'fit in' with the prevailing organizational culture, be it a lifestyle of empowerment, participation, equal opportunity, and any one of the many different sides of culture.

Innovative employee acquisition strategies include:
- greater significance attached to the suit between character and organization culture
- emphasis on 'career,' not 'job'
- selling organization picture to appeal to plausible employees
- referral bonuses
- sign-on bonuses for new employees
- psychological testing
- developing industry-academia interface

2. Employee Retention Strategies

Employee retention refers to the measures put in place to maintain personnel in an organization, therefore lowering the labor turnover rate.

Innovative worker retention strategies consist:
- evolving a best work environment
- deferred compensation
- competitive salaries
- faster promotions
- greater work autonomy

3. Compensation and Incentives

Compensation includes the entire vary of rewards and incentives that are utilized in relation to employees. Intrinsic rewards are these that are inside to a person, such as job satisfaction and self-esteem; extrinsic rewards are greater tangible, and vary from wages to worker inventory ownership plans (Grønhaug and Nordhaug, 1992). Compensation must be managed, alongside with worker attitudes toward compensation. Incentives are these choices that have a tendency to encourage personnel to will or to act as the company desires.

Innovative compensation and incentive strategies include:
- increasing the component of variable pay
- stock options
- combining character and team incentives
- performance-linked incentives
- customization of perks to person needs
- offering a variety of allowances
- conducting compensation surveys

4. Benefits and Services

Similar to compensation and incentives, advantages and services may additionally shape section of an employee's remuneration package, and might also encompass medical care, loans, travel, accommodation, catering, and so on. Many employers, for instance, provide Employee Assistance Programs, which are worker advantage applications commonly provided in conjunction with a fitness insurance plan. Such Employee Assistance Programs goal to help employees manage private issues so that they do no longer negatively influence their work ability, health, or well-being. These programs commonly encompass assessment, non-permanent counseling and referral services for employees and their family members.

Innovative benefits and services strategies include:
- a center of attention on long-term advantages for employees through alternative insurance plan and health management schemes
- giving advantages directed at employees' families
- flexible worker advantages or the cafeteria approach, the place employees select from a menu of benefits
- child and elder care programs
- Improvements in retirement benefits

5. Rewards and Recognition

Rewards and focus are used to motivate and motivate an organization's employees, and wonderful reward management will promote consistency of exercise in this area.

Innovative rewards and attention strategies include:
- performance-linked rewards
- flexible rewards
- cash rewards for remarkable performance
- rewarding group performance

Limitations of the Study:
The study used to be based on the pattern taken from a mid-sized IT organization. This lookup was once conducted on a pattern size extensively much less than the real quantity of particular employees. This was due to the incapability of personnel to respond, limited availability of resources, and extraordinarily busy agenda of most of the employees. The findings and conclusions are primarily based on the expertise and ride of respondents that is every so often challenge to bias. Sample dimension of companies and personnel may also now not be massive enough to represent the unknown measurement of the universe.

V. CONCLUSION

Engaged personnel lead to elevated productivity, retention, client loyalty, and profitability. Smart corporations’ focal point on both the lead and lag warning signs of business success. Therefore, business leaders want to know about the engagement degrees as tons as they want to recognize about other necessary management information, such as financial, productivity, and purchaser data. Robust, business-oriented measurement and evaluation is required to become aware of the key drivers of engagement for your organization. Key insights are provided when businesses comprehend whether or not employees are engaged to both—the job that they do and the organization that they work for. This information allows agencies to predict behavior and it’s had an impact on on key enterprise metrics. Measurement besides action can do greater damage than good. Simply surveying for the cutting-edge engagement stage and then doing nothing with that facts
regularly leads to personnel feeling that they are not being heard, which in turn can negatively affect morale and have faith levels. Identifying and examining engagement degrees and the drivers of success is the first step. The venture is in equipping your organization to conduct this workout at everyday intervals to measure the success of steps taken. Organizations want to put in effort to ensure that change is embedded in the organizational subculture so that the team of workers remains targeted and aligned to the commercial enterprise strategy. An engaged group of workers is the key to sustained competitive gain and accelerated business performance”.

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Abstract – This paper analyses credit risk management in developing countries with respect to the banking industry of Bangladesh as this industry is confronted with various challenges. Information and innovation in that field have expanded as credit risk management departments of these banks are accountable for assessing the credit risks. Nonetheless, accessible information demonstrates emerge in the value of non-performing loan recently. As a result, our main focus is to determine challenges faced by the banks while operationalization of credit risk management policies, and execution of strategies in those banks. A few banks may have widespread risk management policies and strategies; however, our study justifies that their execution can be incorrect. Critical analysis of this study includes examining the portfolio feature of selected banks as well as investigating credit risk policies with relevance national benchmarks. We implemented case study approach which was both exploratory and explanatory for a comprehensive analysis. We obtained primary data from various personnel of Credit Risk Management departments, and the bank's portfolio loans structure were acquired from annual report and different journals as a form of secondary data.

Keywords – Credit Risk Management, Credit Risk Analysis, Credit Risk Monitoring

I. INTRODUCTION

Credit risk management is the discipline of moderating losses by understanding the capacity of a bank’s capital and credit loss reserves at any given time – a process that has long been a trial for financial organizations. The first measure of effective credit risk management is to realize a complete perception of a bank’s overall credit risk by viewing risk at the individual, customer and portfolio levels. This study illustrates the descriptive measure of credit risk management in banks because it helps them to enhance their business and at the same time assist customers better where Credit risk refers to the possibility of a borrower to fail a payment, in which case the bank incites a loss. In this research, different bank employees and top executives who are related to credit management have been selected for the survey.

Objective of the study:
Advancing is one of the main factors for balance sheet of a bank. So, profitability of the bank is greatly involved with the lending practice to borrowers.

Principal Objective: The prime objective of the study is to find out areas which are prerequisite to improve or incorporate for minimizing risks allied with each lending.

Explicit Objectives:
Connecting of Credit Risk with Credit Monitoring.
Making relationship of Credit Risk with Assurance Factor
Associating of Credit Risk with Consistency.
Identifying the proper guideline which is matched with bank lending operations.

II. RESEARCH METHODOLOGY

This research attempts to investigate the overall credit risk management systems of Bangladesh. To analyze this perception, this research focused on a few variables like activities of Credit Risk Management, the value of non-performing loans, credit risk management policies, strategies and implementation in banks, portfolio quality and loan recovery systems etc. This is an explanatory study which has two variables i.e. independent and dependent variables; Independent variables are different banks and their departments, bank executives, customers etc. and dependent variables are Banking policy regarding credit, Bangladesh bank guidelines, Basel 2,3 and companies own systems, creditworthiness etc. Based on these variables. Nineteen questions were made for survey and circulated to banking organizations. The limitation of the research is based on the only banking side, it may be applicable to insurance and other finance companies also. There is a potentiality to develop a model for assessing results in an exactness level in future. This research based on collected data from Ten banks; so sample size is 10; where data collected from eight banks were online and rest are verbally collected.

III. THEORETICAL REVIEW

Banks function as an emissary to give a loan to the customer and Banks give many services but most of them have been associated to credit, for instance, business loans, monitoring accounts, remittance services, and cash management. One of the most popular banking services that offer greatly to bank credits has lent. Credits that banks lend out bits as monetary solutions for their customers, and as back, the customers have the responsibility to return principals and interests. In times of creditworthy clients, who become fitted with returning their debts, banks will be profitable. [1] Though, this has not always the case since there exist risks that customers cannot stand to fulfill their credit debts. Credit risks can be shifted by performing loans to non-performing loans (NPLs), impairment losses. Bad
Background of the study: Credit Risk Management has been treated as the heart of any Commercial Bank. It plays the vital role in the performance of a financial institution as it analyzes credit worth ability of borrowers. Bank deals with a systematic lending procedure which follows a straightforward policy. This type of policy helps the analysts to analyze loan proposals very easily. But there are some weak points of this straightforward policy and guidelines if there shows any loophole in credit risk assessment, then recovery of the provided loans and advances will be challenged greatly. A bad loan often arises from different factors or combination of factors, but the most important reason is the absence of proper loan classification system. It can identify problem loans immediately and take the necessary steps to minimize potential defaults and consequent losses. Poor Credit Risk Management is the main consideration in case of Banks unsatisfactory performance and often the reason of bankruptcy. As a result, profitability falls in a great uncertainty. Business has lost in these situations which have treated as opportunity cost. In a word, credit risk management is all about ensuring the repayment capability of the customers who are provided loans and advances. Minimizing Credit Risk is subject to the proper framework of risks and justification with historical trend and other assurance factors.

Review of concept: Since theories do not have collective definitions, it is imperative that studies are constructed on explicit working definitions. Here, the concept of credit and loans are used interchangeably. Some points are pointed below:

Credit risk: Credit risk refers to the possibility of loss due to a borrower’s failure to make goings on any type of debt. Credit risk management is the exercise of alleviating losses by considerate the adequacy of a bank’s capital and loan loss reserves at any given time, it’s a process that has long been an experiment for financial institutions.

Bad Loans: A bank writes off debt when it concludes that customers will never going to pay. This doesn't affect obligation to pay back the debt. The bank can still try to collect on customers unpaid bank debts, or turn them over to a debt collector. Unless the bank cancels the debt, customers still at risk for a court judgment or a blow to his her businesses credit score.

Credit Risk Analysis: Credit risk analysis (finance risk analysis, loan default risk analysis) and credit risk management is essential to financial institutions which offer loans to businesses and individuals.

Credit policy: Credit policies cover, among others, the credit risk philosophy governing the extent to which the institution is willing to undertake that risk. A distinctive credit policy will address the following points: Credit limits, Credit terms, Deposits.

Bank Loan portfolio: Lending is the principal business activity for most commercial banks. Loan portfolio management (LPM) is the practice by which risks that are inherent in the credit process has managed and controlled. Because evaluation of the LPM process is so important.

Non-performing loan: The portion of loan which has already become default or close to being default which is called Non-performing loan (NPL). When a bank fails to assemble the interest payments or the principal amount of a loan then that loan is measured as NPL.

IV. GLOBAL PRACTICES IN CRM

The first step in efficient credit risk management is to get a total understanding of a bank’s overall credit risk by viewing risk at the individual, customer and portfolio levels. When banks have aimed for an interracial perception of their risk profiles, information has scattered among business units most of the time. [2] Without an accurate risk assessment technique, banks have no way of acknowledging if funds reserves have exactly reflected risks or if credit loss reserves have appropriately covered implied short-term credit losses. The way of reducing loan impairments and ensuring that capital reserves suitably reflect the risk profile this has implemented an interracial, quantitative credit risk solution. [3] This solution will make banks up and run quickly with easy portfolio standards, there needs to create a sophisticated solution analyzing to measure risk properly.

The resolution should include:
- Creating a better model to analyze whole loan cycle
- Identifying the actual time frame and control monitoring system
- Making powerful risk stress-testing capabilities.
- Visualizing data analysis capabilities and business intelligence tools that will give important information into the guidance of those who require it, when they require it.

V. DATA ANALYSIS AND INTERPRETATION

A. The extent to which the following practices have been used in managing the credit risk below;
B. Following methods that organization applies to the validate the processes-

Interpretations: It’s been shown from the above graph that a large portion of banks uses internal audit system whereas other 21% of banks uses Risk management reviews to validate the processes employed in credit risk management.

C. Extend used in managing the credit risk-

Interpretation: Here graph shows effect of five risk parameters and almost 37.5% of all risk parameters effect those banks; on the other hand, around 25% of banks are effect by only credit risk which is higher than any other risk parameter.

D. Basis of Risk Parameters-

Interpretation: It is clear from above graph that almost all banks follow Central Bank’s guideline while formulating credit management practice and remaining 12.5% banks follow Basel 3 guidelines.

F. Responsible for Formulating credit Risk Management Practices-
Interpretations: According to the survey, both the risk committee and head offices of most of the banks are responsible for formulating credit risk management practices.

V. DISCUSSION

This research demonstrates the overall credit risk management of banks in Bangladesh. A bank is a popular financial institution perform as an intermediary and has been added values to the service industry by producing economic growth. This research provides a unique approach for policymakers of the administrative system to examine and evaluate their performance and downside; which fulfill and share with society ultimately.

V. CONCLUSION

Study findings unveiled that majority of the method in credit risk management in banks. Credit risk management is a structured road to managing possibilities by assessing risk, strategy development to handle it, and risk mitigation appropriating managerial resources. [5] The artifices include: moving to another party, circumventing the risk, leaving the harmful effects of the risk and accommodating some or most of the expenses of a specific risk. Risk classification assists the management to reveal a risk management strategy to allot resources efficiently. Although survey questionnaire was less in number and had a less chance to take more respondents from banks there had a chance to know views about credit rating systems, credit risk, analysis systems, and overall risk management.[6] A bank should analyze diverse factors, comprising cost, an efficiency of information collection, flexibility of rating produced, the nature of a bank’s business, and internal rating systems. Quantitative, qualitative and legal these three things are considered for assigning loan applicants grade. The quantitative analysis concentrates mainly on financial analysis and is usually based on a firm’s financial reports. Credit monitoring, reliability, and assurance determinant act a pivotal role in achieving financial aims and also lessen their credit risk.

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Customer Satisfaction in online shopping: A Case Study on Bangladesh

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Abstract- Online shopping is one of the fast-growing trends in the world and number of online businesses is growing rapidly in Bangladesh. In spite the numbers of internet users is growing, the number of online shoppers has not increased. The online shopping industry is the future of regular businesses and to develop this economically potential industry, traders should satisfy consumers with additional benefits. The paper focused on five variables to measure the customer satisfaction towards online shopping. The population of this research is the customers of online businesses from Bangladesh. The samples are collected from four cities of Bangladesh. We have gained potential information of the customer experience about online shopping and marked major problems and barriers. The study can help the practitioners and entrepreneurs regarding sophisticated customer online shopping experience. Further research can be applied to examine other variables that affect customer satisfaction towards online shopping using different context-based products.

Keywords- Complain settlement, customer satisfaction, product conformity, service quality, speed of delivery

I. INTRODUCTION

Online shopping is one of the fastest growing trends in the world. Also online businesses are growing rapidly in Bangladesh. Although the number of internet users has been growing in the country but the number of online shoppers has not grown to that extent. Online shopping has great economic prospect. Online traders should understand the scope of the industry and for developing this economically potential industry in the country traders should realize that determinants of success not only depend on website presence, low price and product variety but also depend on service quality. The consumer should be satisfied with the additional benefits he/she would receive from shopping online to switch to online shopping [1].

A. Objective of the study

This paper is prepared primarily to fulfill the study of “Customer Satisfaction in online shopping: A case study on Bangladesh”. The paper also tried to find out the customers satisfaction level for services provided by the online shopping sites or businesses, to explore the reasons why despite increase in the number of internet users, online shoppers has not been increased and to put forward some recommendations to the online sellers in order to improve the current situation.

B. Significance of the study

The research has several dimensions and by this research, we have gained some potential information of the customer experience about online shopping and what are the problems and barriers and how to overcome it. Moreover, this research has also found the level of customer expectation and behavior regarding e-commerce stores. This report has the potentiality to help the practitioners regarding the very topic of customer experience. It has the clear knowledge about how the survey has found the customer perceptions and executes the result to convey it to the generals who need the research for their fair decision. Again based on the results, this study offered some recommendation for retailers to take initiatives for making online shopping more admired and trustworthy. Furthermore, the paper has been focused in finding the way towards customer satisfaction as their experience leads them to it.

II. LITERATURE REVIEW

Internet has made people’s life easier by decreasing the time and effort to get things done. It has opened a new dimension that helps people to look at various products and prices while comparing those choices with each other to make their purchase decision staying at their homes.

A. Online Businesses in Bangladesh

Bangladesh is a late entrant in online businesses compared to other countries. Yet, this sector observed tremendous growth within a short time. There are around 1000 websites and 15,000 Facebook Pages (companies) currently operating in Bangladesh. In recent times approximately 30,000 parcels and about 200,000 orders have been placed daily through internet. On an average, products worth about Tk. 3-4 crore are sold every day through online business websites [2].

B. Online Shopping and Customer Satisfaction

Customer satisfaction towards online shopping depends on many factors. Some of them are- the reputation online store, on time delivery and service quality, trust, reliability, privacy, ease of transaction and affordability, offers, web-site design and ease of access, online interactivity, responsiveness, consumer risk assessment, compatibility and convenience etc.
Researches over the past two decades have demonstrated that service quality influences consumption decisions, but only recently these findings have been applied to e-commerce [3]. Other studies have found that the satisfaction of customers depend on online store features when it comes to evaluating performance of e-commerce businesses [4]. People find it more convenient if the information they look for is readily available. Customer satisfaction is known to be affected by the depth and ease of gathering information from a website [5]. A research stated that online shopping contains risks such as financial, product, non-delivery, convenience etc. which can demotivate people to buy from e-commerce stores [6]. If the apparent uncertainty is higher there is a greater chance of people shifting to physical stores and not purchase from online companies.

From the above discussions we can come to a conclusion that along with other variables service quality, speed of delivery, price, product conformity, complain settlement are the major forces that drive customer satisfaction towards online shopping.

III. METHODOLOGY

The nature of this research is descriptive and the goal of this research is to discover the consumer’s satisfaction towards online shopping in Bangladesh. Descriptive research is used for describing characteristics of any population, phenomenon and organizations. A quantitative analysis has been used to analyze the research data. All questions are close ended because all possible answers were given to the respondents and such questions are easy to use, reduce interviewer bias and reduce respondent bias.

A. Respondents & Sampling Procedures

The research population constituted of urban people from Dhaka, Chittagong, Sylhet and Khulna in Bangladesh. Among this population who have purchased online are included in the sampling framework of the study. However, nonprobability convenience sampling method has been applied to conduct the research as there is no database containing the list of online shoppers in Bangladesh. The convenience sampling method was used for measuring the customer satisfaction towards online shopping. The criteria for selecting the sample respondents were that they have internet connection with some online purchase experience. This survey is carried out in two different modes such as offline (hard copy mode) and online to distribute the questionnaires to the respondents. The hard copies were handed over to the respondents with a brief introduction of the research topic. The online mode of questionnaire was distributed social networks to friends and peers with the help of Google Form, who further relayed the questionnaire to their peers.

B. Research Instrument/Questionnaire

A survey questionnaire was developed to conduct the research process. An iterative process has been followed to design the questionnaire. The questionnaire includes statements which have been used in previous research materials to measure the opinion toward online shopping. Few more questions were added along with these questions considering the nature of online shopping in Bangladesh. While doing so, interviews with a judgmental sample of online shoppers were conducted to gather knowledge from their experiences. The questionnaire consisted of 20 close ended questions for this research. There are three main sections in the questionnaire which is Section A, Section B and Section C. Section A, indicating demographic information: respondent’s gender, age, education level, income. Section B is about the level of understanding of online shopping and Section C indicating factors affecting customer satisfaction which is product quality, service quality and shopping experience. In this paper, some basic questions followed the simple attitude scale for survey. However, mostly Likert scale was used for measuring attitude of the respondents. Respondents indicated their own perspective by checking how strongly they agree or disagree with the statement.

C. Collection of Data

In this research, both primary and secondary sources were used to collect information. Relevant books, journals, research paper and websites were used to collect secondary data. Personal shopping experience, observations and interaction with the customers through the use of questionnaire played a big role for primary data. 225 responses were collected by hard copy of the questionnaire and with the help of Google form.

IV. STATISTICAL TREATMENT OF DATA

The data have been analyzed by using IBM SPSS Statistics 20 software. Some chart and tables have been used to examine the collected information and give visible representation of the study.

A. Demographic Characteristics Analysis

The primary data are collected from 225 respondents from four divisional cities of Bangladesh (Dhaka, Chittagong, Sylhet and Khulna). The demographic attributes of the sample respondents are as follows:

<table>
<thead>
<tr>
<th>TABLE 1:</th>
<th>PLEASE INDICATE YOUR GENDER.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>Female</td>
<td>95</td>
</tr>
<tr>
<td>Male</td>
<td>130</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
</tr>
</tbody>
</table>

Among the 225 respondents 130 are male and 95 are female respondents.
Online shopping is more popular among young adults (18-25) generation as they like using the internet more than other age groups above 18. Among 225 respondents, 125 bachelor degree holders is the major group.

B. Online Shopping Trends in Bangladesh

Online shoppers in Bangladesh have been facing several problems and barriers while shopping online. This section has focused on those problems and barriers that have higher possibility to occur while customers shop online and those which may have a relation with customer satisfaction. The analyzed data shows that no availability of quality goods and services is the most faced problem by the online shoppers and this has the highest percentage. This is also an indicator that Bangladeshi customers for online shops are not satisfied because of the lacking in availability of quality goods and services and this might lead to a negative consequence for the online shop owners.

TABLE 2

WHICH OF THE FOLLOWING AGE GROUPS DO YOU BELONG TO?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>18-25</th>
<th>26-35</th>
<th>36-45</th>
<th>46 and above</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>143</td>
<td>74</td>
<td>7</td>
<td>1</td>
<td>225</td>
</tr>
<tr>
<td>Percent</td>
<td>63.6</td>
<td>32.9</td>
<td>3.1</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Valid Percent</td>
<td>63.6</td>
<td>32.9</td>
<td>99.6</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The analyzed data shows that the most of the customers have low trust level on stores and this also indicates that the customers are not very satisfied with the behavior of the online shops due to low trust and this is the most faced barrier for the highest number of respondents.

C. Customer Satisfaction

In this section of the report we tried to focus on the factors that are straightly related to the customers’ level of satisfaction and being a loyal customer to the online stores. These factors not only say that a customer is satisfied or not but also indicates that the customers repurchase and loyalty depends on them. The questions for these variables are designed in five point Likert scale where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5= strongly agree. This section has designed with the factors namely service quality of the sellers, timely delivery of the products, price of the products, products’ conformance and complaint settlement procedure of the online stores.

In the survey for this paper people are mostly stayed with the neutral position against their satisfaction in terms of price.

TABLE 3

What Kind of Problems Do You Face While Online Shopping?

<table>
<thead>
<tr>
<th>Problems</th>
<th>Responses</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product did not arrive at all</td>
<td>28</td>
<td>9.8%</td>
</tr>
<tr>
<td>Product arrive in damage condition</td>
<td>32</td>
<td>11.2%</td>
</tr>
<tr>
<td>Wrong products were sent</td>
<td>32</td>
<td>11.2%</td>
</tr>
<tr>
<td>Not quality goods &amp; services</td>
<td>142</td>
<td>49.7%</td>
</tr>
<tr>
<td>Others</td>
<td>52</td>
<td>18.2%</td>
</tr>
<tr>
<td>Total</td>
<td>286</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

TABLE 4

What Are The Barriers That Keep You Away From Online Shopping?

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Responses</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety of payment</td>
<td>55</td>
<td>16.3%</td>
</tr>
<tr>
<td>Low trust level on online store</td>
<td>150</td>
<td>44.5%</td>
</tr>
<tr>
<td>VAT, Customs Duty</td>
<td>26</td>
<td>7.7%</td>
</tr>
<tr>
<td>High shopping cost</td>
<td>49</td>
<td>14.5%</td>
</tr>
<tr>
<td>Delivery too slow</td>
<td>39</td>
<td>11.6%</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
<td>5.3%</td>
</tr>
<tr>
<td>Total</td>
<td>337</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

TABLE 5

The Service Quality of Sellers Is Important.

<table>
<thead>
<tr>
<th>Responses</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>16</td>
<td>7.1</td>
<td>7.1</td>
</tr>
<tr>
<td>Disagree</td>
<td>5</td>
<td>2.2</td>
<td>9.3</td>
</tr>
<tr>
<td>Neutral</td>
<td>22</td>
<td>9.8</td>
<td>19.1</td>
</tr>
<tr>
<td>Agree</td>
<td>80</td>
<td>35.6</td>
<td>54.7</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>102</td>
<td>45.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

TABLE 6

So Far, You Are Generally Satisfied With The Service Quality Among These Online Shops

<table>
<thead>
<tr>
<th>Responses</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>14</td>
<td>6.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>33</td>
<td>14.7</td>
<td>20.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>92</td>
<td>40.9</td>
<td>61.8</td>
</tr>
<tr>
<td>Agree</td>
<td>76</td>
<td>33.8</td>
<td>95.6</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>10</td>
<td>4.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

TABLE 7

SO FAR, YOU ARE SATISFIED WITH THE SPEED OF DELIVERY FOR ONLINE SHOPS.

<table>
<thead>
<tr>
<th>Responses</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>10</td>
<td>4.4</td>
<td>4.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>37</td>
<td>16.4</td>
<td>20.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>59</td>
<td>26.2</td>
<td>47.1</td>
</tr>
<tr>
<td>Agree</td>
<td>108</td>
<td>48.0</td>
<td>95.1</td>
</tr>
</tbody>
</table>
Product conformance has an influence on customer satisfaction because most of the people agreed that the difference between the customers’ expectation and the real product would influence the customers’ satisfaction.

### Table 8
**SO FAR, YOU ARE GENERALLY SATISFIED WITH THE PRICE AMONG THESE ONLINE SHOPS.**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>14</td>
<td>6.2</td>
<td>6.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>57</td>
<td>25.3</td>
<td>25.3</td>
<td>31.6</td>
</tr>
<tr>
<td>Neutral</td>
<td>78</td>
<td>34.7</td>
<td>39.3</td>
<td>66.2</td>
</tr>
<tr>
<td>Agree</td>
<td>71</td>
<td>31.6</td>
<td>31.6</td>
<td>97.8</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>5</td>
<td>2.2</td>
<td>2.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### Table 9
**THE DIFFERENCES BETWEEN YOUR EXPECTATIONS AND THE REAL PRODUCTS WOULD INFLUENCE YOUR SATISFACTION.**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>7</td>
<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td>Disagree</td>
<td>31</td>
<td>13.8</td>
<td>13.8</td>
<td>16.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>55</td>
<td>24.4</td>
<td>24.4</td>
<td>41.3</td>
</tr>
<tr>
<td>Agree</td>
<td>89</td>
<td>39.6</td>
<td>39.6</td>
<td>80.9</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>43</td>
<td>19.1</td>
<td>19.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### Table 10
**YOU WILL BUY THE PRODUCTS AGAIN FROM A SAME SHOP IF YOU ARE SATISFIED WITH IT.**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>5</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>4.9</td>
<td>4.9</td>
<td>7.1</td>
</tr>
<tr>
<td>Neutral</td>
<td>20</td>
<td>8.9</td>
<td>8.9</td>
<td>16.0</td>
</tr>
<tr>
<td>Agree</td>
<td>133</td>
<td>59.1</td>
<td>59.1</td>
<td>75.1</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>56</td>
<td>24.9</td>
<td>24.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### Table 11
**IF AN ONLINE SHOP DEALS WITH YOUR COMPLAINTS VERY WELL YOU WILL CONTINUE TO BUY SOMETHING FROM IT.**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>12</td>
<td>5.3</td>
<td>5.3</td>
<td>6.7</td>
</tr>
<tr>
<td>Neutral</td>
<td>33</td>
<td>14.7</td>
<td>14.7</td>
<td>21.3</td>
</tr>
</tbody>
</table>

Complaint settlement has relation to customers’ satisfaction because most of the respondents agreed that they will shop again from the same online store if they handle the complaint with care. Most of the people agreed with the fact that they will return the product if they are not satisfied with it.

### V. SUMMARY OF THE FINDINGS

We have considered five common variables, namely, service quality, speed of delivery, price, product compliance and complaint settlement of the online stores to measure the customer satisfaction towards online shopping in Bangladesh. We tried to identify the problems and barriers that are mostly faced by the customers while shopping online along with the five factors. The problems included product did not arrive at all, product arrive in damage condition, wrong products were sent, low quality goods and services and among the barriers included safety of payment low trust level of online store, VAT, customs duty high shipping cost and delivery too slow. The key points of the findings are shown below:

a. Service quality of the online shopping sites greatly influences the customer satisfaction level (Table-5 and Table-6).

b. Customers require on time delivery of the products. They are satisfied if timely delivery is made (Table-7).

c. The price variable for identifying the customer satisfaction level did not seem to bring enough light to the situation and the resulted neutral (Table-8).

d. Product conformance is important to the customers and this is visible from Table-9.

e. It is also visible from this study is that complaints if handled carefully can create greater customer satisfaction and loyalty (Table-11).

f. Customer satisfaction is a must for any traditional business to progress and this is no different in case of online shopping. This study finds from table-10 that satisfied customers will make repurchase from the same shop which might lead to customer loyalty and this will help the online stores sustain and grow.

### VI. CONCLUSION

The paper was an overview of the factors that influence customer satisfaction in online shopping in Bangladesh. Online shopping holds great potential for attracting customers all over Bangladesh, yet it is a challenging task to ensure and create a great place for addressing different customer needs. Retaining customers is one of the most difficult jobs as the competition is very high. It is high time that we should try to find the reasons behind customer satisfaction as well as what really satisfies the
customers and for this purpose great amount of attention is required to find the factors that the customers are looking for and through this research we tried to focus on five major points: service quality, speed of delivery, price, product compliance and complaint settlement that are found to be important in other studies conducted before in different countries.

VII. RECOMMENDATIONS

In this competitive era of online business Bangladeshi online stores and Facebook shopping pages should keep a good harmony with the modern structures. Some factors that Bangladeshi online entrepreneurs need to look over are mentioned below:

a. Delivery of better service and focusing on improved customer experience should be increased.

b. The complaints made by the customers should be attended without any delay to increase faith in the shopping site.

c. Plans need to be developed to identify other factors that affect customers’ satisfaction.

d. Since online shopping is a new sector for Bangladesh so before entering into the competition customers requirement must be researched.

e. The online privacy and safety rules should be maintained.

f. There should always be double checking to ensure error free products go to customers.

g. More preference to website content should be given so that customers have a clear idea of the product they will be getting.

VIII. FURTHER STUDY

The samples employed are mostly student subjects, which may not be the actual representative of the general population of online shoppers. The analytical results presented here thus may have limited generalizability. Further research can be applied to examine other variables that affect customer satisfaction towards online shopping using the subjects that are regular online shoppers, because online customer perceptions of satisfaction are context-dependent and thus their satisfaction variable may be related to specific products and services. Since the sample was collected in Bangladesh, generalizability to other countries might be limited due to cultural differences in purchase behavior and differences in other demographic conditions.

REFERENCES


A Research Framework of Smart Food Supply Chain Harnessing Blockchain Technology for Developing Countries

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Abstract – The ideas of Sustainable Development Goal (SDG) are getting critically necessary to the agriculture sector because of dynamic agricultural industry, enhanced domestic food demand, and, increasing issues associated with food cost, food quality and safety in developing countries. As most of the developing countries are using traditional supply chain to deliver food product or service from supplier to consumer end, all these countries have been facing problems on reducing cost and managing their food supply chain to meet the objective of Sustainable Development Goal (SDG). This paper introduces a model for those developing countries which will provide them a smarter way to handle the product, information as well as flow of funds; furthermore, this paper also investigates how to make contract between parties of food supply chain in an efficient way using Blockchain technology which will also help to reduce the cost of final product through the value chain system. As developed countries already adopting and implemented the system, this research will be a finest guide for professional management practice and researchers to implement a smart model for food supply chain which can be monitored and traced easily by farmers and consumers in developing countries.

Keywords – Supply Chain, Food Supply Chain, Blockchain

I. INTRODUCTION

Supply chain management (SCM) is the dynamic management of supply chain activities to maximize consumer value and attain a sustainable contentious advantage. It represents a perceived effort by the supply chain firms to acquire and drive supply chains in the most effective & efficient routes plausible. A supply chain is a global interface used to transfer products and services from raw materials to finish customers by a superintendent issue of information, dynamic sharing, and cash. A basic supply chain is made up of these things: seller is a supplier who furnishes goods and services or a person or organization with which the buyer does business their general term in a marketplace is a sailor. The supplier provides materials energy services or components. A producer who takes components from the seller to manufacture finished goods and services. The customer is one who takes the finished product that is the one which is ready to take. To obtain a competitive advantage, a company eventually passes more value at an equivalent level or below cost. Value chain analysis is the technique for circumscribing the critical route to intensify customer value while diminishing costs. The overall aim of value chain analysis is to classify spheres and activities that will benefit from a change to boost profitability and effectiveness. Value chain analysis is more than a straightforward cost-to-profit design. It elaborates on the origins of economies of scale and volume.

II. AGRICULTURE FOOD SUPPLY CHAIN

Agriculture is the concise digitized business. Simply due to a lack of connectivity, farming fumbled out on a lot of the interests of the internet the first time around and we're really confirmed that farming doesn't drop out again. The food supply chain has a long history in agriculture initiated by our originators. Things would have simpler if they thought of implementing blockchain instead of maintaining individual firms. Thanks to modern technology which give us the opportunity to harness the power of it and develop the value chain of agriculture. [1] Blockchain also empowers the growers to make healthier and more knowledgeable decisions throughout where to sell their goods. Today’s food supply chain is all about providing inputs to the farmers; then which are later processed by the aggregators for the wholesalers, who are finally responsible to provide those final products to the retail consumers.
at the right price. Supply chain network is a path traveled by a product from its creation to delivery. For making products they need raw materials for that then they go for production when packing is done it is forwarded to the distributor, from distributors they travel to lower distributors and then retailers, from retailers they reach to the consumer. So according to the Figure-1 today’s supply chain starts from input providers to Retail Consumers.

III. PROPOSED MODEL

The proposed model for agriculture supply chain model is completely digitalized and smart as well based on the latest technology that has already been practiced on developed countries. Blockchain is the newest concept for supply chain management and the model will use this concept to make smarter the food supply chain from supplier to consumer end. We call it SFSC (Smart Food Supply Chain) based on Blockchain; when two supply chain meets it will create blockchain. To require a precise information, we need a specific record so that everyone can grasp a clear idea about this goods and service, that would be possible by block chain. The block chain is linked to bitcoin or it’s called cryptocurrency, originally, it had made for a financial transaction but now it is remodeling in the business world uniquely in a supply chain. blockchain transaction is between user to user, so when there is a transaction that data is listed in a shared block and these blocks are combined together to make blockchain like a shared google docs. Transaction efficiency is encouraged by the fact that consensus, there is no dispute in the chain regarding transactions because all objects on the chain have the same version of the ledger. Everyone on the blockchain see the chain of ownership for an asset on the blockchain. Records on the block chain cannot be expunged which is important for a crystal clear supply chain.

![Figure-2: Supply Chain and Block Chain Bridge](image)

These include its immutability, verifiability and disintermediation. Immutability and verifiability has been meticulously linked, few researcher says the key difference between a block chain and a spreadsheet is that information can only be added, not edited or erased. Any change has recorded as a visible addition to the data store, making it immutable. Moreover, there are always multiple parties looking at the data store. So if someone adopt to alter data in a blockchain data store, all change has been visible to and checked by every other participant.

Blockchain is not a centralised software device that permits a master ledger of data and transactions to be retrieved securely by multiple stakeholders.

IV. HOW THIS MODEL WORKS

From farmer’s field to reach consumers plate, each time a goods changes hands. This time the transaction might be documented, Data can be permanently formed from...
production to sale. But sometimes it took more time and cost. If adopt technology, then there is a possibility to get everything on time. For solving agribusiness problems recently developed an app in our country. By this app farmers can solve all the problems without going anywhere. If there is a possibility to add some features more like farmers might relate to supplier, manufacturer, and other parties also it can be possible if supply chain management may be linked with block chain technology that will add more value and create a transparent relationship among all parties. Expert on agribusiness suggest using block chain because farmers will get the actual profit as they deserve from farming. Some supply chains have already used the technology.

Collecting: Block chain technology will help farmers to collect different seeds from different side of the world.

Documenting: By using this technology, here documented all materials what a farmer wants to sell like – Agro products (potato, mango, onion etc.)

Tracing: This technology will help to record all purchase information, due orders, shipment information and other trade related documents.

Verifying: Block chain helps to identify the product quality and certifications of physical products, for example defining if a food product is organic or fair trade.

Combining: Block chain reveals detail information of physical goods to serial numbers, bar codes, digital tags, promotion code and service code. For example; RFID.

Communicating: Information about manufacturing process, assembly, delivery, and maintenance of products and product development with suppliers and retailers all can be determined by block chain network.

Food stakeholders could establish an industry-wide platform to onboard and manage supplier relationships and review the quality of food products along the entire chain.

Each user in the ecosystem would use a digital identity to access and participate on the platform. Smart contracts could be created to store and manage meta-data and events associated with supplier onboarding and relationship maintenance, such as:

1. Supply chain details (i.e., product components and associated lifecycle)
2. Quality certifications approved by regulated bodies (i.e., approved body, date, expiry data, date of last testing)
3. Endorsements given by food stakeholder (i.e., wholesaler, restaurant or end consumer based their own experience, reviews of the food quality)

By using this onboarding platform, restaurants and wholesalers, for example, would have end-to-end visibility over the supplier relationship with real-time access to monitor and manage all supplier relationships. Currently, this is not possible in the marketplace. Platform users would have a complete audit trail of food ingredients they buy from the associated supplier and could prove the product is of specified quality by checking the quality credentials of each ingredient uploaded by the regulated bodies.[3]

![Figure-3: Block Chain Based Food Supply Chain](image)

Given that all information (i.e. supplier profile, certified qualifications, food materials) added to the chain is timestamped, users could retrieve a full history of the stakeholder relationship and associated activities. Suppliers are incentivized to maintain quality certificates to possibly increase and establish relationships with other upstream activity players. [4] For example, if ingredients do not meet quality standards, the regulated entity could revoke the quality certificate and notify everyone in the network who has a relationship directly or indirectly with that supplier. Receiving real-time updates on food quality ingredients enables upstream players to make better sourcing and acquiring decisions and reduces the risk of reputational damage as there is more visibility of downstream activities.

Endorsements could be provided by anyone who has direct contact with the food ingredient. For example, a wholesaler, restaurant or even the end consumer could provide a review or rating using an application, effectively creating a transparent review platform for the ecosystem. This would be the first platform to enable all supply chain stakeholders to interact with one another directly and share reviews to better improve the food experience for all. As restaurants become more technologically savvy, the incorporation of such applications into their service offerings would impact their consumer base. [5]
Food critics’ reviews and ratings could be incorporated into the solution to provide the end consumer with a 360-degree view of the food they are eating.

IV. DISCUSSION

Internet-based explications and cloud technology must be erased many of the communications difficulties that once survived in the food supply chain. The ability to trace and control orders, record and freight can be done in real-time. Also, importantly, the capacity to move or respond to changes is considerably intensified. Due to the massive populations dwelling in towns, a scale between the resources accessible and those essential for enough functioning of a city to function satisfactorily does not exist. It generates a window of possibility for the application of Information and Communication Technologies (ICTs) to assure that a town can efficiently supply necessary services to its inhabitants.

V. CONCLUSION

Blockchain’s capabilities in supply chain management is an increasingly popular topic, with proofs-of-concept being developed across all industries. Early applicants can team with controlling parties and founding providers and to shape how blockchain technology will function in their industry. With challenges and risks clearly defined and evaluated, the final consideration is whether any business is ready to explore the new frontier of blockchain technology. This paper explores to harness this technology to make smart the existing food supply chain in a smarter way. Developed countries are already implemented this technology on their food supply chain. This paper represents a model; SFSC will give developing countries an opportunity to make their food supply chain smarter and reduce their product cost in value chain system. Researchers of related research will find this research helpful and this research can be a cornerstone for further research on Smart Food Supply Chain based on Block chain.

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Examine the Technology Acceptance Model in the Adoption of Social Networks

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Abstract – The purpose of this paper is to explain the process of new technology adoption, more specifically social networks based on Technology acceptance model. This study is the evident of quantitative methodology approach, applied by survey method. Factor analysis and regression were used to test the model. The regression model suggested that intention to use social networks was mostly influenced by the perceived ease of use and the security of social networks. This study highlights three variables and there may be the scope of emergence of other variables. Sample size in this study is limited too. Social network service providers should focus on the two elements prominently, the perceived ease of use and the security that social networks provide to its user. A new variable, perceived security is incorporated, enhances the literature on the adoption of technology in case of social networks.

Keywords – Consumer’s intention, Social networks, Technology acceptance model, Usefulness, Ease of use, Security.

INTRODUCTION

The internet permits the presence of numerous online social networks (SN) outlined to serve "buyers’ requirements for correspondence, data and entertainment. The numerous conceivable outcomes of the internet as a method of communication among buyers, and in addition amongst purchasers and organizations, take into consideration the rise of new types of social relationship as well as new marketing approaches both in term of selling, promotion and relational paradigms. From marketing point of view, likely the most eminent outcome is the change in terms of power balance between organizations and customers. Consumers now can share their opinions and knowledge about the product and services through the internet. The impact of internet-based communication forms has been attracting growing interest from researchers. The issue of virtual communities is one of the most recent topics drawing attention [1]. This study investigates the determinants of appropriation of social networks. We expand on the point of view that social network get from a data innovation development and along these lines explores the determinants of adoption behavior of such platforms from an adoption of innovations perspectives. This technology acceptance model predicts the likelihood of a new technology being adopted within a group of individuals or organizations [2]. Meta-analysis studies in this area confirmed that TAM explains the adoption of numerous technologies, ranging from software packages to various online services [3] [4].In this way, the purpose of research is twofold. To begin with, we hope to affirm the level of utilization of Social networks and analysis few characteristics of social media users, for example gender, the average number of friends and frequency of usage. Secondly, we intend to inspect the significance of technology acceptance model (TAM) within the context of new technology platform, similar to the instance of social networks. Despite the fact that social networks such as Facebook and to a lesser extent Twitter raise significant enthusiasm in the practitioner’s community as far as their marketing impact, particularly as a specialized apparatus, scholastic research around there is still in its outset. Studies tending to social networks from a marketing viewpoint have quite recently started to discover significance in marketing journals, specifically concerning determinants of adoption of social networks. The main research question driving this study is, “What examines the technology acceptance model in the adoption of Social Networks?”

LITERATURE REVIEW

Technology Acceptance Model (TAM) is considered as an information systems theory, which examines how users take into account and use a new technology. The idea behind technology acceptance is originated from Theory of Reasoned Action, which states that there is a vivid link between people’s belief and people’s attitude towards their behavior [5]. From this link, technology acceptance model comes up with three prior variables, determines people’s intention of using social networks [6]. Here, the social networks are the platform where user can create their profile and connect with people helping them to build personal networks. These social networks comprise numerous types of online user generated platform named Facebook, Twitter etc. These platforms enable people to upload the status, pictures, personal information, and multimedia content with existing connections. It is studied that people log into these online user generated platforms and connect with their connection for multiple times in a day and it is passively addictive [7]. The usefulness of these social networks influences them to use Facebook, Twitter, Linkedin and from this concept the first variable is highlighted as a perceived usefulness [8]. User’s intention also depends on how easy to use the social networks pointed out as a second variable of the TAM [8]. In addition, security is
also notable factor in case of choosing social networks and people likely to use those online sites where privacy policy is strong enough [9]. Many organizations are now looking forward to the marketing potential in these sites and most of the brands use these social networks as a tool of creating brand awareness.

METHODOLOGY

Here, it is summarized that how data has been collected for this research paper. At the very beginning, secondary data have been inferred as model and hypotheses have been developed in light of other journals. The sources of these journals are mentioned in the reference part. For strengthening research paper, primary data have been collected through survey and it refers the quantitative research. In the survey question, 22 questions are included where four factors have been highlighted as well as demographic factors and the questions without demographic factor focused on 5 point likert scale. Online survey has been done for covering large number of people and responses have been acquired from 110 respondents.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

Technology Acceptance Model

Technology acceptance model (TAM) was manifested in the 1980’s, the dominant propagation of Theory of reasoned action which was proposed by Ajzen and Fishbein in 1975 [6]. This model was evolved by Fred Davis more specifically in 1986. Theory of reasoned action, the radix of Technology acceptance model, clarifies the link between beliefs, norms, intentions and behaviors of individuals and a person’s belief dictates his attitude towards his behavior [5]. The most basic idea behind TAM is how users come to accept and utilize a technology. In this model, three variables play a significant preamble in case of describing the user’s motivation to adopt a new technology. The first variable, Perceived usefulness refers to the user’s belief that taking up a particular technology will enhance to a better a performance. In addition, perceived ease of use, second variable means that an individual believes that there will be no physical or mental difficulties in adopting a technology at hand. Moreover, perceived security refers to the safety that a user wants to get when using any technology as they share their personal information in different social networks. Intention to use a particular technology mainly means that if an individual find out that a particular technology will accelerates his or her performance and using this technology will free from effort and it is safe to use then it creates intent to use this technology.

HYPOTHESES

Perceived Usefulness

When people use any kind of social network site, people always try to find how much useful the particular social network site is [8]. Here it is proposed that

H1: The higher the perceived usefulness of a particular social network, the greater the intention to use that particular social network.

Perceived Ease of Use

If an individual experiences complexity to use social network, it may affect the intention to use it. Some social network requires several steps to use this, creates inflexibility, and here individual will show less intention to use social networks [8]. Here it is proposed that

H2: The higher the perceived ease of use of a particular social network, the greater the intention to use that particular social network.

Perceived Security

Security does not only include technical aspect but also the individual’s sense of security and well-being [9]. If individuals find out that a particular social network fails to ensure security, individual will lose the trust and it will make people demotivated to use that social network.

H3: Higher the perceived security an individual gets from a social network, the greater the intention to use that particular social network.

RESEARCH METHOD

Research design

In this research, to find out the implication of technology acceptance model in the adoption of social networks, information is gathered via survey methods from the people who use social networks. Online survey was preferred as through it one can easily collect the data quickly and effectively. Moreover, this technique is inexpensive, flexible and faster way to conduct a survey.

Measurement

The questionnaire asked respondents to evaluate their perception about the usefulness, ease of use, security of the social networks and their intention to use social networks. 5 point Likert scale is used for the questionnaire; each item was anchored with the verbal statement “strongly agree”, “agree”, “neutral”, “disagree”, and “strongly disagree”. Multiple items were used to measure each construct so that their measurement properties could be evaluated on reliability and validity. More specifically some scales are formulated by us and some scales are adopted from other research papers which is mentioned in reference part. Demographic data are also obtained from the respondents including age, income, gender, and occupation.

Sampling

In our research, the population is all people who use social networks. One can choose the sample according to the age groups, gender, and availability
and so on. In choosing the respondents of the research, the people were chosen randomly specially those who use social networks. Our sample size is comprised a total of 110 respondents of which 52.7% is female and 47.3% is male. The sample demographics indicated that a broad cross section of the population responded.

Sample Characteristics

<table>
<thead>
<tr>
<th>Age</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25 Years</td>
<td>68.2%</td>
</tr>
<tr>
<td>26-45 Years</td>
<td>26.4%</td>
</tr>
<tr>
<td>46 Years or above</td>
<td>5.4%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>52.7%</td>
</tr>
<tr>
<td>Female</td>
<td>47.3%</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>62.7%</td>
</tr>
<tr>
<td>Service Holder</td>
<td>21.8%</td>
</tr>
<tr>
<td>Business &amp; others</td>
<td>14.6%</td>
</tr>
<tr>
<td>Income(Taka)</td>
<td></td>
</tr>
<tr>
<td>Below 25,000</td>
<td>71.8%</td>
</tr>
<tr>
<td>25,001-50,000</td>
<td>13.6%</td>
</tr>
<tr>
<td>50,001 and above</td>
<td>14.5%</td>
</tr>
</tbody>
</table>

ANALYSIS

Principle component analysis was conducted with Varimax rotation to examine how the selected measures loaded on expected constructs. The factor analysis recovers four factors. The total cumulative variation is explained by factor analysis which is 76.85% (Table-1).

Table 1: Total Variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigen values</th>
<th>Extraction Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>1.848</td>
<td>26.403</td>
</tr>
<tr>
<td>2</td>
<td>1.449</td>
<td>20.700</td>
</tr>
<tr>
<td>3</td>
<td>1.172</td>
<td>16.748</td>
</tr>
<tr>
<td>4</td>
<td>.910</td>
<td>13.002</td>
</tr>
<tr>
<td>5</td>
<td>.688</td>
<td>9.835</td>
</tr>
<tr>
<td>6</td>
<td>.529</td>
<td>7.561</td>
</tr>
<tr>
<td>7</td>
<td>.403</td>
<td>5.751</td>
</tr>
</tbody>
</table>

Reliability:
Reliability is an assessment of the degree of consistency within multiple items of a variable, estimated by Cronbach’s Alpha, should be greater than .7. The internal consistency of two items, Perceived Usefulness (.557) and Perceived Ease of Use (.601) are relatively high (Table-2), the third variable, Perceived Security is .508(Table-2) which is again not relatively high.

Table 2: Reliability

Validity
Validity indicates the items conform to its conceptual definition. Convergent validity is checked through correlation matrix. Inter-item correlation within the variable is higher than intra item correlation. In addition, discriminant variable is checked through Average Variance Extracted (AVE), it refers that two variables are distinct. Here, all variables are distinct from each other such as (Perceived usefulness, .67), (Perceived ease of use, .69), (Perceived security, .65) and (Intention to use, .86)

RESULTS

Regression analysis is used with the three factors as an independent variable to test the intention of user to use social networks. The full model is found to be significant which is evident by the overall significance (.002 Table-4) which we get from Anova the overall F-statistic because the significance level is less than .05. The regression model also illustrated .131 which means 13% variability of the dependent variable, intention to use social networks is explained by the independent variables which are perceived usefulness, perceived ease of use and perceived security. Two of the three factors had a significant effect on the intention to use social networks. These two factors are perceived ease of use (beta= .303, significance=.050) (Table-5) and perceived security (beta= .222, significance =.018) (Table-5). Perceived usefulness is not significant because its standardized coefficient beta is -.068 and significance .654 which is higher than .05. The standardized coefficient beta values suggest that perceived usefulness and perceived security have strongest relationship with intention to use social networks. However, perceived usefulness does not have strong relationship with dependent variable, intention to use social networks. This model suggests that two hypotheses are statistically supported and they are – the higher the perceived ease of use of a particular social network, the greater the intention to use the particular social network and higher the perceived security individual get from a social network, the greater the intention to use that particular social networks.
Discussion:

This study examined technology acceptance model in the adoption of social networks. The results suggest that the model which is used in this study satisfactorily explains the adoption of social networks and social network service providers should focus on two major elements—Perceived ease of use and Perceived security. From the results, it is determined that perceived ease of use of any social networks is important to customers. Under perceived ease of use variable, there are numbers of items but it is instructive to note that two items which are understanding the instruction of using social networks and social network is easy to use loaded in one column in the rotated component matrix. In case of adopting social networks, one can easily use one social network site when he or she understands the instruction of using it. If instruction is not clear, users feel it complex and lose the interest of using it. Social networks have to have user-friendly instruction and this study confirms that this item is considered as an important determinant of creating an intention to use social networks. Another, and the items are hard to recover the account and security provided by social networks. In case of adopting social networks, if any user experience that they cannot recover their previous account in the social networks than it will influence them to stop using it. Incapable of recovering pervious account creates an urge to create a new account, which creates inconvenience for user. Afterwards, another important item is loaded in previous column and it refers the security that provided by social networks. If users feel that their personal information is not secure than they will leave that social network. Users have trust on the social networks they use but when their personal information is hacked by identity thieves then the intention of using those social networks will decrease significantly because no one wants to share their personal information to everyone. From a practical perspective, the result of this study proposes important implication for companies who are intending to enter the market of social networks. Having a good idea about what helms the customer to use social networks is momentous for maximizing the efficiency of communication technologies. We believe that the model that we have used of understanding the intention of people in case adopting social networks is proved useful one. If companies of social networks put emphasize on these two factors, they will be able to gain competitive advantage.

Table-4: ANOVA*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.932</td>
<td>.323</td>
<td>2.881</td>
<td>.00</td>
</tr>
<tr>
<td>PSSS</td>
<td>.123</td>
<td>.051</td>
<td>.222</td>
<td>2.411</td>
</tr>
<tr>
<td>PEEUU</td>
<td>.183</td>
<td>.093</td>
<td>.303</td>
<td>1.980</td>
</tr>
<tr>
<td>PUUU</td>
<td>-.049</td>
<td>.108</td>
<td>-.068</td>
<td>-.450</td>
</tr>
</tbody>
</table>

FURTHER RESEARCH

However, this study is not without limitation. The first area where further research can be proposed is the factors. Here, three factors are focused but there can be other factors which may influence the intention of people to use social networks. Moreover, factors by itself may require additional study because number of other items under this factor can create a significant role of creating the intention of people to use social networks. In addition, we have taken 110 respondents as a sample. Nevertheless, the number of people using various social networks is huge which creates an urge for further study. This study examines the Technology Acceptance Model with the context of social networks and affirms that this model is valuable to clarify social network adoption appropriation. These outcomes have pertinence for marketing theory and practices. From a hypothetical viewpoint, this investigation strengthens the role of Perceived Ease of Use and Perceived Security beliefs as determinants of positive attitude towards social network adoption. This in turns affects positively in intention to...
use. Our outcomes also have affirmed that Perceived Usefulness is certainly not a solid indicator of Intention to use as it is disposition towards SN utilization. These results confirm the significance of the Technology Acceptance model in extensive variety of technologies that go beyond business related contexts. It is significant the solid part of Perceived Ease of Use in the adoption of this technology. In spite of the fact that it is generally accepted that most of these technologies evolved in order to be user friendly, this examination experimentally affirms that this comprises an imperative determinant of utilization. Another Factor Perceived Security is positively related with the intention to use. This study results suggests important implications for companies aiming at fully exploiting the marketing potentialities of SNs. Understanding what drives consumers to use SNs is fundamental in order to maximize these new information and communication technologies.

REFERENCES


Appendix: Measures of Constructs (5-Point Likert scales: strongly agree-strongly disagree)

Factor 1: Perceived Usefulness

a. Through social networking sites, I can grow network online enormously by connecting with my near and dear ones.

b. Social networking sites that I have used helping me to quickly connect with other people.

c. A social network is useful in case of real time information sharing.

d. It is very easy for me to recall how to perform tasks using social networks.

e. Using social networking sites makes me irritated.

f. It helps me in other purposes such gather information about new things, new ideas, new innovations and daily news about our surroundings.

g. Social networking sites are helpful in case protecting my privacy.

Factor 2: Perceived Ease of Use

a. Social networking sites that I have used are very flexible in case interacting with people.

b. Complexity of opening an account in social networking sites makes me irritated.

c. I can easily understand the instruction about how to use these social networking sites.

d. Overall, I have found that social networks are easy to use.

Factor 3: Perceived Security

a. I have experience of being hacked in my social networking site.

b. It is hard to recover my account.

c. I feel safe to post my context online.

d. The security is provided by my social media sites are up to the mark.

Factor 4: Intention to use social networks

a. I have a great intent to increase the use of my social network in the future.

b. I will recommend others to use social networking sites that do not have it.

c. Intention of using social networking sites is growing because I am more contented with the usefulness that I got from it.
Internet of thing-oriented Supply Chain Management Optimization: A Triple Bottom Line Perspective in Manufacturing

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Paper ID: ICBM-19-0305

Abstract – The Internet of Things-enabled technologies plays a significant role in Supply chain Management Optimization. When the various devices and supply chain management (SCM) activities are connected through the physical connectivity devices and tools, all stakeholders can work in harmony. The Triple Bottom Line (TBL) perspective is gaining tremendous attention from all the stakeholders, like the government, NGO, customers, manufacturers, suppliers, and retailers. TBL considers sustainability from environmental, financial, and social dimensions. This paper makes an endeavour to explore the opportunities of IoT-based technology to support TBL perspectives. It also paper identifies how each stage of SCM activities can be optimised using IoT-based technology. The future research direction should address the integrated IoT, Blockchain, and Artificial Intelligence technology to enhance TBL-oriented SCM practices

Keywords – Internet of things, TBL, Sustainability

I. INTRODUCTION

Internet of Things (IoT) technology significantly benefits Supply Chain Management (SCM) activities in multiplying its efforts towards sustainable supply chain practices (Machado and Shah, 2014). Until the last decade, many companies around the globe took a narrow view of the nature and extent of the application of IoT. Encountered with few setbacks, yet, application of IoT has shown incredible potentials in the SCM domain from the "Triple Bottom Line" perspective (social, economic and environmental). This paper would make an endeavour to answer the specific question “how best could IoT-based technology be able to enhance sustainable SCM performance from Triple Bottom Line (TBL) perspective with a significant focus on sustainable manufacturing?” To address the question, this paper would make an effort to analyse how IoT can contribute in achieving sustainability-based performance in all the segments of SCM, supported by the academic literature, case studies, and industrial reports. Furthermore, it will summarise the issues from positive and negative viewpoints, draws applications of literature and findings. Finally, the paper concludes with evidence-based recommendations for managers and suggest future research potentials of IOT in manufacturing and SCM.

II. IOT IN SUSTAINABILITY-BASED PERFORMANCE IN SCM

A. DEFINITIONS AND CONCEPT OF IOT- BASED SUSTAINABILITY IN SCM

The term “Internet of Things” coined with Kevin Ashton in late 1990s. In a presentation in 1999, he first used the phrase "Internet of Things”. However, one of closest to the official definition of IoT derives from the Global Standards Initiative (GSI): “The Internet of Things (IoT) is the network of physical objects or “things” embedded with electronics, software, sensors, and network connectivity, which enables these objects to connect and exchange data.” In sum, IoT technology is a shared network of connected physical objects attaches to sensors. IoT enables these sensor-based devices to connect, analysed, and transfer data via networks, and most of the cases through cloud-based platforms [16] for wider connectivity. Ref [11] defined five key essential IoT technologies for SCM, which are Radio-frequency identification (RFID), Middleware, Wireless sensor networks (WSN), IoT applications and Cloud computing.

B. ESSENTIAL ELEMENTS FOR THE INTERNET OF THINGS

Radio frequency identification (RFID). It allows auto-detection of data using radio wave, tag and reader. These are essential elements for the RFID system. RFID Tag capable of storing more amount of information/data than barcodes. It contains Information/data in the form of an Electronic Product Code (EPC). However, the operation of the RFID tag system can be divided into three types:

1) Active RFID tags have an internal power system, which is generated through batteries. It can integrate active communication with a reader. The following figure shows how active radio wave generated by the tag and communicate to the reader.

2) Passive tag. Passive RFID tag depends on radio frequency energy transmitted from the reader to activate the RFID tag, and then it establishes communication with
the RFID tag. Passive RFID tags are not battery powered. Passive RFID systems can work by using the ultra-high frequency (UHF), high frequency (HF), (UHF) and low frequency (LF) radio bands. As a passive RFID system's covered ranges are limited by the power of the tag's backscatter, they normally cover less than 10 m of range. Backscatters are the radio signal that reflected from the tag and sends back to the readers. As passive RFID tags do not have power source or transmitter, and only need antenna and tag chip, therefore these are smaller, cheaper, and easy to manufacture than that of active RFID tags [14] [15].

(3) **Semi-passive tag.** This type of RFID tags, which use batteries to power the microchips only when RFID tags communicate to the reader, by drawing power from the reader. Semi-passive RFID tags are more expensive and powerful than passive-tags. However, semi-passive RFID tags can significantly reduce energy consumption [14].

(4) **RFID Reader.** This device uses radio-frequency waves, which wirelessly transfer information/data between RFID tag and itself in order to identify, track and categorize devices/things. The capability of the reader and distance covered depends on the configuration of the application, strength of antenna and capability of RFID tag. An RFID reader contains a Radio Frequency (RF) module that works simultaneously as a transmitter and receiver to detect and read radio frequency signals. The RFID transmitter comprises of an oscillator, which creates carrier frequency; a modulator to influence data commands upon this carrier signal and an amplifier to magnify the signal enough to awaken RFID tags. The receiver has a demodulator to extract the received and returned data. The control unit is formed by a microprocessor, which runs by the installed operating system, and consist of memory to filter and store data. When data is filtered by the system, then it became ready to be transmitted to the network (RFID Reader, 2018).

There are also variations in RFID readers, considering their applications, conveniences, and the ranges of utilities for the different purposes. Figure-4 shows some RFID readers that are commonly used for reading RFID tags [14] [15].

(5) **Wireless sensor networks (WSN).** WSN comprises of spatially dispersed, dedicated, and independent sensor-equipped devices for monitoring and recording the physical conditions of the environment of the collected data. Thereafter, WSN stores data at a central location. WSN can connect to RFID systems to monitor and track the status of the things; like the location of products, the exact temperature of the facility locations and goods, movements of the vehicles and so on. Recent developments of wireless communications and low-powered integrated circuits ease the use of miniature devices for WSN system. The WSN is made of "nodes" which ranges from a few to several hundred in number. Each WSN node is connected to one or several sensors. These sensor nodes are connected to the sink node (gateway sensor node). The gateway sensor node/nodes then connected to internet/satellite system [14] [15].

(6) **Middleware.** Middleware is a layer between the technological layer and application layer. Middleware is a software layer, which interposes between the software applications to make it easier for software developers to perform communication and manage input and output. Its feature of hiding the details of different technologies is fundamental to free IoT developers from software services that are not directly relevant to the specific IoT application. Furthermore, it promotes the development of new services in shared computing networking. A complex distributed infrastructure of the Internet of Things with numerous varied devices needs simplifying the improvement and construct of new services and applications. Therefore, the application of middleware is an ideal option for IoT-enabled application development. For instance, Global Sensor Networks (GSN), which is an open source middleware platform, helping the deployment and development of sensor services with virtually zero programming effort. Nowadays, most of the middleware framework for the IoT technology maintain a service-oriented approach to support dynamic network topology. It also maintains application protocol, service compositions, security protocol, interface sub-layer, service management, communication sub-layer configuration management, authentication management, device status, and machine-to-machine protocol management [14] [15].

(7) **Cloud computing.** This is a technological platform for real-time and on-demand connectivity/access to a shared pool of configurable resources. For instance, networks, computers, servers services, applications, storage, and application software that can be considered either as “Infrastructure as a Service (IaaS)” or “Software as a Service (SaaS).” One of the landmark outcomes of the IoT-enabled technology is- the huge amount of data gathered from devices/things connected to the Internet, and stored in a cloud-based platform []. Many IoT applications need bulk storage facilities for data management, fast processing speed to make real-time decision-making. Furthermore, the applications need high-speed broadband networks facilities to stream data. Given these criteria for IoT-technology to be ubiquitous, accessible, supportive lo IoT-enabled activities, cloud computing offers a standard back-end solution for storing and handling a massive amount of data streams. It also offers fast processing opportunity for the huge number of IoT devices and humans in real time scenario. Figure-8 shows three layers of IoT connectivity; Applications, Cloud computing and IoT-enable Wireless Sensor Networked devices [14] [15].
device-to-device connectivity in a reliable, secured, and robust manner. These applications supported devices and machines need to confirm that information/data have been transmitted properly, and these devices act upon assigned instructions. For instance, logistics and transportation-related IoT applications constantly monitor the condition of transported goods and carriers; such as fruits, meat, fresh-cut produce, dairy products and the status of vehicles. During the freight, the conservation status (for example humidity, temperature, shock) is monitored on real-time data, and take appropriate actions automatically to avoid spoilage. For instance, FedEx uses Sense Aware IoT application to keep track of their location, temperature, distance travelled, fuel consumed, and other vital signs of the packages and carriers. It also monitors the status of packages when the package is opened, and whether it was tampered with or not along the whole way. Although device-to-device applications do not necessarily need data visualization, however, more and more human-centered IoT-enabled applications provide visualization to transmit more realistic data to the end users. This visualization helps end user to understand the actual scenario, which also allows interaction with the environment. It is of paramount importance for IoT-enabled applications to be built with artificial intelligence so that the devices can monitor the environment, identify problems, communicate with each other, and potentially resolve problems without human intervention [14][15].

III. TRIPLE BOTTOM LINE PERSPECTIVE IN SCM OPTIMISATION

According to a broad review of several kinds of literature, including that of Ref [6] supply chain sustainability has three main elements, which are embedded in the sustainable supply chain; this includes environmental performance, economic performance and social performance. Ref [8] introduced triple Bottom Line (TBL). The author considered a concurrent balance among these three components giving equivalent standings to the microeconomic viewpoint. According to Ref [20] the ideal of firms been rewarded for points to minimize toxic waste products into the environment, providing health care for the society and the employees as a cooperate social responsibility is no more the case of been sustainable but instead, sustainability is now a basic rule for smart management in an organisation. Ref [6] also demonstrated that, the triple bottom line (TBL) performance must not be in isolation. Authors indicated that, they are other factors that organizations should consider at the connection point of triple bottom line since it can have environmental, societal impact and as well serve as a long-term benefit to the firms by making it more economically viable and giving them a competitive advantage over their competitors. Thus, TBL plays a significant role in today’s SCM strategy formulation and operational activities.

IV. IOT TECHNOLOGY AND ECONOMIC DIMENSION OF SUSTAINABLE MANUFACTURING

From the economic standpoint, IoT technologies in manufacturing play a game-changing role in profit making, with aggregated earning of $178 billion in 2016 in manufacturing which is the largest industry in the IoT [7]. The area for profit generations in manufacturing are; cost saving, improved asset utilization, accurate forecasting production planning, smart cost-saving plant monitoring, efficient processes, reduced maintenance cost, and improve productivity. American Society for Quality (ASQ) conducted the survey on IoT-enabled manufacturing companies to measure their performance. The result was astonishing; 82% agrees increased efficiency, 49% witnesses fewer product defects, and 45% experiences increased customer satisfaction [2]. The most significant contribution of IoT in manufacturing is IoT-supported Industry 4.0 revolution, which is based on cloud computing, robotics, and integrated operational technology (OT). Furthermore, Industry 4.0 refers to cyber-physical production systems (CPPS) which is an acceleration of the digital transformation. Moreover, IoT technology will enhance machine-to-machine interaction, predictive maintenance and big data integration in manufacturing decision-making [13][18].

In implementing IoT technology in manufacturing, Cognizant Sustainability Report (2014), however, identified few challenges such as; lack standardization and interoperable technology, data management complexity, limited machine data in the enterprise system, inadequate IoT analytics, and security concern. Sensor-based data may enhance informed decision-making by the managers; however, the automated system might also risk a person’s freedom of work. Thus, in the real-world scenario, people influence the capacities of IoT-based technologies by selecting different configurations, go for alternatives, or completely avoid it [4]. In sum, despite these challenges, IoT-based sustainable manufacturing initiatives have already shown tremendous potentials for improved and optimised manufacturing practices; such as the application of lean manufacturing, production visibility and manufacturing cost reduction. These activities have been positively associated with market performance as well [21].
V. IOT TECHNOLOGY AND SOCIAL DIMENSION OF SUSTAINABLE MANUFACTURING

The goal towards social sustainability in IoT-based manufacturing is to buttress innovation and increase effectiveness. IoT-based manufacturing leads to develop alternate and efficient energy supplies, and reduce the bulk amount of energy and resources consumed in the society [5]. IoT-enabled manufacturing solutions directly contribute to employees by ensuring staff safety applications, smart ventilation, real-time health monitoring, air quality management and energy saving for the community. It helped increase production capacity and greatly improved human condition as it affected all basic human needs [12]. Furthermore, the Industrial Revolution marked the use of machines as a substitute for human labour. IoT-based manufacturing avoids dangerous situations and delays and removes human interaction or intervention [6]. In a nutshell, from the social standpoint, IoT-based manufacturing benefit companies with predictive maintenance, safety and security of workers, air quality management, ecosystem management, smart ventilation, facility management, energy management, asset protection, quality improvement and price reduction. All these benefits would directly contribute to society [11]. For instance, The Global e-Sustainability Initiative research reveals that efficiency achieved by adopting digital production system will allow for saving of 61 billion liters of water, and 4.2 billion MWh electricity [17].

One of the practical oriented examples is telematics solutions by 'Topcon Positioning Systems' which allows farmers to track their machines, and act on real-time data. Sensor-enabled machines are connected via the cloud, gather precise weather, humidity, temperatures and wind speeds data that allow crops to flourish. Therefore, IoT-enabled real-time data analysis creates automated responses for the machinery [19]. This IoT-enabled production practice helps farmers to increase crop yields in different seasons. Thus, IoT-based technology significantly contributes to social wellbeing.

VI. IOT TECHNOLOGY AND ENVIRONMENTAL DIMENSION OF SUSTAINABLE MANUFACTURING

From the environmental angle, energy efficiency and green practices have come to the forefront of corporate strategies across the manufacturing industries. IoT-based technologies can effectively monitor various parameters; like temperature, machine faults, air pollution of industrial plants to improve the effectiveness of the system, and ensures energy efficiency consumption [10]. A report published by the Carbon War Room “Unlocking the Potential of a $1 Trillion Industry” assumes that the IoT-based manufacturing would able to reduce greenhouse gas emissions by 9.1 billion tons by 2020; which is equivalent to 18.6% of global greenhouse emissions in 2011 [10].

Cullinen proposed a methodology to have an IoT-enabled real-time waste monitoring and to analyse the data, which can be used to determine areas in the shop floor where waste reduction techniques can be applied. Fuertes developed a prototype of an IoT-based solid waste management system using open-source technologies. The system was able to track, collect, and manage solid waste with the use of the sensor. Results were compared with the acceptable threshold set by the US EPA and WHO.

VII. CONCLUSION

IoT technology is turning towards 'Internet of Everything' perspective. Therefore, its significance in the SCM domain is of greater importance for productivity and optimization. Furthermore, this technology should benefit manufacturing and SCM from financial, social and environmental perspectives to ensure sustainable organizational practices. Furthermore, despite having few setbacks, IoT-enabled manufacturing practices to witness potential for optimised manufacturing. To mitigate the challenges, researchers and practitioners are working relentlessly. Given this context, however, Managers should consider and implement evidence-based IoT-enabled manufacturing practices to maintain sustainability from TBL perspective. Future research may be directed towards IoT-enable manufacturing and SCM decision making through Artificial Intelligence, Web of Things-enabled manufacturing practices, and advance IoT-based manufacturing security issues.

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A Study on Bangladeshi Biscuit Industry: Consumer Perception towards Packaging

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Abstract – The aim of this study is to figure out the packaging effects on consumers’ perception, which influences the consumers in buying Bangladeshi biscuits. The research is conducted in two phases; primary and secondary researches. It’s a qualitative research. The objective of both of the researches is to find out the buying pattern and consumer preferences for buying biscuits on the basis of packaging. A survey questionnaire was prepared and the number of respondents is 106. The survey questions contain both close and open ended questions. Primary analysis is collected through structured questionnaires and graphical interpretations are used for analysis functions. The study shows how the packaging of the product helps to build consumer brand image. It shows that the quality of the packaging has a direct effect on the perceived quality of the product. It also helps to promote the product through its packaging. The study emphasizes on consumer perception based on packaging of biscuits made in Bangladesh.

Keywords – Packaging, Consumer Perception, Perceived Quality and price, Biscuits etc.

1. INTRODUCTION

Biscuits are becoming the snack choice of Bangladeshi consumers, enabling 15% growth per year. The market for biscuits is now worth Tk5000-6000 crore with large and well-known brands are taking up the major market share. The annual market for branded biscuits is nearly Tk 3,000 crore now. The market was earlier dominated by small bakeries. Demand for biscuits is growing as entrepreneurs have shifted to automation in baking and consumers are looking for a variety of quality foods at low prices. Traditionally the main function of packaging was to protect the goods while transit and handling. Packaging conveys the image that the brand communicates to the buyer. Packaging is the communication medium through which marketers directly communicate with the customers. Procedures, (for example, cleaning, drying, saving) and materials, (for example, glass, metal, paper or paperboard, plastic) utilized to contain, handle, secure, as well as transport an item. Part of packaging is expanding and may incorporate capacities, for example, to pull in consideration, aid advancement, give machine ID (standardized identifications, and so on.), give basic or extra data, and help in usage. Moreover, it is sometimes called “last five seconds of marketing” or “permanent media” or “the last salesman. Packaging helps the customers to feel more valued. Those products which have better packaging are considered to have higher perceptual position in the mind of the customers. In order to find the answer of the research question both primary and secondary research are done to identify the perception and significance of packaging for Bangladeshi consumers in Biscuit industry. It focuses on how packaging can influence buyer’s buying behavior and its effects on brand equity. Both primary and secondary researches were done based on theories based on consumer’s behavior. The latter part is the recommendations given by the respondents.

2. METHODOLOGY

The research for this study has been conducted in two phases; primary and secondary research. The secondary research includes books, journals, working paper, newspaper articles etc. The primary research includes web based surveys and in-depth interviews of 106 respondents. For primary research a questionnaire was prepared covering the key issues of the study such as brand image, influence in purchasing behavior, quality of packaging, perceived price, significance of design, hygiene factors, attitude towards the product etc. The questionnaire mainly used likert scale to conduct the survey with five point scales like Strongly disagree, Disagree, Neutral, Agree and Strongly Agree. Likert Scale is the most commonly used and widely liked by the respondents along with it helps to focus on one particular topic. The questionnaire also contained one open ended question where respondents have the freedom the write down their recommendations on their preferred packaging. All the respondents are Bangladeshi and age group is around 15 to 40 years old.

Data from secondary sources mainly explained the current market trend and biscuit industry of the country. Academic theories were also explained and how it is related with the findings from the primary research also discussed thoroughly. Academic theories like sensation, consumer imagery, Multi attribute attitude model etc have been applied in this study. The recommendation provided by the respondents helped to identify how their attitude towards the brand can be changed through alteration in packaging.
3. ANALYSIS:

The result of the survey is been described and given below through graphical format. From the study, it is shown than Age from 15 to 40+ years old have participated in the survey whereas 52% of them were female and rest is male.

The graph shows that the role of packaging in fulfilling the hunger lies between neutral and agree. The packaging creates a moderate influence in fulfilling physiological needs of consumers.

The above result emphasizes how premium packaging has a positive impression on brand equity. Sensation plays an important role here. Respondents perceive that if the packaging is good that brand will be also good.

Good Packaging helps to stand out from its competitors. It helps to attract the variety seeking customers to buy the product. 57% of the respondents agree that packaging influences their buying behavior.

The graph shows that packaging is positively correlated with perceived quality of the product. 56% of the respondents agree that packaging creates a perception of the brand. Various stimuli like color, design, materials and ingredients help to create a distinct impression of the brand.

The graph proves that better packaging helps to create a positive impression of not only the product but also the organization itself. 38% of the respondents agree and 21% respondents strongly agree in response.

It shows a price/quality relationship. Various stimuli such as quality packaging and design portrays its expected pricing and people made a perception about the price of the product.
The above question also reflects the perception of the consumers towards its packaging. Most of the respondents agree that packaging has a strong influence on quality of the product.

The graph shows that consumers are aware of the packaging materials and quality of the design while buying biscuits.

The above graph discusses that majority of the respondents agree about the information written on the packaging is an important factor.

This question has mix responses about the basis of the preference of buying biscuits. Out of 106 respondents 31% agree that packaging is more preferred than brand name while biscuits. On the other hand 35% neither agree nor disagree about their preferences. 20% of the respondents disagree about it.

4. DISCUSSION

The questionnaire contains several key issues related with packaging such as quality design, quality materials, information selling, color, brand equity etc. influence in consumer buying behavior. From the response of the survey we came to a conclusion that sensation plays a significant role while choosing the product. Most of the wrappers of the biscuits made in Bangladesh is very colorful so consumer is influenced by its color as well as materials of the packaging. The study also shows that premium packaging has a positive correlation with the brand image as well as pricing. Packaging builds customer image on biscuits. It is directly related with the positioning element of the consumers. There is a significant statistical effect of "the role of packaging in promoting the products" on Jordanian consumer's perception of product quality at the Point of purchase. A study suggested that color and design contrast can attract huge number of consumers. Product quality perception, and also this finding is supported another study who found that there is a strong positive correlation between promotional role of packaging and consumers' attraction to good packaging. The color and the design of the wrapper of biscuit brands in Bangladesh must be of high quality to grab highest consumers. Perceived price and quality is hugely determined through packaging.

6. FINDINGS & RECOMMENDATION

The aim of this paper is to identify effects of consumer perception towards packaging. From the above analysis the study has found several major findings. First of all, good packaging carries a positive image of the brand and add value to the brand equity. Secondly, it is also associated with pricing and good quality. People perceive premium packaging as a good quality product as well as expensive. Thirdly, distinct color and premium packaging makes the product stands out from its
competitors. In addition, packaging style and quality plays a positive and influential role in consumer buying behavior. Just as packaging quality is important to consumers so is marketing role in packaging information and selling. Package design and materials choices can reflect the brand image. The study shows that people are aware of the information written on a package and they read it before buying the product. Lastly, it is shown that premium packaging is positively correlated with brand equity. If the brand is good, then consumer expects the packaging would also be good.

Majority of the recommendations are suggested by the respondents. Many respondents suggested the packaging should be more environmental friendly and it could be recycled. Few respondents recommended about using zip bag as a package so the biscuits should be easy to keep and the biscuits will be fresh. Different sizes of packaging of biscuits are highly recommended. Most of the packages of our biscuit companies are family size. Different sizes such as pocket size should be introduced more widely.

7. LIMITATIONS & FURTHER STUDY

The research supports that packaging perception influence the buying behavior of the consumers. The major limitation is the whole study is conducted within a period of 3 weeks. Along with the number of respondents are only 106 who are mostly urban dwellers. So the outcome can be considered is a bit biased. The biscuit industry in Bangladesh is expanding very quickly but yet there is not much research about it. So a large number of areas are still unexplored, further research about the various aspects of this industry will really help the industry to bring more quality products.

REFERENCE

Finished Product Delivery Performance Measurement at Louserindo Megah Permai using SCOR Model and Fuzzy-AHP

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Abstract – Competitive advantage is determined by the productivity of a manufacturing industry and the quality of its processes. Louserindo Megah Permai (LMP) manufactures elevators, and uses supply chain management in its production processes. This study aims to measure the performance of supply chain management in the process of delivering the finished product to the customers. SCOR performance management method is supported by the Fuzzy Analytical Hierarchy Process (FAHP) approach in the process of determining the weights on each metric. This study focused on the Delivery part of SCOR method. The result showed that LMP needs to improve performance on eight SCOR performance indicators: (1) Delivery Performance to Customer Commit Date, (2) % Faultless Installation, (3) Days Payable Outstanding, (4) Rout Shipments Cycle time, (5) Deliver Cycle time, (6) Ship Product Cycle time, (7) Load Vehicle & Generate Shipping Documentation Cycle time, and (8) Install Product Cycle time.

Keyword – Product Delivery Performance Measurement, Competitive Advantage, SCOR, Fuzzy Analytical Hierarchy Process

INTRODUCTION

The challenges facing the manufacturing world are always changing and increasingly more severe over time. Competitive advantage in this era is not only determined by the ability of an industry to produce a lot of equipped to compete in the market. Customers begin to differentiate products by quality. The product quality is very dependent on the process, people, and the overall system. Quality control is no longer enough just to do with the model product inspection, but more fundamentally to look at the process [1]. Louserindo Megah Permai (LMP) is a company engaged in the manufacture of elevators. The company has produced more than 2,000 elevators and has more than 50 suppliers to provide the raw materials and components. The elevator types produced by LMP include passenger lifts, bed lifts, home elevators, dumbwaiters, escalators, and travolators. To maintain customer trust, LMP products have been certified ISO 9001: 2008 [2]. This study measured the performance of LMP supply chain management stage in the delivery process of its finished product. The method used in measuring the performance of SCOR method is supported by the Fuzzy Analytical Hierarchy Process (FAHP) tool in the process of determining the weights on each metric. The focus of this study is LMP activities in moving the finished products, staging, releasing and delivering/installing the finished products in customer premises.

METHODS

The steps to calculate the product delivery performance for LMP is shown in Fig. 1. After the required data was sufficient to proceed with calculation, SCOR method was used in three level mappings. Further, FAHP was applied using the responses from selected LMP experts using prepared questionnaire. The output from the FAHP was then processed using MS Excel to obtain the final results on LMP SCM performance.

DATA COLLECTION

Data collected for this study included LMP’s general information, production plan, delivery plan, products inventory, on-time delivery data, and financial data. The most needed data for this study is the performance measurement in the stages of finished product and release finished product to deliver at LMP. Fig. 2 shows the overall LMP Supply Chain business activities. The selected processes to be
further analyzed in LMP are process element stage finished product and release finished product to deliver. This concludes what should be done with the SCM problems faced by LMP.

To obtain good data for this study the author applied some relevant technical methods as follows.

i. Observations
Observations performed here was on the activities performed by human beings using questionnaires. In this study, the author performed the performance measurements in the area of stage finished product and release finished product to deliver in LMP.

ii. Interviews
Interviews are data collection method in which interviewer ask interviewee some prepared relevant questions. The interviewees are the LMP works the manufacturing and installation namely the workers and supervisors at LMP.

DATA PROCESSING USING SCOR AND FAHP METHODS.

(a) SCOR Theory
Supply Chain Operations Reference (SCOR) is a conceptual model developed by the Supply Chain Council (SCC) [3], as an industry standard for benchmarking SCM processes and performance measurements to ensure readiness for competition. SCOR also provides companies or more accurately between supply chains, process reference model concept emerged as a logical extension of business process re-engineering and other process improvement efforts. It is also the first cross-industry framework for evaluating and improving enterprise-wide supply-chain performance and management. SCOR, with its predefined set of standard process definitions, terminology and matrices, is structured in four levels (process types, process categories, process elements and decomposed process elements), is based on SCOR processes plan, source, make, deliver framework (Refer to Figure 3). This study used SCOR in identifying the relevant activities with the delivery/installation of finished products at the customers premises.

Figure 2. Overall LMP Supply Chain

Figure 3. Core Supply Chain Process at SCOR Model [3]

i. Plan
Is the processes that balance overall demand and supply that aims to develop shipping needs, optimal production and supply. Plan includes the process of assessing the needs of the distribution, planning and inventory control, production planning, material planning, capacity planning and make adjustments supply chain plan with the financial plan.

ii. Source
Is the processes of purchasing goods and services that aim to meet planned or actual demand. The processes depend on whether the items purchased include stocked, make to order, or engineer-to-order products.

iii. Make
Is the processes of transforming the input materials into final products to meet the actual demand planned. Make or production activities can be done on the basis of forecasts to meet the target stock (make-to-stock), on the basis of orders (make-to-order), or engineer-to-order. The processes involved here are production scheduling, engage in the production and perform quality testing, to manage semi-finished goods, maintain production facilities, etc.

iv. Deliver
Is the processes of providing finished products / services to meet planned or actual demand, including order management, transportation management, and distribution. The processes
involved are handling orders from customers, choose the delivery service company, handling the finished product warehousing activities and send the bill to the customer.

v. Return
Is the processes that exploits a refund and receipt of products by category of product returns. This process expanded to maintenance services after delivery of the product to consumers. Post-delivery-customer support is also a part of the return [3].

(b) Application of SCOR

For this study, the part of SCOR applied is the Deliver part as it involves the business activities of delivering the finished products (elevators) to the customers and installing them in the customer’s premises.

Data collected are processed in sequence in the following procedure:

Identify the supply chain scheme at LMP supply chain and conduct performance measurement following SCOR method as described here:

(i) SCOR Level-1 Mapping
At this SCOR level-1 we defined processes: plan, source, make, deliver, and return with related departments for each processes. The attributes used here are identified as follows:
• Perfect Order Fulfillment (POF), the percentage of orders delivered in full with accepted quality and on time as requested by the customers:

\[
POF = \frac{Total \ customer \ orders - orders \ with \ problems}{Total \ customer \ orders} \times 100\%
\]

• Order Fulfillment Cycle Time (OFCT), the number of days needed from the day the order is received from the customer until the product is received by the customer.

(ii) SCOR Level 2 Mapping.
At the configuration level the LMP supply chain defined around 30 main business processes. LMP defined the metric on this level-2 based on the chosen level-1 metrics.

(iii) SCOR Level 3 Mapping
This is the process element level, including the definition of input and output process elements, and the related references (benchmark and best practices).

FUZZY ANALYTICAL HIERARCHY PROCESS (FAHP)

FAHP method is used for the selection of an alternative and problem solving by combining the concept of fuzzy theory and analysis of hierarchical structures. The use of fuzzy method enables combinative decisions to incorporate qualitative and quantitative data into the decision model. For this reason, the decision makers are usually more confident to give judgment in the form of ranges rather than vote in the form of a certain value.

Registering membership functions commonly used, triangular and trapezoidal functions pealing is often used because of the ease in modeling and interpretation easier (Omar, 2015).

ANALYSIS

a. Determine the weights for some elements which becomes part of the make-to-order (MTO) process. This includes the stage finished product and release finished product to deliver. The method used for this purpose is Fuzzy Analytical Hierarchy Process (FAHP) to find out which metrics have significant impacts to LMP. The data for this purpose is obtained from the questionnaire distributed to selected experts on the related problems or issues.

b. Perform analysis on the attributes with the lowest performances and then provide the recommendations on how to improve their performances.

RESULTS

The data collected to measure supply chain performance in LMP includes: an overview of the company, production plan and actual, plan and actual delivery, purchase order, sales order, financial data, and data assets. LMP produces several types, namely passenger lifts, bedlift, homelift, dumbwaiter, escalator and travolator. Of the several types of the elevators will have one of a kind type of lift is based on most orders data.

The data required have been collected, the next stage of data processing is performed based on the stage of the supply chain process in the LMP.

Figure 2 is a picture of the core processes in the supply chain of LMP. The next step is to identify the business processes at LMP on each core supply chain process. In the scheme of supply chain that have been made based on business processes in the LMP, the
next step is preparing the SCOR metrics compiled structured hierarchy.

Based on the created triangular fuzzy cluster, the linguistic data is shown in Table 1.

Table 1. Linguistic Data

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolutely</td>
<td>0.1111</td>
<td>0.1111</td>
<td>0.1429</td>
</tr>
<tr>
<td>Very Strong</td>
<td>0.1111</td>
<td>0.1429</td>
<td>0.2</td>
</tr>
<tr>
<td>Strong</td>
<td>0.1429</td>
<td>0.2</td>
<td>0.3333</td>
</tr>
<tr>
<td>Weak</td>
<td>0.2</td>
<td>0.3333</td>
<td>1</td>
</tr>
<tr>
<td>Equal</td>
<td>0.3333</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Weak</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Strong</td>
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</tr>
<tr>
<td>Very Strong</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Absolutely</td>
<td>7</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

Stages of further data processing is to calculate the value of SCOR on every business process in accordance with the LMP supply chain scheme that has been made. Fig 4, provides an example calculation for one of the business processes in the LMP i.e. the delivery of goods to customers. The figure shows the accuracy of delivery of each quantity on the type of passenger lift.

Table 2. SCOR Criteria Weight Ranking

<table>
<thead>
<tr>
<th>Criteria</th>
<th>WEIGHT</th>
<th>RANKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>0.1176</td>
<td>4</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.1793</td>
<td>3</td>
</tr>
<tr>
<td>Cost</td>
<td>0.2328</td>
<td>2</td>
</tr>
<tr>
<td>Asset Management</td>
<td>0.4702</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2 shows the result of calculation of the ranking by the experts on the SCOR criteria.

Results of calculations based on the provisions of the calculation formula which has been determined by the SCC. For all the SCOR calculation on every business process at which the supply chain, based on the rules form SCC. Table 3 shows the recapitulation of SCOR calculation on specific business process in LMP.

DISCUSSION

LMP used SCOR process in four core processes: Plan, Source, Make, and Deliver. Plan conducted by the Marketing and PPIC departments; Source by the Procurement and Warehouse departments; Make the Production Department and Deliver is conducted by the Logistics Department.

The results of the calculations indicated that LMP’s delivery performance is low. Therefore LMP needs to do some improvements in some known metrics to improve the performance of the specific workers. The SCOR performance variables measured are customer-focused metrics as follows:

- Reliability [Perfect Order Fulfillment],
- Cost [Total Supply Chain Management Cost],
- Asset Management [Cash to Cash Cycle Time] and
- Responsiveness [Order Fulfillment Cycle Time].

For the year of 2015, the value of LMP performance was 81.02%. LMP Obtained 9 low-performance metrics, namely:

a) Delivery Performance to Customer Commit Date [60%]
b) Faultless Installation [55%]
c) Route Shipments Cycle Time [60%]
d) Deliver Cycle Time [30%]
e) Ship Product Cycle Time [60%]
f) Load Vehicle & Generate Shipping Documentation Cycle Time [60%]
g) Install Product Cycle Time [30%].
Table 3. Recapitulation of SCOR calculations

<table>
<thead>
<tr>
<th>Element</th>
<th>Process MTO</th>
<th>%</th>
<th>Metrics</th>
<th>%</th>
<th>Level 1</th>
<th>%</th>
<th>Level 2</th>
<th>%</th>
<th>Level 3</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td></td>
<td>10.49%</td>
<td>Perfect Order Fulfillment</td>
<td>99.99%</td>
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<td>Responsiveness</td>
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<td>Order Fulfillment Cycle Time</td>
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| Delivery Location Accuracy | 95.00% | | | | | | | | |
| Customer Order Date Achievement | 42.00% | | | | | | | | |
| Shipping Date Accuracy | 95.00% | | | | | | | | |
| Compliance Date Accuracy | 97.00% | | | | | | | | |
| Other Required Date Accuracy | 95.00% | | | | | | | | |
| Payment Date Accuracy | 95.00% | | | | | | | | |
| % Orders Delivered Damaged Free | 90.00% | | | | | | | | |
| % Orders Delivered Defective | 98.00% | | | | | | | | |
| % Orders Processed Complete | 98.00% | | | | | | | | |
| % Other Installations | 97.00% | | | | | | | | |
| Cost to Deliver | 98.00% | | | | | | | | |
| Cost to Build Load | 99.00% | | | | | | | | |
| Cost to Checkpoint | 99.00% | | | | | | | | |
| Cost # of Orders | 99.00% | | | | | | | | |
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| Finished Goods Inventory Days of Supply | 100.00% | | | | | | | | |
| Source Fixed Asset Value | 79.00% | | | | | | | | |
| Capacity Utilization | 21.00% | | | | | | | | |
| Recieve, Configure, Enter & Validate Order Cycle Time | 95.00% | | | | | | | | |
| Finalize Production Engineering Cycle Time | 95.00% | | | | | | | | |
| Start Setup Cycle Time | 95.00% | | | | | | | | |
| Select Carriers & Route Representatives Cycle Time | 95.00% | | | | | | | | |
| Delivery Cycle Time | 95.00% | | | | | | | | |
| Ship Product Cycle Time | 95.00% | | | | | | | | |
| Load Vehicle & Generate Shipping Documentation Cycle Time | 95.00% | | | | | | | | |
| Pick Product Cycle Time | 95.00% | | | | | | | | |
| Check out Cycle Time | 95.00% | | | | | | | | |
CONCLUSION

The cash-flow gap or cash cycle time, i.e. the period of time between LMP pays for raw material suppliers and the time LMP receives payments from the customers for products made from the raw material is 325 days, i.e. from January 2015 to November 2015. This is too long that LMP often has difficulties to meet its payment obligations, and should be shortened by pressing the customers to pay earlier.

REFERENCES


Implementation of Deep Sea Port in Bangladesh: Demand and Dilemma

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Abstract – Being an important gateways of international trade, the port functions are regarded as a major accelerator of local economic development, specially at this era of globalization. In this context, requirement of a deep-sea port in Bangladesh is felt indispensable to cope with the present trend of open market economy. The aims of this paper was to find out the necessity of third sea port to mitigate the existing and forthcoming national and international demand with respect to the physical constrains of existing port infrastructure and transport facilities in Bangladesh and finally, various dilemma on adopting international influential proposals towards planning and financing this mega project. Specially, it was an analytical research using secondary data from various sources, based on available port facilities and performance of Bangladeshi seaports in compare to the international set standard. Even though the strong need is visible, a lot of initiatives, plenty of commercial incentives to build a new deep sea port etc. are yet to find any rhythm to materialize. Despite the available strengths and opportunities countering the weakness and threats illustrated in this article, in a nut shell, deep sea port development in Bangladesh is crucial and true time to take all necessary measures by the government and other concerned authorities for making congenial atmosphere with the local and international investors towards developing the deep sea port soonest.

Keywords – Port, Bangladesh Economy, Deep Sea Port (DSP), Economy, Maritime silk road.

INTRODUCTION

In economists point of view, deep-sea ports can change the whole import and export scenario of a country. Due to its geographical location, Bangladesh is important for neighbouring land-locked territories and countries of Asia. Additionally, the Bay of Bengal has given Bangladesh some rare advantages as a trader for neighbouring countries to conduct their businesses using this country ports. Bangladesh, a country having world’s fastest growing economy, expected to rise up to 7.1% this year has already captured the place on Goldman Sachs’s list of the “Next 11” emerging economic powerhouses of the 21st century. Basis on the fact that the country having world’s second-most vibrant textile industry, largest jute exporter of the planet, giant global tea supplier, Bangladesh’s export sector is booming, and is expected to eclipse BDT 240 billion in value by 2020. This is all in a country without adequate maritime infrastructure. Unluckily, since 47-years of independence, Bangladesh is still relying on only two major sea port with inadequate port facility and surprisingly has never succeed to built a new one with better facility.

The existing demand of about BDT 580 billion of annual trade (import & export) is currently handled through these handicapped seaports, Chittagong and Mongla. Both are too shallow and having emphastructural constrain to handle such a large volume of consignment. More often require costly load transfers to lighter vessels to get cargo in and out — which not only consuming the valuable time but also creating an extra additional cost worth $15,000 per day, which is definitely an unacceptable wastage.

With tremendous increase of cargo volume, the need for a deep sea port in Bangladesh is becoming critical.

METHODOLOGY

This study was administered by field survey method on the basis of which interview and document analyses were conducted. Official documents and publications, unstructured interviews, administrative proposal through questionnaire were entitled to conduct this study. This study included respondents from Chittagong Port, Mongla Port, freight forwarding companies, logistics Companies, manufacturing companies, exporter and importer, and other government employees related to port activities. This literature study mostly from the secondary source was a method applied during the whole process.

CONCEPTUAL CLARIFICATION

This chapter conceptualizes the key variables in this study and establishes their relationship. Thereafter, a review of some existing relevant delineation of subject variables and their theoretical base of selection are justified.
DEEP SEA PORT

Under 33 U.S.C.S. 1502(9) deep water ports are delimited as “any fixed or floating manmade structure other than a vessel, or any group of such structures, that are located beyond State seaward boundaries and that are used or intended to use as a port or terminal for the transportation, storage, or further handling of oil or natural gas for transportation to or from any State, except as otherwise provided in section 1522 of this title, and for other uses not inconsistent with the purposes of this chapter, including transportation of oil or natural gas from the United States outer continental shelf.”

However, above definitions failed to consider the differences inherent in handling different grades of commodity or achieve global acceptance by disregarding geographical boundaries. Therefore, these definitions are not suitable for this study and eventually disregarded.

As referred by the maritime industry guide “MARINE INSIGHT” a deep sea port, from its nomenclature can be suggested that is different from regular ports in respect of the depth of water. A deep sea port is usually made up for the usage of very large and heavily loaded ships. The depth of water helps get them access to the deep water ports. The definition or statement mentioned above regarding “deep sea port” is comprehensive and includes important distinguishing criteria of requirements and facilities with respect to others and is therefore considered for this study.

NATIONAL DEVELOPMENT

John Vaizey defines “National development is the total effect of all citizen forces and addition to the stock of physical, human resources, knowledge and skills.” United Nations Decade Report has defined it as: “National development is growth plus change. Change in turn is social and cultural as well as economic and qualitative as well as quantitative”.

National development could simply be defined as national growth in all ramifications (economic, social, cultural, political and environmental). It involves all the activities which a nation engages in to achieve a good standard of living for her citizens. The main purpose of national development is to liberate citizens from the shackles of poverty. Hence economic, political, social, cultural, physical, spiritual, material and moral development of a nation is inevitable for freedom and dignity of man.

Overview

Bangladesh is a country with a terrain of 1,47,570 sq km located at the eastern part of South Asian region; mostly surrounded by India to the north, east and west with a shared border of 4,156 km, and 271 km with neighboring Myanmar at her southwest part. Remaining, the southern part consisting the Bay of Bengal is an open stretch of 710 km serving as an access to the rest of the world. Most of her economic activities are supported by the east and west bound Sea Lines of Communication (SLOC) connecting Bangladesh. About 92% of seaborne trades that offers livelihood of her 30 million of citizens, is directly linked with the Bay of Bangle.

CHITTAGONG PORT

Chittagong port is the prime seaport of Bangladesh, situated in the estuary of Karnaphuly River, around 16 kilometers (8 NM) inshore from the port’s outer anchorage. The past of Chittagong Port can be exhumed from the 4th century BC. It was known as “Shektang” during the 9th to 15th century AD by the European seaman. In the 16th century, it was named “Porte Grande” by the Portuguese sailors. The port was constructed at its existing location in 1887. Four additional jetties were constructed by 1910, to handle 0.5 million tons of commodities annually. Gradually the port has developed at its current shape over a period of time.

Chittagong Port handled over 73.17 million metric tons of cargo including 2.42 million TEUs (approx.) containerized cargo during the year 2016-2017. Chittagong Port handles 92% of all import and exports and 98% of the container trade of Bangladesh. The port is facilitate with hinter land connectivity by rail, road and waterways. Moreover, the Chittagong international airport is only 8 km away from the port. Kamlapur ICD (Inland Container Depot) with handling capacity of 90 thousand TEUs is operational since 1987. Newly built Pangaon ICD is also connected with Chittagong port to handle containers though inland water transport.

Following are the existent major limitations of Chittagong Port:

1. Geographic Location: About 90 degrees of sharp turning requires with in the 16 km narrow channel from the outer anchorage.
2. Draught Limitation: Maximum permissible draught is 8.50m to 9.20m and maximum permissible length of a vessel is 186 metres. The shallowest depth of channel water is only 4.9 metres.
3. Pilotage and Night Navigation: As per the Chittagong Port Authority ordinance, Pilotage is compulsory during berthing and departure. The ships are limited to 153 metre LOA for inward and outward movement during night navigation, and subjected to 24 hours prior notification.
4. Problem of Freshet: In case of freshet, the outgoing current exceeds 10 knots without any ingoing stream, thus making the navigation more challenging.
5. Turn-around Time and Expenditure: Higher turnaround time of results higher operating cost for the port users, creating negative impact on international competitive market.
6. Other Problems: Poor port performance, political unrest, dwell time of containers/cargo, complex and lengthy handling and clearance procedure, delay in custom clearance, lack of integrated transportation system with hinterland, labour unrest, lack of security from thieves adds challenges to the ship handlers to keep things safer.

MONGLA PORT
18 km upstream on the Pashur River, Mongla Port was started its journey since 11 December 1950. The name Monglaintigrated from the river Mongla, presently recognized as Mongla Nulla. Presently, Mongla port, connecting major inland river port, is located at the convergence of the Pashur River and the Mongla River at a distance of 131 km inland from the Fairway Buoy in the Bay of Bengal.
The existing capability of Mongla Port is to handle 225 metre long ships. During the year 2016-2017, Mongla Port handled over 7.5 million metric tons of commodity and given service to more than 17 hundred of vessel (including IND-BD protocol vessels).
Following are the existent major limitations of Mongla Port:
1. Geographic Location: The maximum permissible draught is 6 - 8.0 metres and up to 225 metre long ships can enter into the port.
2. Draught Limitation: The channel is shallow, narrow and silted in many place resulting risky navigation up to Mongla anchorage or jetties.
3. Inefficient Management of the Port: Statistics reveals that like other government agencies port authorities are also inefficient enough in managing the port operations.
4. Labour Issues: Strike, over employment, demand for undue wages are the regular phenomena.
5. Structural Shift in the Foreign Trade: In foreign trade sector, Bangladesh economy has experienced some structural shifts in terms of composition and destination of trade (example: Jute).

GENERAL DISCUSSION: NECESSITY & CONTRIBUTION OF DEEP SEA PORT
Contribution to the growing economies:
According to the IMF’s latest World Economic Outlook Bangladesh is one of the world’s fastest-growing economy. The country’s GDP is projected to grow by 7.2% in 2019. Inspite of political instability and economic reforms, that have made headlines around the world, have supported this economic growth. However, one of the major factors that has slowed down the pace of farther economic growth in Bangladesh is the lack of proper transport infrastructure, especially sea ports.
Where 15% of the country’s GDP is dependent on the export of readymade garments, the importance of building of DSP is easily understandable towards handling such large volume of consignments with minimum freight rate, and thus to make contribution to this fastest growing economy.
Forthcoming future demand:
At the era of globalization, the advancement in transportation and communication technology, combined with free market ideology, have given rise to unprecedented mobility of goods and services. As a result, regional economies in the world are rapidly integrated into one global economy. Ocean, as a major international trade route, provies the low cost and massive transport means.
The trend of the record reported by UNCTAD reveals that the upcoming demand of seaborne trade in developing economy like Bangladesh is much higher than that of the transitional &developed economy. Still the larger ships currently require to shift their cargo to lighter vessels to the safe reach of the available water draft. Incase of Mongla Port, the situation found even worse than that of the Chittagong. Report reveals that the longer turnaround can cost an extra $15,000 per day for making Chittagong port.
Lower operating cost and handling larger vessels
Due to the physical and other constrain, with the construction of new facilities in existing ports of Bangladesh, the trade handling capacity would not increase up to the mark in compare the forthcoming future demand. Because, presently both the existing ports are handicapped in their available draft as well as the
scope of structural enlargement for further development. Whereas to cop up the future demand of huge consignment with competitive freight rate, new built vessels are ordered to make larger than the earlier vessels as the table below shows. Therefore to enjoy this freight reduction, a new deep sea port is so essential without relying on existing Chittagong & Mongla ports.

**Maritime Silk Road**

Bangladesh can play a significant role in China's plan for reinforcing their trade routes, having a network of ports established by China, called the 21st Century Maritime Silk Road. Based on the principle of mutual benefits, the plan also connects the Silk route economic belts where a number of economic corridors are planned in China's immediate neighborhood - the Bangladesh-China-India-Myanmar economic corridor (BCIM EC). Bangladesh has to develop a deep-sea port to meet the demand of its domestic economy as well as to cater in vast regional hinterland and therefore to change the whole economic geography of the region. The construction and expansion of the BCIM-EC at the apex of the Bay of Bengal and in the intersection of the 'Belt & Road' is bound to open up immense opportunities for trade, traffic and industrial growth. Implementation of the initiatives will assist Bangladesh to transform its geographical position into economic advantages and other benefits. For example: by enhancing diplomatic relationship it will be possible to strengthen mutual cooperation & coordination towards trade, infrastructure development, ocean exploration, agriculture, education, human resource development, cultural cooperation, and in many other fields. There is a bright future to emerge as a transportation hub in the Asia-Pacific region promoting regional connectivity network. It can attract foreign direct investment (FDI) and other contribution by establishing exclusive industrial economic zone. Easy to access to the giant markets in China, India and elsewhere by adopting free trade facilitation. It can solve the industrial energy and power problems by mutual energy cooperation. The poverty alleviation as well as the dynamics of development of Bangladesh can be speed up with the support and assistance from China.

**Reducing Port Turnaround Time**

As per the navigational information, maximum permissible draught of vessel is in the range of 8.50 m. to 9.50 m and maximum LOA is 165 meters for Chittagong which is the biggest deep sea port in Bangladesh. Tides are important for navigation, as it determines the possibility of crossing the shallow water between Kutubdia and the Karnaphuli entrance (within the Port limit). As per the below statistics, if it is possible to bring down this extremely high vessel turnaround time from 6.9 days to 1 day to attain international standard, the operating cost of the ship owners would come further down. As the berthing and cargo handling facilities are not yet improved up to the mark, extreme congestion of vessel at Chittagong port has turn down its reputation at the global competitive market. Prolong vessel waiting time at anchorage is not only due to non-availability of berthing space, but also the draft limitation and other operational constrain.

The stakeholders have to count a huge loss every day due to this largest-ever container congestion. This may drive the ship-owners to divert their vessels to nearest available destinations or impose further surcharge. Therefore, saving service time would be competitive edge for deep sea port to encourage the respective stakeholders to select DSP as their profitable destination in the region. PCI Japan has estimated that the service time savings of DSP would be equivalent to 19.1 million USD by 2030.

**Rampal Coal Fired Power Plant**

The mega project Rampal Power Plant is part of the country’s Master Plan 2010 in energy sector, which aims to expand and diversify the Bangladeshi electricity sector away from the current dominance gas- based power generation toward a higher percentage of imported-coal-based power generation. There will be 3.8 million tons per annum (Mtpa) of coal would need to be required to keep the plant running at an 80% Plant Load Factor (PLF) (80% of 4.72Mtpa). Bangladesh has coal reserves of over 2,000 million tonnes (Mt), about 1,000Mt are considered economically viable for mining. Based on the fact, the plant is being designed to utilize coal with calorific value of 5,800-6,100 Kcal/kg imported from Indonesia, Australia and/or South Africa. In May 2016, it was reported that the plant may utilize coal from China, Indonesia or the state-run Coal India Limited. To handle this huge amount of coal import is not feasible via existing two major sea ports of Bangladesh, therefore the facility of deep sea port is crucial.

**Country require LNG import**

Presume on the base of increasing gas demand, country’s natural gas reserve would run out within 10 to 12 years or else to regulate consumption to increase for some more years. The Government of Bangladesh is seriously concern about the exhaustion of natural gas, and very much sincere about finding alternative energy sources. It is easily understandable how our industries, power sectors and even our daily life could be affected if gas is depleted in near future. At present, the country is
experiencing shortage of the natural gas of about 500 MMSCFD. To minimize the supply gap, the Government has taken up necessary steps to import LNG particularly to meet the need of the Chittagong area. Under this project, installation of a floating storage and Re-gasification Unit (FSRU) at Moheshkhali approximately 90 kilometers south of Chittagong and construction of 30” x 115 km transmission pipeline from Mohesh Khalito Ring-Main at Foujdarhat in Chittagong are expected to be completed by 2017. In addition, Petrobangla has started initial activities to install two land based LNG terminals, one at Moheshkhali and the other at Paiera port area.

STRENGTHS & OPPORTUNITIES

Strategic geographical location:
Although a small country, being located in the armpit of India and right on the Indian Ocean that contains 25% of the world’s land, 40% of its oil and gas reserves, Bangladesh is in clutch of geopolitical importance. The Indian Ocean hosts one of the world’s most important and busiest shipping lanes that supplies bulk crude oil from Middle East to East Asia. Bangladesh is pliable in both politically and economically—like a ball of clay—and has become one of the staging grounds of global interests from east to west.

It is a keystone nation in the region, balancing together the contending influences of the giant nations like India, China, the United States, and Japan. As per China’s dream of the 21st Century Maritime Silk Road, Bangladesh is a major part of its maritime agenda. Although China’s declared it as merelya commercial project, for others it is a potential militaristic ramifications or atleast influential strategy to push their own competing agendas. The concern was first brought forward by Booz Allen Hamilton internal report 2005 named “String of Pearls”prepared for the U.S. Department of Defense. Eventually the geopolitical competition has risen to the apex while making decision for selecting the site and the financier of Bangladesh’s first deep sea port.

Population as a source power
As per the latest “Worldmeters report” The current population of Bangladesh is 164,080,386 as of 5th Aug 2018, based on the latest United Nations estimates. It’s population is equivalent to 2.19% of the total world population and ranks number 8 in the list of countries (and dependencies) by population.

A country having such a huge population has already drawn the attention of the world’s giant investors with respect to it’s low labour cost, one of the largest consumer of south Asian region, investment friendly motivated outlook of people. From “sustainable development plan” point of view, if Bangladesh succeed to establish its first deep sea port at earliest convenient opportunity, the whole nation will able to cut the corps of benefit like poverty alleviation, creating huge job sector in maritime industry, lowering the price of consumable items by lowering operating cost, as well as can gain a huge remittance by exporting hand-made products like garments, jute products etc.

Geographical advantages
The base of the deep sea port concept is not laying merely on the probability& expectation, indeed, the area is considered as a gift of nature for Bangladesh. The bathymetric (sea bottom topography) condition of the area is hydrographically balanced and stable for more than 100 years. Geographically it stands on the vortex of the Bay of Bengal, hindering the rough sea access to the entire region. There is a narrow deep strip of Bay having a natural depth of 14m near Sonadia island of Bangladesh. Careful utilizationofthis exceptional opportunity, Bangladesh can develop a deep sea port for new generation larger vessels that requires higher draft facility.

Positive intention & good initiatives:
Getting such an extra ordinary gift of nature, Bangladesh is yet to construct any deep sea port anywhere in the country. Some national & international political constrain always came forward that hindered the way of execution. Fortunately, present government & the opposition both are inline with the understanding of the necessity of a deep sea port in Bangladesh.

Already adopted a number of positive initiatives towards its establishment considering it as one of the first track projects of the nation. The country is eagerly awaiting for the establishment of its ever dreamt project hoping “where there is a will, there is a way”.

WEAKNESS & THREATS OF NEW PORT DEVELOPMENT

Piracy created a bad image
The concern of maritime piracy in Bangladesh remains a serious threat to international commerce and safety in modern times. History reveals that there have been 74 piracy and armed robbery incidents recorded in the last 5 years in and around the waters off Bangladesh, and regretfully ten in the first half of 2014 according to the IMB PRC. Therefore, it is already notorious as one of the most piracy prone zone in the world the international community reports. Port Chittagong and Mongla have been labeled as ‘vulnerable and insecure’ that forced
foreign shipping companies to impose additional charges for discharging cargo resulting in higher costs for export and import. The below table reported by ICC-IMB, clearly establish how far our failure to tackle the issue has rendered our territorial waters/ports insecure for the international maritime and commercial activities. Roughly 45% of the world’s commercial shipping transit through this regional waters. The frequent attacks on commercial vessels passing through the SE Asian region can jeopardize international trade and lead to overwhelming economic loss. Apparently, such attacks in the region have caused an estimated $16 billion in economic loss over the past five years.

**International interest & politics**

Politicians, at various spectrums, often raised a question of concern that by awarding the lucrative contract of establishing a deep sea port, are we indeed, handing over our sovereignty to foreign powers. The direct involvement of some giant influential competitors like India, China, Japan, USA has really put the government of Bangladesh under pressure to reach to a safe & productive conclusion for the issue.

**Dependency on foreign investment**

Deep sea port establishment requires a huge investment (about $4.6 billion), being a developing country it really tough to execute it by using own fund. Proposals are obtained from several countries, but with some conditions expecting their own interest. The government of Bangladesh has to judge the proposals and grave the most suitable one.

**Scarcity of multimodal transport facility**

Lack of integrated transport network for hinterland linkage and door to door reach of consignment is the key concern to attain expected international standards of port facility. The situation in Bangladesh is worse towards the establishment of deep sea port like Sonadia, Matarbari, Payra. Use of inland waterways would be the substitute but not the alternative. Therefore, establishment of multimodal transport facility is the bottleneck in attaining expected level of efficiency to contend in the world competitive market.

**Distance from International Shipping Lanes**

Recent establishment of deep sea ports in Srilanka& India have raised the question on the mind of the critics about the customers demand towards the use of proposed deep sea port in Bangladesh. Considering the geographical location, it is unlikely that mother vessels on Asia-Europe transit route will call in new DSP unless their own necessity. However, with increasing expected demand due to the ongoing expansion of the world fleet will help Bangladeshi deep sea port. Definitely, regional demand due to the incredible economic growth and industrialization raises the plea of quicker establishment of DSP in Bangladesh.

**CONCLUSION AND RECOMMENDATIONS**

Ports are the heart of sea transport, a vibrant place where international shipping originates, terminates or transits. It is a highly dynamic venue which keeps pace with growing economic and commercial activities to the entire region. Since 80% people of the world live within 100 miles of coastlines, seaports emerges as a vital economic location for people of seaside countries. And the reason might be why seaports and cosmopolitan cities had developed along the coastal belts since the ancient period. According to 2013 World Investment Report, Bangladesh stands out as the sourcing hotspot in the shipping industry by offering the advantages of handling consignment in large volume at lower competitive costs. Due to rare geographical location, any deep sea port in Bangladesh will be turn around as a hub port of the major world container trade route and will be served for the containers in parallel with established ports like Colombo and Singapore.

Unfortunately, due to various constrain, the well-deserved deep sea port in Bangladesh is yet to see the expected headway. Whereas, in the meantime, the neighboring countries like India, Sri-Lanka & Myanmar are already well ahead and started to build ports in their own premises. If those projects found their competitive advantages, the prospect of DSP in Bangladesh, hoping to become a regional hub, will soon be eroded. International politics & conflict of interest of powerful influential nations should not make hostage country’s ever dreamt aspiration, atheist for the sake of international seaborne transport facility. The country should think deeply, design a road map, diplomatically handle the tidal force exerted by world’s influential nations and find out the best solution to turn around the long waited dream project of a deep sea port into reality.

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Drivers of Supply Chain Performance Analysis in Hospitality and Tourism Industry

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Abstract – The service sector is huge and emergent sector. The sector has been dramatically transformed as a vital substance of GDP, particularly in developing countries. Supply chain is not only resided at manufacturing company with its crucial part but also effects on the performance, customers’ satisfaction and cost efficiency in the service sector. Supply chain drivers ensure the performance of the supply chain management of an industry adheres to it. Hospitality and tourism is a potential field of service industries for Bangladesh. As globalization breaks the limit of countries' boundaries, the opportunity of this industry has increased in a great extent. Approximately 5% people of the total population of Bangladesh are earning their livelihood from the hotels, motels and resorts firms. The supply chain drivers of hospitality and tourism are little different from other industries and these drivers in tourism industries are not well defined yet. The responsiveness and efficiency of manufacturing industries have been developed through the growth and study of supply chain management and performance drivers but there are not enough empirical works on the supply chain drivers of tourism industry in the prospect of Bangladesh. This paper reviews the relevant kinds of literature intended to supply chain management and supply chain performance drivers for the particular industry and concentrated on the supply chain drivers based on secondary data to draw the apparent scenario of practicing the supply chain drivers of hotel tourism in the prospect of Bangladesh.

Keywords – Service industry, GDP, Hotel tourism industry, supply chain drivers.

I. INTRODUCTION

The world economy has been transformed from manufacturing industry to service industry for last few years. In Bangladesh, the service industry is being flourished in current ages. New technologies are positively changing the functions of the service industry. New concepts and theories are adopted by the industry to prolong the customer satisfaction. The total GDP growth of Bangladesh in the financial year 2017 was 7.28% in which 3.41% was contributed by the service sector. Service is an exploratory term. Service industry includes education, telecommunication, medical treatment, transportations, financing, consultancy and tourism. In a simple word, service is intangible, inseparable, variable which cannot be transported but instantly perishable and directly related to the customer's satisfaction. Supply chain management is also flourishing the service sector. The supply chain drivers of manufacturing industry have already been well defined. This paper is focusing on drawing the overview of functioning drivers of supply chain management of service sector which is basically considering the supply chain drivers of hotel motel and resort industry in tourism service sector.

II. LITERATURE REVIEW

Supply chain management is a contemporary vibrant concept which has a massive influence to change the service industry's functional pattern. Previously supply chain management was mostly related to the manufacturing industry. But now supply chain is also applied in the service sector too. The prime objective of the supply chain management is to meet the customer's demand with the most efficient flow of products within the certain time frame.

Many authors describe the definition of supply chain management in different views. Synchronized supply chain management operations are much worthy to enhance performance efficiency [1]. The prime objective of the supply chain management is to attain the performance quality in an efficient way. Supply chain management includes the process of sharing information and taking action to confirm the optimum flow of the product [2]. Supply chain management is a double side's flow of information which pass the information to business and the information optimize the way of the product flow to meet the customers' demand. The management of supply chain is an interconnected function which occurs at outside but generates value for the customer [3]. It is a flow of products; money and information which meet the customer's demand in an efficient way and this process keep the consistency of the customer's satisfaction. Supply chain performance lied on the capability to excel the business functions that satisfy the predetermined demand of the customers [4]. Supply chain ensures the
control process of all materials which is involved with the product but it doesn't matter how the product managed or handled [5].

Supply chain drivers are the tools which enhance the performance of the supply chain management which aim is to be responsive and efficient. The prime objective of supply chain management is to meet the customer's demand in an efficient way. And many often supply chain drivers are required to be developed to establish a successful supply chain management. Supply chain drivers are the vital tools which ensure the advanced performance of the supply chain management in an efficient way to achieve a positive response from customers. Supply chain drivers are also effective for the service industry. But in the service sector, supply chain drivers reside in a complex format.

The tourism industry is a small territory of the service industry. For the limitation of time and accessibility, this paper is considering only the drivers of supply chain management in the tourism industry focusing on hotel tourism. Like all other supply chains management in different industries, tourism industry also regulate the supply chain function through business to business relationships and that ensures the sustainable performance developments with a financial improvement of each supplier who is included in supply chain management [6].

Tourism is a human instinct of obtaining different knowledge about different places, economic evolution, culture, history-social value etc. of that country [7]. Tourism is a complex combination of different components which are densely interrelated to the social, economic, and political and environmental factors [8]. Human is a creative and curious creature that has a mass affinity to gather knowledge about history, social value, culture etc. Tourism is the process of attaining the knowledge physically considering different complex elements like social, political, environmental factors. But now tourism is a large term. Peoples visit from one place to another place for official purpose or business purpose or any other purpose, now these are also included in the tourism concept.

Today's world is being smaller for the sake of globalization. The world becomes borderless. Peoples rampage across the country for the excursion, medical treatment, official or business purpose and educational purpose. In the scenario of Bangladesh, the tourism industry would be a potential industry with lots of natural blessing. But there is a lack of attention to bloom in the industry. Performance measurement method is not relevantly adequate in the tourism industry. The scope of tourism is vast but the communicational infrastructure; less promotional activities are the prime abridgment of the industry. The potential hotel tourism industry is becoming arid. In most of the tourism, firms do not practice supply chain management in a right way. Even the hotels' motels and resorts' authority do not maintain any supply chain management department. So the performance of the firms is deteriorating and firms cannot attain the strategic goals in an efficient way. Supply chain drivers can be a catalyst to develop the performance which creates a positive response in an efficient way. There is a lack of empirical activities too in this potential industry. Empirical work is more requisite in the today time frame for the magnificence of the industry. For the limitation of time and accessibility, this paper is concentrated only secondary data. And the focusing area of this paper is supply chain driver in hotel tourism industry.

III. OVERVIEW OF THE TOURISM INDUSTRY IN BANGLADESH

The tourist attraction of Bangladesh includes sea beaches, forests, historical places etc. There are Mahasyardar, Paharpur, Kantaji temple which are archaeological sites located at the northern part of Bangladesh. In Chittagong division, there is Cox's Bazar which is the longest sea beach in the world. The largest mango forest known as Sundarban is located in the southwestern part of Bangladesh, mainly in Khulna. The historical mosque, sixty domed mosque is significant for architectural values. In northeastern part, tea garden is the main attraction of the tourists. These are the significant tourist attraction of Bangladesh. Sompura, Paharpur, mahastangar are the significant historical places of Bangladesh. Moreover, Bangladesh is worldwide renowned for her cultures which have been being cherished by the people of Bangla for more than hundred years. So tourism would be a supporting hand for the economy of Bangladesh.

Tourists are being attracted to the different tourists' places through the different medium. So there are lots of hotels; motels and resorts are established near the tourists' spots. So a large number of tourists enjoy their excursion over there. Even a Plethora of official arrangements and events are also placed at the tourists' places. So many local people are involved with the various type of activity like as tourist guide, travel agency, local transportation business, the business of tourist products; different service activities etc. which create an employment scope for the young people.

IV. DRIVERS OF SUPPLY CHAIN MANAGEMENT IN THE TOURISM SECTOR (HOTELS, MOTELS, AND RESORTS)

Tourism is a potential service sector with huge prosperity. Hotels, Motels, and Resorts are the relaxation, accommodation, and food concentrated part of the tourism sector. Hotels Motels and Resorts are established near the tourist places where a mass number of tourists comes from different places. There is a little difference between the functions of drivers of the supply chain in the manufacturing industry and service industry. Capital costs of hotel industry are comparatively higher but operating costs are lower [9]. In manufacturing, industry supply chain proceeds flow
of product to meet consumer's needs. But in the hotel industry products are not flowing to customers rather than consumers are turning to tourist places to enjoy accommodation and foods and have relaxations. So supply chain drivers are acting in a distinct way in the hotel tourism industry. Hotel-motel and resorts are a very sensitive industry which is predominantly related to the consumer’s satisfaction.

Figure 1: Drivers of Supply Chain management

To enhance the quality of supply chain performance, supply chain drivers are much valuable [10]. The drivers of supply chain ensure the efficiency or responsiveness of the performance. Responsiveness and efficiency cannot be obtained at the same time. So firms’ aim is to obtain the optimization of the cost considering the attainable responsiveness. In the service, sector responsiveness is more important than efficiency to existing in the market. Supply chain drivers drive the performance of supply chain management in a more effective and efficient way.

Efficiency is related with the cost minimization but it takes lead time to fulfill the consumers' demand. On the contrary, responsiveness is related to time to respond. High responsiveness pointed out the less time to response the consumer's demands. Low responsiveness means a long time to response customer's demands. In the tourism, sector tourists are not willing to consider even little much time to satisfy the demands. So the hotel, motel, and resort firms should always be ready to provide service to meet consumer's demands. Responsiveness is an integral factor. High responsiveness ensures high satisfaction of the consumers' demand. Drivers of supply chain management play a vital role to ensure the responsiveness of the tourism industry. Drivers of supply chain management can be segregated in to two parts regarding the operation of the drivers.

- Logistics
- Cross functioned

A. LOGISTICS

Logistics is an accumulated planning, control and implementation of the effective movement, different storage and other related facilities of goods, services from one dimension to another dimension. There are three drivers in the logistics segmentation.

1. Facilities
2. Inventories
3. Transportations

A.1 FACILITIES

Inventory storage, fabricate or production site are the major concentrated facilities in the manufacturing industry. But in the tourism industry especially for hotels motels resorts, facilities are not limited to the location of inventory storage. Hotel tourism is a part of the service industry. Locations of the hotels, Cultures of those places, national and international political circumstances are more important than the location of inventory storage.

Demand analysis would be considered as tools for determining the anticipated demand. After narrating the demand plan, supply plan also should be developed. Demand plan alone cannot obtain the goals. Even the accumulated goal of demand plan and demand plan is to fulfill the SAOP (sales and operation planning). These tools can be an effective process to minimize the cost and enhance the responsiveness of the demand.

A.2. INVENTORY

Inventory is an important supply chain driver for the manufacturing industry. Raw material, WIP inventory and finished inventory are usually more related to the manufacturing industry. In hotel tourism industry cooking material inventories are required for food service. Daily using accessories like soaps, bed covers, cleaning accessories are included in inventory. Even it is requisite to maintain an optimum safety inventory. But the more inventories are stored, the more expenses are incurred. So hotel firms have to maintain an optimum scale of inventories regarding the maintenance capability of responsiveness.

Hotels tourism firms are used to ensure three types of inventories. These are:

- Cycle inventor
- Safety Inventory
- Seasonal Inventory

Cycle inventories are the amount of inventory needed to satisfy the customer demand on the daily basis. It is mandatory to keep ruining the services. Safety inventories are required for the uncertainty and for the purpose of meeting consumers’ uncertain demand. So the firms are required to store the optimum level inventory for handling the uncertainty.

There are some seasonal demands, as an example, the demands of cold drinks are higher in summer but very low in winter, the food items are also varied from one season to another season. Moreover, in winter, warm clothes, warm beddings, blankets are required for living.
Besides, the geyser is also required in the washroom for generating the comfortable heated water for the guests.

But in summer demand has been changed. The demand for cold juice items, cold drinks, fruits is higher. In summer guests prefer to swim in the swimming pool than the geyser in the washroom.

A.3 TRANSPORTATION

![Figure 2: Transportation drivers in Hotels Motels & Resorts](image)

For the movements of the products, Transportation is an essential driver for the supply chain management. If a lead time of the particular product is long, the products cost will have raised. Faster transportations create responsiveness but it is less efficient.

Transportation is a logistics drive of supply chain management. Hotels, Motels or resorts are purchase essential inventory and resources from different vendors or supplier and accumulated in the storage of the firm. The inventory items come to the firm through different transportations. These transportations might own by supplier or firms. Moreover, the hotel generally outsources the transportations. It is known as upstream transportation.

Many renowned hotel, motel and resort firms provide transportation facilities to their customers. Few firms have their own vehicles. Most of the firms outsource required vehicles from “rent car service”. Firm’s representative receives the guest from the certain place in the favor of guest ensuring the transportation facility and drop the guest to the hotel. It is the downstream transportation of hotels, motels or resorts. Tour agencies or 3rd parties create the customers of hotels motels and resorts. Many often tourists ensure booking for the service through online web portal of that firms.

B. CROSS-FUNCTIONAL

Cross-functional drivers are functioned with different drivers and determine the performance of the supply chain management. Cross-functional drivers are interrelated with logistics drivers and individual cross-functional drivers too. Cross-functional drivers are:

1. information
2. Sourcing
3. Pricing
4. Quality

B.1 INFORMATION

Information is a very important driver for taking initiatives of supply chain management in the service industry. Information is a process of flow that links with the diversified member of the supply chain management through different steps.

![Figure 3: Information flow in hotel tourism](image)

These steps are data collecting, transmitting and processing data for the particular requirement and for supporting all another management process [11]. Information flows on both orders. Vendors or suppliers provide the information regarding the quality, price, quantity, market circumstances etc of the products or inventories at the same time firms ensure the quantity and quality of demanded inventories or products requirement of customers. Tourists directly inform the firms about their requirement. The most important factor of information is feedback which is given by tourist regarding the service. Firms also inform the tourists about their available services. Agents or third parties also provide the information about quantity demand or upcoming constraints etc. The information would be share in both offline and online medium.

B.2 SOURCING

Sourcing is the business process which determines the firms’ operation and the purchases portion of goods or services. It is the proportion of what firms fabricate and what firms purchase from other organization.

![Figure 4: Types of sourcing](image)

B.2.1 IN-HOUSE SOURCING
Firms have to decide which services will be provided or generated by firms. In hotels, motels or resorts, firms provide the accommodation and food service. Some firms provide transportation services for the emergency or for VIP guest. Moreover, some firms have own vehicle for the purpose of inventories movements.

**B.2.2 OUTSOURCING**

Most of the firms conventionally outsource the transportation which provides service from the vendor to the firms. Even firms also outsourcing the transportation which provides service to the tourists the consumers. In hotels, motels or resorts firms outsource many goods and services like tourists guide services, Inventory, transportations, judicial service etc.

**B.3 PRICING**

![Figure 5: Relationship between price and Brand value and rating of the hotel](image)

Generally hotels, motel, and resort are grown up intensely at the same places which have the historical values, natural beauties or in the city area near long routed bus station, train station; airport etc. pricing is depending on the quality of the services, seasonal demand, branding (3 stars, 4 stars, 5 stars)

It is deduced that the more stats hotels provide the better service with luxury facilities to the customers. The price of the luxury resorts or 5 stars hotels is higher for their service goodwill and branding. So it impacts on the pricing.

Price is also depending on seasonal demand. The supply of the hotels, motels or resorts is almost constant all over the years. So when demand rises it impacts on prices. Almost all over the year the accommodation capacity of hotels, motels, and resorts is constant. But the demand varies. In the winter season, long-term vacations, government holidays, religious festivals, the tourists are inclining to visit different tourist attracted places. So in that particular period, the demand is being high.

In the figure, when the demand resides at D1 the price is P1. The demand is getting high from D1 to D3 and the price is also moving from P1 to P3. But in the offseason, the demand decreases from D1 to D3 along with the price from P1 to P3.

**B.4 QUALITY**

![Figure 6: Price equilibrium](image)

Quality is considered as a new supply chain driver. Quality is considered as a standard of products which can be measurable and homogenous. In service sectors, quality is an emergent driver to enhance the customer sustainability. In hotels, tourism sector customers' responsiveness is most important to attain the firms' goodwill which creates the competitive advantages of the firms. The major competition in hotels tourism sector is service quality and price. Service quality is directly related with the goodwill of the firms. Guests are not preferred to compromise with the service quality. It is little challenging to the firms to ensure the standard service to the customers and fulfill customers demand.

So it is great to establish MOS (management operating system) in hotel tourism sector that sets a typical key performance indicator (KPI) as follows.

- Real time delivery
- Quality of services or goods received by customers
- Responding capability to the customers
- Cycle time for resolution of customers complaints
- Supply quality assessment

Quality can be controlled through MOS. Though it is difficult for the company to ensure the same quality service spontaneously, following the standard and working in systematic process can be supportive to the firms to ensure the quality of the service.

**V. CONCLUSION**

Competitive advantage would be achieved by firms through effective and efficient supply chain management [12]. It would be attainable for both the manufacturing industry and service industry both. Though hotel tourism is lagging behind comparing to the other's industry, it would be the most prosperous industry in Bangladesh by practicing effective supply chain management. And the appropriate implication of supply chain drivers create the
competitive advantage in the hotel tourism sector in Bangladesh
Bangladesh is a potential country in the tourism industry. There are many tourists attracted place which can be
flourished through taking necessary initiatives. The longest sea beach, mangrove forest, hills, historical places are available in Bangladesh with unexplainable natural beauties and historical interest. Hotels, motels and located in different tourist attracted places. Moreover, hotels, Motels, and resorts are located in the capital nearby airport, bus stand, and railway station. Most of the tourists are the national tourist if the foreign policy develops and publicity expands, the foreign tourists also will be more interested. Hotels, motels, and resorts will also be developed. Hotel tourism is a service sector where it is difficult to define the drivers of supply chain management. But the responsiveness and efficiency are very important for the service. Supply chain drivers usually combine all elements of supply chain management is an optimum and effective way. There are seven supply chain drivers which ensure the quality of the supply chain management. Supply chain drivers develop the supply chain performance and Supply chain performance the optimum level of efficiency and effectiveness. Moreover, Supply chain driver confirms the responsiveness which is more important for the service sector, especially for hotel tourism sectors.

VI. RECOMMENDATION

There is no supply chain department in the hotel tourism sector so the supply chain practice is not specific in hotel tourism industry. Developing supply chain management is essential to observe and practice the supply chain management and enhance the performance of the supply chain drivers which ensure the quality performance of supply chain management.
The application of the supply chain drivers is sophisticated in hotel tourism sector even there is less empirical work. There are lots of scopes of doing empirical works which add the new way of application of supply chain drivers in hotel tourism sector
Hotel tourism is service providing oriented sectors where human resources are playing the integral role to attain the goodwill of firms to ensure the best services to the consumers. So human resources should be considered an essential factor in the supply chain management.
The strategic goal is dependent on many factors. Only supply chain management cannot ensure the strategic goal rather than obtain responsiveness and attainable efficiency which assist to attain the strategic goals. So the not only development of supply chain management is enough but also need to ensure the overall infrastructure development of different arena of management and information system.

REFERENCES

Students’ Perception of Entrepreneurship Development and Business English as Core Courses in English Discipline: A Study on Selected Universities

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Abstract – Entrepreneurship has long been the catalyst for economic growth and change around the world though it is comparatively new field of study in Bangladesh. More recently, social entrepreneurship has become an area that has globally garnered attention. In the current economic environment where jobs are difficult to find, many students are opting for more entrepreneurial career options rather than choosing traditional employment paths. This is especially true for English students where the challenge of finding suitable employment other than teaching and civil service is often more difficult for many of them. Consequently, increasing numbers of students have expressed interest in entrepreneurship and social entrepreneurship. The objective of this research study was to investigate the level of interest towards entrepreneurship or social entrepreneurship among students of English discipline of selected public and private universities of Bangladesh. Approximately 182 undergraduate English students of selected universities were asked to participate in the study. The results of the study indicated that 14.7 percent of the respondents expressed interest in becoming business entrepreneurs; while 17.61 percent indicated they wanted to be social entrepreneurs. Moreover, 72.52 percent students appreciate the idea of including entrepreneurship development and Business English courses in the English curriculum. This is a qualitative study and a questionnaire has been prepared for this study. An implication of the study is that Bangladeshi curriculum specialists and ELT experts as well as the UGC authority will consider offering these new courses for English discipline.

Keywords – entrepreneurship development, English education, curriculum, entrepreneur, employment.

I. INTRODUCTION

It goes without saying that the youth of Bangladesh are a vital and vibrant segment of the country. The youth population of the country constitutes the largest portion of the total population and they are basic investments for the future and will shape the society of Bangladesh. Unemployment among the graduates has become a serious concern of the society. It is time to take their problem of not getting ‘dream job’ seriously. English graduates usually opted for civil service and teaching jobs in Bangladesh, but with passage of time and change of attitude, English graduates are opting for banking, marketing, HR, public relations, journalism and corporate jobs which is very obvious from alumni profiles of English Department Alumni, Dhaka University, 2008-2015. As now-a-days “markets determine curriculum”, the existing curriculum need to be reshaped taking into consideration the diverse interests of the learners [1]. These, in turn, need to be built into the curriculum. The future of any developing country depends on the ways on which the youth are moulded. About 30 percent of the population in Bangladesh is in the age group of 15-35years. The youth in Bangladesh represent an extraordinarily important group who can become an important human resource if they are guided in the right way. Entrepreneurship development can show them to think in a different way. Our young talents can be allured to take up career in this field. Those who like not to follow traditional career path can become successful entrepreneurs and create jobs for the unemployed people. This paper focuses upon something unusual which may unsettle the teachers and students of English. If entrepreneurship development and Business English courses are offered in English discipline, what will be the reaction of English department students’—this is what this paper focuses upon. Introducing business courses in a non-business discipline is a quite new idea in the context of Bangladesh, no doubt.

What is Entrepreneurship Development?

Entrepreneurs are defined as “innovative, action-oriented people who, by devoting time and effort, create something different with value added”. They risk their time, money, comfort and status in anticipation of bigger rewards of monetary, personal and social [2]. Drucker defines entrepreneurship as innovation – the effort to create purposeful, focused change in an enterprise’s economic or social potential [3].

Entrepreneurship Education in Bangladesh

Entrepreneurship Development education has seen worldwide growth in higher education institutions [4] and in 2001, nearly 1200 business schools in USA offered it as major [5].

It is still somewhat untrodden field of study in Bangladesh though a few private universities are offering this course in BBA and MBA programs. Daffodil International University (DIU) offers 4-year undergraduate program in Bachelor of Entrepreneurship Development (BED) which has been approved by
University Grants Commission (UGC). But no other universities offer entrepreneurship Development as independent discipline in Bangladesh. It is not offered as core or optional course in any non-business department in Bangladesh.

**Necessity of Entrepreneurship Education in Bangladesh**

The study of entrepreneurship development makes learners ardent to acquire some qualities or soft skills which are much sought-after in today’s competitive job market. These are hard work, desire for high achievement, high optimism, independence, foresight, organizing capability, and innovative mind [6]. Statistics shows that in our country 47% graduates are unemployed [7]. To reduce the unemployment rate and run the wheel of economy there is no alternative of entrepreneurship education in Bangladesh.

The general attitude of the public toward entrepreneurship is changing and people are accepting it as an academic course for study and research. Moreover, entrepreneurship has been seen as a key to economic development in many countries throughout the world for many years [8]. The relationship between entrepreneurship and economic growth, poverty and sustainable development is vital for future global development.

**II. LITERATURE REVIEW**

There is no doubt that entrepreneurship education is essential in today’s society for economic development. But entrepreneurship education has always been narrowly defined as education that provides the needed skills to setting up new businesses and it has been confined to business education only.

Hytti and O’Gorman [9] hold the view that there are many ways to offer entrepreneurship education, depending on the objectives of such education. If the objective of the education is to increase the understanding of what entrepreneurship is about, the most effective way to accomplish the objective is to provide information through public channels such as media, seminars, or lectures. These methods are effective in terms of sending the relevant information to a broader population in a relatively short time period. If the objective is to equip individuals with entrepreneurial skills, which are applicable directly to work, the best way is to provide education and training that enable individuals to involve directly in the entrepreneurial process, such as industrial training. Lastly, if the objective of the education is to prepare individuals to act as entrepreneurs, the most effective technique is to facilitate experiments by trying entrepreneurship out in a controlled environment, for instance through business simulation or role playing. Their study does not say anything about offering entrepreneurship in a non-business field.

Kirby [10] says that entrepreneurship education is different from ‘management studies’ as the traditional management education may not include the necessary entrepreneurial quality and skills. Entrepreneurship education refers to different teaching and learning strategy. In other word, entrepreneurship education is more than business management, it is about “learning and acquiring skills”, which mean learning to integrate experience, skills and knowledge, to get prepared to start with a new venture. Entrepreneurship education refers to the formalized program to equip students with the necessary skills and knowledge to recognizing business opportunities, knowing customer’s insights, understanding the market needs, creating an idea, developing the business plan, running the business, evaluating environmental, and institutional and political issues. In this study Kirby has actually defined entrepreneurship in true sense.

Urban [11] in his study puts forward his arguments to establish entrepreneurship as a distinct field of study. Based on empirical evidence, this study analyzes entrepreneurship in various shapes and forms, and results from several multinational surveys are interpreted in terms of syllabi and pedagogies utilized. Besides, in order to uphold the distinct nature of this emerging discipline, distinctions are raised between entrepreneurship and generic management and small business management.

Many recent studies show that entrepreneurship education plays a significant role in creating entrepreneurship spirit among graduates. A study conducted by Kolvereid and Moen [12] shows that students who have taken entrepreneurship major have shown greater interest to become entrepreneurs in future and these students have been found showing more entrepreneurial attitude than other students in facing the challenge to start up new businesses.

It has been found that if entrepreneurship education is in academic curriculum it can produce competent future entrepreneurs. According to Ibrahim and Soufani [13], school and education system play a vital role in detecting and shaping entrepreneurial qualities. Studies by Clarke [14] and Menzies and Paradi [15] show that entrepreneurship education is obligatory for enhancing future entrepreneurs’ innovation skills in a cut-throat competition.

Initiatives to encourage entrepreneurship behavior among individuals particularly among university students are being implemented at universities all over the world. A joint study by Breen and Bergin [16], the Victoria University of Technology and the Australian CPA found that 86% of their academicians agreed that there is a need for the country to develop an enterprise culture at tertiary level.
Hynes [17] in his research found that 93 percent of American professors think that entrepreneurship should be taught in an academic arena. Another survey of 15 “leading entrepreneurship educators” stated that their main objectives of entrepreneurship education is to teach students about the process involved in starting and running new business.

A study of Klofsten [18] shows that entrepreneurial education is being provided at universities in Sweden and many professorships have been created in this area to cater for the growing needs for entrepreneurship activities. But this study does not focus upon introducing entrepreneurial education in a non-business area.

Moses and Mosunmola [19] conducted a study which aimed to examine the relationship between entrepreneurship curriculum and pedagogical challenges in captivating students’ interest towards entrepreneurial education.

Local Literature Review

Chowdhury [20] in her study has explored the opportunities which encourage people to become entrepreneurs and the findings show that there are new scopes and existing opportunities for entrepreneur from the government and socio-cultural perspectives.

Azim and Akbar [21] carried out a study on evaluating the entrepreneurship development course offered at BBA and MBA programs at different public and private universities. They have provided well rounded view on entrepreneurship education from business context and it does not include the concept of offering it in other fields.

Research Gap

No study has been conducted in Bangladesh regarding introducing entrepreneurship at non-business fields particularly among English discipline students and that is why there is a research gap.

Justification of the Study

This study will open the door to a new idea of incorporating business courses in a non-business humanities discipline. Chapter 4 of Sustainable Development Goal puts much emphasis on education that will lead to innovation and critical thinking and that is why traditional literature-based course contents needs to be changed. By introducing entrepreneurship education in English curriculum we can get more talents in this promising field who needs a little grooming and care. Moreover, the number of applicants in recent civil service examination (more than 4.5 lac) according to Prothom Alo [22] is alarming news for academicians and policy makers in higher education. In such circumstances we can rethink our course design and think about entrepreneurship development and other relevant course for producing skilled human resources.

Objectives of the Study

The prime objective of this study is to show the learners’ attitude towards the idea of introducing entrepreneurship development and Business English, two unusual courses for English discipline, as mandatory course in English disciplines at Bangladeshi public and private universities. The secondary objective is to show how the mindset of English department students is changing and how the students are expressing their feelings towards the concept of a diversified course design.

II. METHODOLOGY

This is basically a qualitative study based on document analysis and questionnaire survey. The researcher used qualitative method because it is suitable for knowing feelings or attitude of respondents [23] English curriculum of selected private universities have been analyzed. For this purpose, a questionnaire has been developed based on curriculum theories and Koris and Nokelainen [24] provided model of educational experience. have been conducted at four universities. All the respondents have been chosen randomly. Sample size for this study is 182 (male 117, female 65).

Questionnaire surveys have been conducted in two private universities of Rajshahi (Varendra University and North Bengal International University) and two private universities of Dhaka (Uttara University and City University). Only undergraduate Students of English department studying in final semester were considered eligible for the study. 20 students were taken for pilot study to test and identify any unexpected problem. All their conversations have been recorded.

III. FINDINGS AND DISCUSSION

Based on the objectives the research questions were prepared. The survey results are discussed below according to the order of the questions in the questionnaires by 182 students of 4 universities.

Based on the objectives of the study the research questions have been prepared with the help of two sources mentioned in the methodology part. The survey results are discussed below according to the order of the questions in the questionnaire answered by 182 students. 9 questions were set in the questionnaire. The answers to the first question about the higher secondary educational background of the students suggest that majority the students (86.26%) are from Bangla medium and
comparatively lower (9.89%) students are from English medium. Here were only 7 students from Madrasa background who took part in this survey.

Table 1: Students’ educational background

<table>
<thead>
<tr>
<th>Family background</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper class</td>
<td>20</td>
<td>10.98</td>
</tr>
<tr>
<td>Upper-middle class</td>
<td>77</td>
<td>42.30</td>
</tr>
<tr>
<td>Middle class</td>
<td>52</td>
<td>28.57</td>
</tr>
<tr>
<td>Lower-middle class</td>
<td>33</td>
<td>18.13</td>
</tr>
<tr>
<td>Total</td>
<td>182</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Question 2: The answers to the second question about the financial background of the students suggest that a large portion of the students belong to middle class whereas the upper class and upper-middle class jointly constitute a significant portion (10.98 and 42.30). It is found that 33 students are from lower-middle class and it shows a balanced combination of different background of students studying in English discipline.

Table 2: Students’ Family background

<table>
<thead>
<tr>
<th>Reasons for choice</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great demand for English graduates in teaching</td>
<td>77</td>
<td>42.3</td>
</tr>
<tr>
<td>English is an international language</td>
<td>23</td>
<td>12.63</td>
</tr>
<tr>
<td>English is helpful for BCS jobs</td>
<td>28</td>
<td>15.38</td>
</tr>
<tr>
<td>I like English literature</td>
<td>21</td>
<td>11.53</td>
</tr>
<tr>
<td>English background helps to get job in corporate</td>
<td>27</td>
<td>14.83</td>
</tr>
</tbody>
</table>

Question 3: The responses show that still today students choose English at higher education for its greater scope in teaching profession. English is also very much helpful for getting lucrative jobs like BCS job and it is again proved very valid in this survey where 15.38% students said that they have chosen English as it helpful for becoming BCS cadre. This also shows that learners are not habituated to think out of the box and none has thought about doing something unusual (like entrepreneurship) by studying English. 14.83% students have showed interest in corporate field or law practice and these students have informed the researcher that they have plan to pursue MBA or Law after graduation.

Table 3: Students’ Choice of study and reasons

<table>
<thead>
<tr>
<th>Question</th>
<th>Reasons for choice</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
</table>
| Question 4: It was about students’ thoughts about career planning. Attitudes are often shaped by social context and it cannot be denied. Brown (2000) says that “social context develop early in childhood and are the result of parents and peers’ attitudes”. So the learners have formed a traditional career planning as hinted by others they rely upon. Students have showed interest in teaching and govt jobs (28.57% and 31.31% respectively) and these two sectors are very common for English graduates and they have also showed interest in banking, media, corporate jobs and it shows that English students interest, to some extent, in jobs other than teaching and civil service. Out of 182 students only 30 students (16.2%) have the guts to choose entrepreneurship as career. The researcher doubts how many of them actually want to be entrepreneurs in future. If a small portion shows interest in entrepreneurship, then, isn’t it logical to offer a few courses on entrepreneurship in course curriculum? Along with it, curriculum developers can think about introducing Business English as core component also which is highly appropriate for graduates of 21st century.

Table 4: Students attitude towards career planning

<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
</table>
| Question 5: The answers to the fifth question show that students want a change in course design and it was obvious from their attitude while interviewing that they do not like a literature-dominated course pattern. Majority of the students (58.79%) opined for a change which is a big finding and it makes the researcher hopeful that students might show interest in a new field if included in English syllabus.

Table 5: Students’ attitude towards English course design

| Question 6: This question is the crux of this study. Students were asked about their reaction if Entrepreneurship Development and Business English were offered as core courses. 72.52% respondents agreed | |

| Question 7: It was about students’ thoughts about career planning. Attitudes are often shaped by social context and it cannot be denied. Brown (2000) says that “social context develop early in childhood and are the result of parents and peers’ attitudes”. So the learners have formed a traditional career planning as hinted by others they rely upon. Students have showed interest in teaching and govt jobs (28.57% and 31.31% respectively) and these two sectors are very common for English graduates and they have also showed interest in banking, media, corporate jobs and it shows that English students interest, to some extent, in jobs other than teaching and civil service. Out of 182 students only 30 students (16.2%) have the guts to choose entrepreneurship as career. The researcher doubts how many of them actually want to be entrepreneurs in future. If a small portion shows interest in entrepreneurship, then, isn’t it logical to offer a few courses on entrepreneurship in course curriculum? Along with it, curriculum developers can think about introducing Business English as core component also which is highly appropriate for graduates of 21st century. | | | |

| Question 8: It was about students’ thoughts about career planning. Attitudes are often shaped by social context and it cannot be denied. Brown (2000) says that “social context develop early in childhood and are the result of parents and peers’ attitudes”. So the learners have formed a traditional career planning as hinted by others they rely upon. Students have showed interest in teaching and govt jobs (28.57% and 31.31% respectively) and these two sectors are very common for English graduates and they have also showed interest in banking, media, corporate jobs and it shows that English students interest, to some extent, in jobs other than teaching and civil service. Out of 182 students only 30 students (16.2%) have the guts to choose entrepreneurship as career. The researcher doubts how many of them actually want to be entrepreneurs in future. If a small portion shows interest in entrepreneurship, then, isn’t it logical to offer a few courses on entrepreneurship in course curriculum? Along with it, curriculum developers can think about introducing Business English as core component also which is highly appropriate for graduates of 21st century. | | | |

| Question 9: It was about students’ thoughts about career planning. Attitudes are often shaped by social context and it cannot be denied. Brown (2000) says that “social context develop early in childhood and are the result of parents and peers’ attitudes”. So the learners have formed a traditional career planning as hinted by others they rely upon. Students have showed interest in teaching and govt jobs (28.57% and 31.31% respectively) and these two sectors are very common for English graduates and they have also showed interest in banking, media, corporate jobs and it shows that English students interest, to some extent, in jobs other than teaching and civil service. Out of 182 students only 30 students (16.2%) have the guts to choose entrepreneurship as career. The researcher doubts how many of them actually want to be entrepreneurs in future. If a small portion shows interest in entrepreneurship, then, isn’t it logical to offer a few courses on entrepreneurship in course curriculum? Along with it, curriculum developers can think about introducing Business English as core component also which is highly appropriate for graduates of 21st century. | | | |
to this idea which shows that majority of the students welcome change in their course design.

Table 6: Students' view regarding including entrepreneurship development & Business English in Curriculum.

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>For producing future entrepreneurs if entrepreneurship development and Business English are included in English syllabus what will be your reaction?</td>
<td>I agree to this idea</td>
<td>132</td>
<td>72.52</td>
</tr>
<tr>
<td></td>
<td>I do not agree to this idea</td>
<td>41</td>
<td>22.52</td>
</tr>
<tr>
<td></td>
<td>No Comment</td>
<td>9</td>
<td>4.94</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>182</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Question 7: The answers to the seventh question about the dual major or open electives offering suggest that none of the universities offered dual major. Students informed the researcher that they are offered electives in limited areas like philosophy, Bangla literature, history, and Anthropology etc. They do not have scope to choose from a wide range of subjects which are in high demand in job sector.

Table 7: Dual major/ Open electives

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your department</td>
<td>Yes</td>
<td>Dual Major- 0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Question 8: This is another very significant finding of this study which shows that a large portion (78.02%) of respondents agree to the fact that unconventional courses like entrepreneurship development and Business English if offered in English discipline as core courses will increase career potentiality. It is a message from young generation that they are in favor of a change in age-old literature-oriented English discipline. Diversified curriculum is nothing new in developed countries. Educational philosophers Dewy and Rousseau opine that combination of courses from other disciplines in a make learning more effective. Moreover, learner-centered course designers always take into consideration what learners prefer and they adjust it to the demand of society.

Table 8: Entrepreneurship Dev. in skill enhancement

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studying some unconventional courses like entrepreneurship dev. and Business English as core courses will increase my career potentiality.</td>
<td>Yes- 142</td>
<td>78.02</td>
</tr>
<tr>
<td></td>
<td>No- 36</td>
<td>19.78</td>
</tr>
<tr>
<td></td>
<td>No Comment- 4</td>
<td>2.19</td>
</tr>
<tr>
<td>Total</td>
<td>182</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Question 9: It was asked to see how the respondents react to the idea of introducing similar other job-oriented courses as open electives. It was found that they have shown intense liking for the highly demanded courses like HRM, soft skills, IT, public relations, analytical ability etc. Actually entrepreneurship development requires many latent qualities like managerial skill, communication skill, organizing skill, interpersonal skills, strategic skills, marketing skills etc. So, a wide range of open electives will enhance learners’ skill and demand in job. A number of students have said that they want to have jobs in IT, HRM or journalism field after graduation.

Table 9: Students’ attitude towards similar courses

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your department</td>
<td>Yes</td>
<td>Dual Major- 0</td>
</tr>
</tbody>
</table>

Figure 1: Students’ view about Entrepreneurship Development as core component
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any other course you want to suggest that can be offered as open elective? (You can select more than one)</td>
<td>Media Studies</td>
<td>141</td>
</tr>
<tr>
<td></td>
<td>Introduction to Marketing</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Public Relations</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>HRM</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>IT</td>
<td>172</td>
</tr>
<tr>
<td></td>
<td>Journalism Basics</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Leadership</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>Public Speaking</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Soft Skills</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Translation Studies</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Values and Morality</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>Analytical Ability</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>Critical thinking</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td>Creative Writing</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Problem Solving Skill</td>
<td>165</td>
</tr>
</tbody>
</table>

II. SCOPE AND LIMITATION OF THE STUDY

This study is limited to the students of private universities of Rajshahi and Dhaka only. It could have incorporated students from other divisions also. But due to time constraint that was not possible for the researcher. This may not represent the student population, yet this study is capable enough to have a preliminary concept of learner perception of incorporating business components in a non-business discipline.

III. CONCLUSION AND MANAGERIAL IMPLICATIONS

English curriculum needs to undergo a serious revamp. A fully literature-based curriculum needs to incorporate learners’ demand. Traditionally, universities have not prepared students for self-employment as a career option, which resulting in the loss of many potential entrepreneurs. As a result of this educational bias to large businesses and lack of information on self-employment as a career option, many universities around the globe are now offering courses related to entrepreneurship and small business. Educationists need to take this issue quite seriously. Following implications can be made with the light of the findings discussed in the study:

1) Students feel the need for a change in course design and some of them are not preferring typical career options, rather they prefer to join diverse work fields along with traditional career paths. In this age of globalization and information technology studying literature only can never be a judicious option.

2) Entrepreneurship Development is a crying need for the generation. The more diverse a curriculum is, the more the possibility is there for graduates to flourish in diverse work field. Curriculum specialists, ELT managers and ministry can take this issue into consideration and implement in future curriculum design.

3) English departments can think about introducing dual majors which will make graduates more sought-after in job market. Entrepreneurship development can be offered as dual major in English discipline.

4) English departments can invite resource persons for conducting classes on diverse subjects and strong collaboration with Business Administration faculty will be more fruitful in this regard.

IV. FUTURE RESEARCH SCOPE

Last but not the least, there is scope for further research in this area. Researchers can carry out investigation into what vital areas of entrepreneurship development can be addressed in the course design for English discipline; case studies can be conducted with entrepreneurs from English discipline and their challenges etc. To tell frankly, entrepreneurship has vast scope and it is the researchers who can bring this highly challenging

ACKNOWLEDGEMENT

The researcher would like to express his heartfelt gratitude to the faculty members of various universities who have helped to complete this paper by devoting their effort and necessary document and, above all, time to conduct the survey at their respective universities.

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Toyota’s Supply Chain Management: Supply Chain Optimization and Theoretical Applications in Practices

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Paper ID: ICBM-19-0315

Abstract – Toyota is one the leading automaker in the world, and the company is improving its excellence through the optimization of its supply chain management. This paper highlights Toyota’s supply chain practices focusing on its inbound, production, and outbound logistics. This study also considers the regional variations of Toyota’s supply chain management initiatives. Furthermore, it also scrutinizes the link between supply chain management theories and the practices. Finally, it recommends few practices and activities that will help the company to enhance its supply chain management practices.

Keywords – Toyota, Supply Chain Optimization, Inbound logistics, outbound logistics

I. INTRODUCTION

“Everybody says, Toyota is the best company in the world, but the customer doesn’t care about the world. They care if we are the best in the town, or not. That’s what I want to be.”- Akio Toyoda

The global vision of Toyota’s CEO reflects why Toyota is the top car brand in the world. Forbes evaluated more than 200 global brands by looking at 3 years of earnings and brands power in each industry, where Toyota ranked eighth in overall brand value, and first within the automotive brand (Table-1)

Table 1. Brand rankings of top 10 global companies [9]

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company Name</th>
<th>Brand Value ($ Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Apple</td>
<td>170</td>
</tr>
<tr>
<td>2</td>
<td>Google</td>
<td>101.8</td>
</tr>
<tr>
<td>3</td>
<td>Microsoft</td>
<td>87</td>
</tr>
<tr>
<td>4</td>
<td>Facebook</td>
<td>73.5</td>
</tr>
<tr>
<td>5</td>
<td>Coca-Cola</td>
<td>56.4</td>
</tr>
<tr>
<td>6</td>
<td>Amazon</td>
<td>51.1</td>
</tr>
<tr>
<td>7</td>
<td>Disney</td>
<td>43.9</td>
</tr>
<tr>
<td>8</td>
<td>Toyota</td>
<td>41.1</td>
</tr>
<tr>
<td>9</td>
<td>McDonald’s</td>
<td>40.3</td>
</tr>
<tr>
<td>10</td>
<td>Samsung</td>
<td>38.2</td>
</tr>
</tbody>
</table>

Thus, the first question comes to our mind, ‘what makes Toyota so special?’ The obvious answer is Toyota’s production and management philosophy- Lean Manufacturing, JIT Practices, and values, which are collectively known as ‘The Toyota’s Way’. However, if we want to analyse Toyota’s overall performance, the best possible way would be analyzing its Strength, Weakness, Opportunity and Threat (SWOT) paradigm. Figure-1 shows four dimensions of Toyota’s present global performance.

Figure-1 shows four dimensions of Toyota’s present global performance.

Figure 1. Toyota’s SWOT Analysis – modified [12]

Keeping Toyota’s present global performance under consideration, this paper will make an endeavour to pursue six specific questions:

a. What elements constitute its global logistics practices?

b. What is Toyota’s inbound and outbound logistics all about?

c. What elements constitute Toyota’s production-logistics, and how it works?

d. What are the modes of transportation that support Toyota’s global logistics?

e. What are the challenges in managing global logistics?

f. What are the recommendations for Toyota to overcome those barriers?
In answering these questions, this paper will briefly analyse Toyota’s practices, supported by theories and specific examples.

II. TOYOTA’S GLOBAL LOGISTICS: PROCESSES AND PRACTICES

Global companies have identified the true value of global logistics, and therefore, integrates global logistics objectives in management philosophies and practices. Toyota is not an exception in this regard. However, global megatrends such as growing and increasing fragmentation of sales channels cost pressure, and frequent changes in technology are posing the equal challenge for global logistics [25]. An extensive global logistics research finding shows (Figure-2) top automotive trends within the period of 2012 to 2017. The figure ranks present and potential future trends.

Figure 2. Trends in global logistics [25]

To address these mega-trends, however, Toyota’s global logistics philosophy is based on ‘4VL’ [20]:

a. Variety- Based on balance market demands, customers’ expectations, and future trends in technology.

b. Velocity – Hold few variations of stocks at regions level, supported by optimized capacity planning.

c. Variability- Decreased by synchronizing sales and operations planning by focusing few variants in regions, thus ensure low-levels of inventory stock.

d. Visibility- Ensures complete visibility on the global supply chain, operations and distribution at the regional level using right metrics.

A. Toyota’s Inbound Logistics

Inbound logistics involves the process of procuring, warehousing, and distributing parts and materials for production [5]. Toyota's inbound logistics comprises of two separate operational activities: transport automobile parts from local suppliers to local plants, and transport parts from Japan to other plants [19]. For example, parts supply by North American suppliers to North American plants is considered part of local inbound logistics. Toyota depends on limited numbers of third party logistics (3PL) providers for its inbound parts supplies. Toyota organizes many suppliers as ‘cluster’ depending on geographical locations [8]. Figure-3 shows the clustering and cross-docking structure of Toyota’s inbound logistics.

Figure 3. Toyota's suppliers clustering [8]

Toyota undertakes highly efficient routing planning (monthly basis). This planning process considers optimizing cubic spaces of each truck, cross docking with milk run practice, contingency planning for parts supply. Furthermore, to keep all stakeholders updated on parts pipeline (parts are ordered, but yet to receive by the plants) status, Toyota use Kanban Barcode label, Electronic Data Interchange (EDI). In achieving efficiency and effectiveness in global inbound logistics, Toyota also maintains modular packing system [23]. Figure-4 shows how accumulated parts are managed for load optimization by modular packaging.

Figure 4. Toyota’s modular practice [7]

B. Toyota’s Outbound Logistics

Outbound logistics is the movements of goods associated with storing, distributing to its customers (Business Dictionary, 2018). Toyota’s outbound logistics is very robust, and distribution models are different for various regions. For example, North American distribution model is of three types. Few important outbound logistics models are as follows (VDocument, 2018):
(1) North American Production Model. Vehicles are built at North American plants, and then distributed to North American dealers. Quality assurance and price decision are made in the plants. Once delivered from the plant, vehicles are sent to marshalling yard. The task of marshalling yard is to make vehicles ready for shipment to dealerships. Vehicles are typically allocated to dealers 2-4 weeks prior to production [23].

(2) Overseas Production Distributed in North America. Vehicles are produced in Japan and other places, and ship via large vessels to ports in North America, and then transported to dealerships by road or rail. Ports provide similar functionality as marshalling points do. It takes 3-5 weeks from Japan to ship the vehicle to North American ports. It takes another 2-7 days to transport to dealers via road [23].

(3) European distribution Model. This model is different from other models, as most of the dealership are in urban areas. Dealers have no facilities for vehicle stock. Once vehicles are shipped from plants, dealers move to consolidation point (hub). Then, vehicles are sent to the hub. Generally, there is at least one hub for each major European country. Small countries are allocated to the shared hub. These hubs stock vehicles until the dealer sign contracts of sales to customers. On average, shipment time from hub to dealers is 4-7 days [23].

(4) Japanese Distribution Model. It is almost similar to the European model. However, instead of having the company-owned hub, each dealer maintain a hub. Dealer holds the vehicle until one of assigned retail outlet sells a vehicle. After vehicle sell, the order is placed, and the vehicle is sent to the retail outlet. However, within this model, there are different channels. Each channel may contain 12-25 different models of vehicles; for example, the channel may be based on pure brand executives or sizes of the cars [23].

C. TOYOTA’S PRODUCTION LOGISTICS

TPS is probably the most used jargon in the automobile industry. Sujimori portray TPS comprises two basic elements: Just in Time (JIT), and trust in human competencies and values. However, TPS has undergone extensive improvement throughout Toyota’s long journey (Spear, 2004). According to [2], the success of TPS can also be attributed to the integrated application of Total Quality Management (TQM). Figure-5 shows conceptual framework for TPS.

III. THE MODES OF TOYOTA’S TRANSPORTATION SYSTEM

Transportation plays a significant role for Toyota’s logistics system in ensuring smooth movement of raw materials and finished products [4]. Transportation chain of Toyota can be divided into three segments: pre-haul (milk run for pickup process), long haul (long distance shipment through the ship, rails, road, and air) and post-haul. However, most cases long-haul is integrated to pre-and post-haul, which is usually intermodal practice [10]. Toyota’s inbound transportation starts with parts collections from suppliers; pick up from suppliers by trucks on a milk run, which also use cross docking for well-coordinated delivery to plants. In this practice, vehicle routing plays a significant role in Toyota’s logistics optimization. In global supplies, the practice is mostly intermodal. For instance, trucks carry parts to ports and ship parts to destination ports, and finally delivers using trucks or rail [23].

In practice, Toyota’s production process sequences are model development through innovation and teamwork, planning and examining design concepts, prototyping and evaluation, product engineering, and production [21]. Production logistics is connected to the supply of different components accumulated from local/global suppliers to build cars. The production plant is divided as per activities and terms as ‘shops’. The vehicle is constructed in ‘body shop’ where the body and frame are formed. Then, parts of the body are stamped in ‘stamping shop’ by presses. Body shops have various types of robots that weld the body parts together. After assembling the body, it moves to ‘paint shop’, and painting takes place. Then it moves to the final module, where numerous suppliers’ parts are installed to complete the finish vehicles. At this point, final inspections are carried out before the vehicles move to yards [14].
Toyota’s outbound logistics comprises of different distribution models; like Local distribution, North-American distribution, and European distribution. In local distribution model, vehicles are transported by car carriers within 300 km of plants. However, for long distance, car carriers take the car up to ports, and then transports by assigned ships, and finally, car carriers take cars to dealerships. For North American distribution model, local shipment process is the same as Japan, but for long-distance shipment, multimodal options are used. Figure-6 shows two multimodal options that used from plan to dealers. From plant to yards, shipping methods are same as long and short distance distribution. However, in Yards, car carriers by trucks, or train-based on long-haul options (DocSlide, 2016).

![Figure 6. Plant to Dealer outbound transport (DocSlide, 2016)](image)

In European distribution model, vehicles are shipped by car carriers for short distance, and for long distance, vehicles are carried by rail, or ship up to the yards. Figure- 7 shows the most common European distribution model from plant to dealers.

![Figure 7. Plant to the dealer (European model)(DocSlide, 2016)](image)

However, the most significant challenges for Toyota’s outbound transportation is- there are no dedicated 3PL service providers. Furthermore, Lexus allocation model is different than other distribution models, as vehicles are assigned to dealers depending on a quarterly sales plan. Toyota’s rival, Ford use UPS logistics group, General Motors (GM) outsources its inbound and outbound logistics, but remain responsible for accessories shipment. However, globally, Toyota is more efficient in managing logistics than its competitors.

IV. Toyota’s Global Logistics Challenges

A. Challenge in Managing Centralization and Decentralization of Global SC Process. Many logistics functions are segmented between plant’s manufacturing and production control departments. Many internal logistics issues fall within manufacturing; like, plant docking operations and handling of empty containers. Furthermore, Toyota’s tighter control of global logistics issues hinder information sharing among stakeholders. In North America, plant’s departments are decentralized but liable to report logistics issues to Toyota Headquarter, Japan. Thus, the supply of components to global markets and supply chain decision making seems complicated [15].

B. Challenge in Managing Technological- expert Supplier Collaboration. Though Toyota is the leader in the Hybrid vehicle system, it is still lagging behind in the autonomous vehicle system in comparison to GM, Ford, Volkswagen and Tesla. This has become one of the significant technological partnership challenges, as Google, Cisco, Intel, and other advanced stakeholders have good collaboration with US and Europe based carmakers.

C. Challenges in Port Centric Logistics. Toyota Global logistics highly depends on port-centric logistics; therefore, need to ensure robust facilities and investment in existing and future port expansion. Furthermore, the emergence of the new market in Russia, Mexico, Brazil, and New Zealand will need more port-centric infrastructure, as ports are working as “Hub and Spoke” for Toyota’s outbound logistics model.

D. Total Supply Chain Visibility and Changing Pattern of Logistics. Toyota import and exports parts from various regions. Therefore, ensuring visibility of the total supply chain is one of the significant challenges for Toyota. For instance, in the North American production line, many critical parts come from Japan (on average 160 containers every day). By contrast, Toyota export parts to Russia, Brazil, Europe, and Australia. Most exported parts need to be consolidated and cross-docked. Furthermore, the inauguration of the new model needs reconfiguration of supply chain network and development of new suppliers. Thus, Toyota needs a complete visibility of all these activities.

E. Challenge in Transportation Logistics Partnership and Routing. Toyota uses a multimodal transportation option for its Supply chain efficiency and effectiveness. Though limited 3PL providers manage its inbound logistics; however, outbound logistics is based on generic multimodal transportation option. Moreover, in a global market, fluctuation of parts demand is the very common phenomenon. For instance, North American Toyota production need to adjust transportation route at
least 10 times a year. Thus, these issues pose the significant challenge for Toyota.

F. Geographical Vulnerability and Environmental Challenges on Logistics. Japan’s devastating earthquake and tsunami in 2011 impeded a significant amount of the world’s automotive SCM out of action. Toyota’s vehicle output was down by 63%. Thus, the geographical location of Toyota Corporation always poses the significant challenge for its supply chain practices (Columbia Business School). Furthermore, environmental challenges becoming the core issue for Toyota’s global logistics. Table 2 explains Toyota’s environmental challenges and targets.

Table 2. Toyota’s environment Challenges (Toyota Global, 2018)

<table>
<thead>
<tr>
<th>Environmental Challenge of Achieving Zero-2050</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge-1 New Vehicle Zero CO2 Emissions Challenge</td>
<td>Reduce global average new vehicle CO2 emissions by 90% from Toyota’s 2010 global level.</td>
</tr>
<tr>
<td>Challenge-2 Life Cycle Zero CO2 Emissions Challenge</td>
<td>Completely eliminate CO2 emissions from the entire vehicle life cycle.</td>
</tr>
<tr>
<td>Challenge-3 Plant Zero CO2 Emissions Challenge</td>
<td>Achieve zero CO2 emissions at all plants by 2050.</td>
</tr>
<tr>
<td>Challenge-4 Challenge of Minimizing and Optimizing Water Usage</td>
<td>Enact effective wastewater management and minimize water consumption based on local situations.</td>
</tr>
<tr>
<td>Challenge-5 Challenge of Establishing a Recycling-based Society and Systems</td>
<td>Promote global roll-out of End-of-life vehicle treatment and recycling technologies developed in Japan.</td>
</tr>
<tr>
<td>Challenge-6 Challenge of Establishing a Future Society in Harmony with Nature</td>
<td>Promote global roll-out of nature conservation activities beyond the Toyota Group and its business partners.</td>
</tr>
</tbody>
</table>

G. Challenges in Integrating TPS and Information Technology (IT) for Production Supply Chain Optimization. Toyota needs to adjust its TPS philosophy with the evaluation of IT. It needs to increase the speed of order fulfillment with the concept of ‘butterfly-like agility’. Furthermore, logistics partners need to be integrated within the Toyota IT framework.

H. Recommendation for Toyota in Global Logistics Optimization

Toyota needs to focus on scenario-based decision-making to formulate its future strategies, particularly on the following aspects:

a. Automotive Technology
b. Societal domain
c. Environmental domain
d. Economics domain
e. Legal Issues

However, specific recommendations are described as follows:

A. Balance between Centralize and Decentralize Logistics. Toyota needs to balance its centralized and decentralized activities by assigning more decentralized control but within a shared platform. Furthermore, its regional operation and logistics entities need to be self-sufficient and independent to undertake numerous critical activities.

B. Enhance Global Supply Chain Information Management System. Toyota needs to improve its technology-oriented SCM information management system (IMS). Thus, it should train and support its suppliers to become more technologically efficient. For instance, it can introduce standardize IT-based training for multi-tier of suppliers. Furthermore, it can introduce block-chain, Big data and IoT-enable technology to bring all its important physical inventories, materials, and supply chain stakeholders within the cloud-based platform or internal integrated IMS [11].

C. Integrated and Robust Supply Chain Contingency and Risk Management Planning. To mitigate the geographical vulnerability, complicated global logistics risks, Toyota needs to enhance its contingency and risk management plan. For instance, scenario-based DM in the face of uncertainty; like geographical vulnerability probability and impact matrix, quantifying market shift modelling can be very effective. Toyota may form a robust and dedicated risk management department for dealing with risk issues [11].

D. Enhance Port–Centric Logistics Activities and Improve Infrastructure. Toyota extensively uses ports for its inbound and outbound logistics. To ensure the expansion of its global network, Toyota needs more infrastructure and technical facilities in the ports within its SC network. Thus, Toyota needs more investments in ports infrastructure. For instance, local and global partnership, based on cost-benefit analysis can help to prioritize its efforts in port-centric logistics investment decision making.

E. Enhance environmentally sustainable Supply Chain Practices. To achieve its goal towards “Zero-2050”, Toyota need more enhanced effort by integrating its stakeholders. As the focal company, Toyota cannot be able to achieve these goals in isolation. Thus, it can introduce environmental practices for all stakeholders; particularly, reverse logistics and eco-innovation cleaner production initiatives. Furthermore, apart from infrastructure development, it also needs to boost advance research facilities in environmental issues [22].

F. ENHANCEMENT OF TECHNOLOGY AND NEW TPS PRACTICES.

For optimizing SC practices, Toyota needs an enhanced JIT philosophy based on TPS, TMS (Total Marketing System), and TDM (Total development System). These systems need to be supplemented by supply chain digital engineering and robust software system. Furthermore, it needs to enhance SC modelling practice for domestic and
overseas suppliers integrated within a central database platform. Furthermore, to cope up with Daimler, BMW (Real Time Mapping supported by Nokia), Fiat (self-driving car), and Tesla (autonomous car supported by IBM, Google), Toyota need more research initiatives.

V CONCLUSION

In sum, Toyota’s global logistics practices are deliberately planned and well-coordinated. However, being a global leader in the automotive industry, it should also have to overcome existing and upcoming challenges in comparison to its rivals to remain forefront automaker in the industry. For future studies, research may be directed towards Artificial Intelligence in TIPS. Impact of 4PL on Toyota’s logistics, and feasibility of Toyotas Environmental goal within Total SCM. Toyota’s effort towards supply chain management optimization is one of the best examples for other to follow and flourish their supply chain management activities.

REFERENCES


Inventory Management Practices and Techniques of Quoted Agro-allied Companies in Southwestern Nigeria

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Abstract – Inventory Management is pivotal in running an effective and efficient organization, and a well-designed inventory management can be employed to promote industrial development. This study assessed the practices of inventory management of agro-allied companies in Southwestern, Nigeria. Data were sourced through administration of structured questionnaires on one hundred and fifty-nine officers across four publicly quoted agro-allied companies. Data sourced were analysed using frequency, percentage, mean and standard deviation, and OLS regression technique. The results showed that ABC inventory system, Bin card, Economic Order Quantity (EOQ), Just-In-Time (JIT), and Material Resource Planning (MRP) were the inventory management techniques used by the agro-allied companies. However, MRP, EOQ and Bin card were the most commonly adopted techniques. Also, demand forecast, inventory accuracy, inventory shrinkage, lead time, and ordering cost were the major factors influencing inventory management in the agro-allied firms. Furthermore, the results showed that low physical assessment of raw materials at the point of delivery, lack of information from the part of production planning and inventory control officer, space constraints, environmental factors, and non-availability of raw materials were the key constraints to implementation of effective inventory management practices. The study concluded that agro-allied companies in Southwestern Nigeria employ robust inventory management techniques to handle their inventories.

Keywords – Inventory Management, Production Planning, Agro-allied Industry, Nigeria.

1. INTRODUCTION

There are many production companies in the agro-allied industry in Nigeria and they all source their raw materials from different market. Agro-industries was considered as a component of the manufacturing sector where value is added to agricultural raw materials through processing and handling operations, are known to be efficient engines of growth and development. Therefore, the need for the effective and efficient management of inventory in form of raw materials, work-in-progress and finished goods which constitute significant proportion of assets of most organizations becomes paramount. The most important objective of inventory management, therefore, is to have adequate quantities of high quality inventory available to serve customer needs, while also minimizing the costs of carrying inventory (Brigham & Ehrhard, 2005). Inventory management nowadays is becoming an important part of the operational areas of business venture given that a good inventory management can bring to a company an increase in operational and cost efficiency (Githendu et al., 2008).

Many companies have failed because their inventories tied up too much capital (funds), or the items in inventory became obsolete, impaired or lost. It is therefore necessary to have an appropriate set of policies concerning the items to carry in inventory, the level of inventory control and management of stocks. It is pragmatically evident, that the profitability of any business organization depends largely on the ability of management (of the concerned industry) to exercise effective purchasing and efficient materials control (Monday, 2012). Organizations have difficulty in maintaining the right quantity of inventory for optimal productivity, growth and profitability due to poor vision, inadequate market forecast and effective planning. With the aforementioned difficulties, many agro-allied firms are faced also with challenges of massive inventory which consumes physical space, creates financial burden, and increases possibility of damage, spoilage and loss. The company’s stores are overcrowded making the work of a store-keeper difficult, late issue of materials to departments and these in turn result into poor inventory service delivery. In addition most studies did not address inventory management techniques that enhance service levels ensuring stocks are distributed on time and at the right place meeting customer’s demands. Some of the problems facing agricultural companies today are the inability to provide quality services to the customers as a consequence of poor inventory management (Manjrekar, Bhonsale& Kamath, 2008).

Studies in Nigeria have reported the usefulness of inventory management in optimizing scarce resources and minimizing associated costs in some industries such as breweries, health, pharmaceutical, food and beverages, with few or negligible research on agro-allied industry which contributes significantly to the nation’s gross domestic products (Jelilov&Bahago, 2017). Therefore, this study aimed at assessing the inventory management practices in publicly quoted agro-allied firms in southwestern Nigeria. Specifically, this study examined the inventory management practices;
determine factors influencing the choice of inventory management practices; and identify the constraints to effective inventory management practices of agro-allied firms in Southwestern Nigeria.

II. METHODOLOGY

This study was a cross-sectional survey which used primary source of data collection. Primary data were collected through administration of questionnaire to members of staff of quoted agro-allied firms. Data were sourced from key departments proficient in giving the type of information the study required. The department include production department, quality control department, logistics department, warehouse/store department, and purchasing/procurement department. A two-stage sampling technique was employed to choose the sample for this study. The first stage was to purposively select two states out of the geographical zone (southwest) which were Ondo and Lagos since most of the quoted agro-allied firms were having their headquarters in these two states. The second stage involved selecting all the four agro-allied firms listed on the Nigeria Stock Exchange (NSE). Quoted agro-allied firms were selected because they have well-defined structures for management of inventories. The companies selected engage in the actual production and storage of their marketed products. The target population of the study was put as 240 employees of the five purposively selected departments. Using Yard’s formular, the sample size of the study was 186 employees, including line managers.

The study employed both descriptive and inferential statistical tools in the analyses of the study data. The descriptive tools were means, frequencies, standard deviation and percentages while the ordinary least square (OLS) regression analysis was the inferential statistical tool.

In determining the factors influencing the choice of inventory management practice adopted, the ordinary least square regression estimates was employed.

The functional relationship between the variables is expressed as

\[ Y_i = \beta_0 + \beta_1 X_{i1} + \epsilon \]

Where:

- \( Y_i \) = Vector of Dependent Variable
- \( X_{i1} \) = Vector of Independent Variables.
- \( \beta_0 \) = constant
- \( \epsilon \) = intercept

In an elaborate form, the relationship can be expressed as

\[ y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \epsilon \]

Where:

- \( y \) = Inventory management technique adopted
- \( x_i \) = Demand forecasting
- \( \alpha \) = Intercept
- \( \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 \) = Coefficients

\[ x_2 = \text{Inventory Accuracy} \]
\[ x_3 = \text{Inventory Shrinkage (quantity of theft materials, spoilage or expired raw materials)} \]
\[ x_4 = \text{Timely deliveries (period)} \]
\[ x_5 = \text{Lead time (period)} \]
\[ x_6 = \text{Ordering Cost} \]
\[ \epsilon = \text{Error term} \]

III. RESULTS

Table 1: Practices of Inventory Management in Agro-allied Companies

<table>
<thead>
<tr>
<th>Variables</th>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership structure</td>
<td>Locally owned</td>
<td>105</td>
<td>66.4</td>
</tr>
<tr>
<td></td>
<td>Partly foreign</td>
<td>54</td>
<td>34.0</td>
</tr>
<tr>
<td>Inventory type handled</td>
<td>Finished goods</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>Operating supplies</td>
<td>14</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>Production inventories</td>
<td>75</td>
<td>47.2</td>
</tr>
<tr>
<td></td>
<td>All of the Above</td>
<td>66</td>
<td>41.5</td>
</tr>
<tr>
<td>Is there any form of inventory forecast?</td>
<td>Yes</td>
<td>109</td>
<td>68.6</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>50</td>
<td>31.4</td>
</tr>
<tr>
<td>Method of stock taking</td>
<td>Periodic</td>
<td>45</td>
<td>28.3</td>
</tr>
<tr>
<td></td>
<td>Perpetual</td>
<td>65</td>
<td>40.9</td>
</tr>
<tr>
<td></td>
<td>Both</td>
<td>49</td>
<td>30.8</td>
</tr>
<tr>
<td>Store keeping practices</td>
<td>Centralized</td>
<td>60</td>
<td>37.7</td>
</tr>
<tr>
<td></td>
<td>Decentralized</td>
<td>42</td>
<td>26.4</td>
</tr>
<tr>
<td></td>
<td>Matrices</td>
<td>57</td>
<td>35.8</td>
</tr>
<tr>
<td>Purchasing policy adopted</td>
<td>Bulk purchase</td>
<td>119</td>
<td>74.8</td>
</tr>
<tr>
<td></td>
<td>Pieces meal</td>
<td>13</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>Both</td>
<td>27</td>
<td>17.0</td>
</tr>
</tbody>
</table>

Table 2: Extent of Familiarity with the Inventory Management Techniques

<table>
<thead>
<tr>
<th>Techniques</th>
<th>Not Familiar</th>
<th>Seldom Familiar</th>
<th>Familiar</th>
<th>High Familiar</th>
<th>( \bar{X} )</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Inventory System</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Two-Bin/Bin card</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Economic Order Quantity (EOQ)</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Just-In-Time (JIT)</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Material Resource Planning (MRP)</td>
<td>-</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Techniques</th>
<th>Not at all</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>( \bar{X} )</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Inventory System</td>
<td>-</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Two-Bin/Bin card</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

F = Frequency (number of respondents), \( \bar{X} \) = mean, s = standard deviation

Table 3: Rate of Adoption of Inventory Management Techniques

<table>
<thead>
<tr>
<th>Techniques</th>
<th>Not at all</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>( \bar{X} )</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
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<td>-</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Two-Bin/Bin card</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>
Inventory Management Practices and Techniques in Agro-allied Companies

The analysis in Table 1 showed a high proportion (66.4%) of the respondents indicated that most of the agro-allied companies were locally owned, while 34% indicated they were partly foreign owned companies. Concerning the type of inventory handled, 2.5% of the respondents indicated that the firms held finished goods, 8.8% indicated operating supplies, 47.2% indicated production inventories, and 41.5% specified that the firms held all three types of inventories. Also, 68.6% of the respondents attested to the fact that the agro-allied companies make use of inventory forecast to maintain optimum level of inventory. Inventory forecasting supports the company in making decisions relating to cost and effectiveness within the production system.

In the area of stock taking in the firms, 28.3% of the respondents specified Periodic Method, 40.9% specified Perpetual Method, while the remaining 30.8% indicated both methods of stock taking. Besides, in most of the agro-allied companies the store keeping practices was centralized approach as indicated by 37.7% of the respondents. About 26% of them indicated that some of the firms employed decentralized approach, while 35.8% respondents. About 26% of them indicated that some of the firms held some of the firms' inventory purchasing policy was the bulk purchase, 8% specified piece meal policy, and the remaining 17% indicated both; that is, a mixture of bulk and piece meal purchasing policy.

Tables 2 and 3 presented the results showing dominant inventory management practices among surveyed agro-allied firms. It was viewed from their extent of familiarity and adoption rate of the inventory management techniques. Five inventory management techniques were identified by this study. They include ABC inventory system, Two-Bin/Bin card, Economic Order Quantity (EOQ), Just-In-Time (JIT), and Material Resource Planning (MRP). The analysis in Table 3 showed that 22.6% of the respondents indicated that the firms' inventory purchasing policy was the bulk purchase, 8% specified piece meal policy, and the remaining 17% indicated both; that is, a mixture of bulk and piece meal purchasing policy.

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Concerning the rate of adoption of inventory management technique as presented in Table 4, only 5% of the respondents indicated high rate, 67.3% indicated moderate rate, and 27.7% indicated low rate of adoption of ABC inventory system. Also, 43.4% indicated that Bin card had high rate of adoption, 28.9% indicated moderate rate, and 27.7% indicated low rate. In the case of EOQ, 59.1% of the respondents indicated high adoption rate, 19.5% indicated moderate rate, and the remaining 21.4% indicated low adoption rate. Furthermore, no respondent indicated high adoption rate for JIT technique. However, majority (72.3%) indicated moderate rate of adoption, while the remaining 27.7% of the respondents specified low rate of JIT adoption. For MRP technique, a high proportion (73%) of the respondents specified high rate of adoption, 11.3% indicated moderate rate, and 15.7% indicated low adoption rate. It was clear from the results that most commonly adopted inventory management techniques in the agro-allied companies were the MRP (\(\bar{x} = 2.57, s = 0.75\)), EOQ (\(\bar{x} = 2.38, s = 0.82\)) and Bin card (\(\bar{x} = 2.16, s = 0.83\)) techniques.

Factors Influencing the Choice of Inventory Management Practices

Table 4 presents the factors influencing the inventory management practices adopted in the agro-allied companies. Ordinary Least Squares (OLS) was run to establish the influence of each factor on inventory management practices of the agro-allied companies. The results showed that demand forecast (\(t = 0.264, p < 0.05\)), inventory accuracy (\(t = 0.352, p < 0.05\)), inventory shrinkage (\(t = -0.157, p < 0.05\)), lead time (\(t = -0.718, p < 0.05\)) and ordering cost (\(t = -0.182, p < 0.05\)) were the factors significantly influencing inventory management practices. However, the F-statistics showed that the aforementioned factors including timely delivery period had significant influence on inventory management practices in the selected agro-allied companies (\(F = 74.124, p < 0.05\)). The coefficient of determination (R²) value in Table 5 depicted that these factors of demand forecast, inventory accuracy, inventory shrinkage, timely delivery period, lead time, and ordering cost explained as high as 74.5% of the variation in inventory management. This implies that the intensity of inventory management in the agro-allied companies is influenced by these factors.

Constraints to Effective Implementation of Inventory Management Practices

Table 5 showed that majority (20.1%) of the respondents indicated low physical assessment of raw materials at the point of delivery as the most critical constraint to effective implementation of inventory management practices in agro-allied industry. This was closely followed by other key constraints such as lack of information from the part of production planning and inventory control officer (18.2%), space constraints (16.4%), environmental factor (15.7%) and non-availability of raw materials (14.5%). The weak factors influencing the implementation of effective inventory management practices in the agro-allied companies include poor altitude of stakeholders towards inventory risk (5.7%), lack of good warehouse (5.7%), and poor management of inventories (3.8%).

V. CONCLUSION

The study revealed that inventory management practices of the agro-allied companies include inventorying forecasting, investing more on production inventories, perpetual stock taking, centralized store keeping, and bulk inventory purchasing policy. This study also showed that ABC inventory system, Bin card, Economic Order Quantity (EOQ), Just-In-Time (JIT), and Material Resource Planning (MRP) were the inventory management techniques used by the agro-allied companies. However, the most commonly adopted techniques were the MRP, EOQ and Bin card. Also, demand forecast, inventory accuracy, inventory shrinkage, lead time, and ordering cost were the key factors influencing inventory management in the companies. In addition, low physical assessment of raw materials at the point of delivery, lack of information from the part of PPICO, space constraints, environmental factors, and non-availability of raw materials were the major constraints to implementation of effective inventory management practices/techniques. Therefore, the study concluded that agro-allied companies in Southwestern Nigeria employ robust inventory management practices and techniques to handle their enormous inventories.

Based on the findings, this study made the following recommendations:

4) Agro-allied companies in Nigeria should increase their resource commitment on staff training and develop the necessary skills to update their knowledge and enhance innovation.
5) There should be consistent physical assessment of raw materials at the point of delivery.
6) To promote effective inventory management practices in agro-allied companies, professionals in store and warehouse management should be employed. Professionals in inventory management practices are members of professional bodies such as the Chartered Institute of Warehousing and Materials management, Nigeria (CIWM), Chartered Institute of Supply Chain management, Ghana (CISCM), and Chartered Institute of Purchasing and Supply Management of Nigeria (CIPSMN).
REFERENCES


University of Nairobi, Department of Management Science, Nairobi.


Risks, Barriers and Scopes of E-Business Adaptability in Bangladesh

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Paper ID: ICBM-19-0322

Abstract – Electronic technology and online medium of the transaction has been amplified in last decades. The business trend has already been transformed from the traditional way to electronic based in the developed countries. Developing countries are also inclined to established electronic business practice. Many developing countries as well as least developed countries are also upholding themselves as a prominent country in e-business practice. But in Bangladesh e-business practices are yet to be developed. In this paper, our concentration is to present the taxonomy of barriers and risks facing e-business perusing markets in Bangladesh and uncover the potential scope of e-business in Bangladesh at present time and upcoming ages. Segregating the barriers, defining the risks and discovering the significant scopes are ascertained in the prospect of Bangladesh only.

Keywords – Electronic technology, online medium, e-business, barriers, risks, scopes

I. INTRODUCTION

The international business structure has been transformed from a traditional approach to digitalized approach. Electronic devices simplify the business transactions which are concluded through the medium of internet. Online business or digitalized business operations are widely known as e-business. The full form of e-business is the electronic business in which both business firms and customers built the relationship by involving electronic devices along with the medium of internet. E-business becomes very popular over the world.

SMEs, few sole enterprises and few partnership enterprises are conducting the e-business approach in Bangladesh. But large firms are not showing enough interest to establish mass e-business practice. As consequences, Bangladesh misses grabbing the important overseas market.

E-business is a prosperous business process for the upcoming trend of business patterns. But subsistent risks and barrier, oppose progressing the e-business practice in Bangladesh. Some of them are controllable and other is uncontrollable. But both affect the pace and practice of the business operation. It is emergent for business firms to adopt the uncontrollable barriers to cope with the business environment and attain the overall goals.

Barriers to the effective e-business can be diversified in the industrial world but especially precarious of the developing countries [3]. The hope is that some of the barriers will be mitigated with time flow. Barriers to e-business vary based on the types of business and services.

On the contrary, the potentialities and the scopes of the e-business adaptability are also huge. A mass latent potential market is belonging in Bangladesh and Indian sub continental for the Bangladeshi online business firms. India and China are the neighboring counties of Bangladesh and both of the countries are generating mass practice of e-business. So it is envisaged an opportunity to grab the mass online market which is still dormant for Bangladesh.

This paper is focusing on the existing major barriers and risks which lag the interest in adopting e-business in Bangladesh. Besides, this paper is also concentrating on potential scopes of the e-business.

II. LITERATURE REVIEW

E-business is a universal term to make the information available to the general public and to accomplish a diversified form of transactions through online. There are various parts which are included in the process of e-business. E-business comprises several terms for demonstrating tangible operations which includes e-commerce, e-government, and others [9]. We are living in the era of technology. Business pattern and environment are transformed in a dynamic way to cope up with the technology. The consequences of internet-enabled technology are significant in terms of exacerbated revenues, delighted customers, consolidated overheads and high efficiency. E-business is much more favorable for small and medium enterprises. Large enterprises face problems regarding cultural changes and conducting modern processes but these are the advantages for small and medium enterprises because of their ability to adopt those changes spontaneously [6].

The international trade is also increasing in a progressive way. The pattern of global trades and the strategies of marketing have been driven by adopting the infrastructural changes impacting the SMEs over the world. In recent ages, developing countries are amplifying new policies to harmonize the requirements of various changes in the arena of trade and industry. Moreover, entrepreneurs are synthesizing with the renewed environment. The economy of the world is boosting up and the contribution of E-business is remarkable in this prospect. It is estimated that the global economy approaches $70 trillion but approximately 10% transactions will be occurred through online. E-business
success depends on a critical threshold of online users and the pioneer to a critical threshold of sellers and buyers [5]. In developing countries most of the businesses are small. As a result, this type of businesses gets advantages due to slighter complications. On the contrary, the investments in the sector of information technology and information system are not properly focused due to limited resources and this drives into probable failure. As a developing country, Bangladesh is not lagging behind in the sector of e-business. Today it is the vibrant perspective of the internet to emerge e-business. E-business practicing is promptly grown up over the world and also in Bangladesh [7]. Though Bangladesh is a developing country, the communication infrastructure of the country is not enough developed to move from one place to another place spontaneously and it is time-consuming too. So people are being interested in online marketing [4]. When potentiality arises, some barriers also appear. Barriers to e-business adoption handle in a specific way which is based on the attributes of the business e.g. the industry, business type and culture of the organization.

III. METHODOLOGY

Secondary data such as articles, e-book, conference publications, different web portals, observations and research papers are used in this paper. The paper is mainly focused on the qualitative data which is expressed in a descriptive way. Small and Medium Enterprises (SMEs) are the prominent consideration of this paper.

IV. OVERVIEW OF E-BUSINESS IN BANGLADESH

World business environment is transforming from banal practice to online practice. The spread of internet and online business infrastructure are supporting the enterprises to adopt the changing circumstances. As of June 2017, 51% of the world population are availing the internet facility according to the report of “world internet users statistics and 2016 population stats”. According to data of “internet world stats, 2017” 48.7% internet users are Asian. According to the data of Bangladesh telecommunication regulatory commission, the total number of internet subscribers in Bangladesh has reached 80.829 million at the end of January 2018. Approximately 49% population of Bangladesh is currently using the internet based on the data of ”global digital report”. The amount of internet users in Bangladesh is enormous and the opportunity of the adoption of e-business is also high. But still due to some leggings and barriers Bangladesh is struggling to grasp the potential e-business market. Mainly B2B, B2C, C2C, B2E business model are popular in the sector of e-business in Bangladesh. Bikroy, akhoni, Daraz, pickaboo, rokomari, ajkerdeal, priyoshop, chaldal, are prominent shopping sites of Bangladesh. Besides BDjobs, prothom-alojobs, chakri are providing informational services regarding employment. Pathao, Sohoz are forming the transportation sector easier. Pathao also provides food and parcel delivery service. Moreover, there are more than 8000 micro sized e-commerce facebook pages are operating their business in Bangladesh. E-marketing and e-payment system are amplifying the functions of e-business. Visa, MasterCard, DBBL NEXUS, bKash, rocket, fast cash are popular online payment gateway in Bangladesh. Much tiny online business is growing spontaneously but unfortunately, there are no large online business enterprises like Amazon, eBay, Alibaba in Bangladesh. E-business platform of Bangladesh is still unable to grab the international market. Some barriers are hampering the expected performance of e-business. This paper is an attempt to uncover those barriers and aiming to bring out some scopes for adopting e-business potentiality in Bangladesh.

V. BARRIERS TO THE E-BUSINESS ADAPTABILITY IN BANGLADESH

Barriers mean a natural formation that hinders movement and action. E-business barrier creates obstacles between the parties for the better movement of the business operations. Due to the diversified barriers of e-business in Bangladesh, the e-business operation is being limited to the SMEs. Large enterprises like Amazon, Alibaba, Flipkart are not established in Bangladesh yet. Consumer behavior is still not favorable to e-business. Moreover, the organizations do not emphasize doing business online. As consequences, the large enterprises do not come forward to take any initiative to enter into the online platform. Many sole proprietorship e-businesses have been grown up in Bangladesh but the scarcity of capital, less capability of taking the risk, inflexibility of business-customer relationship are the major factor for discontinuing their business here. The SME’s are also being a failure to convert their business into large enterprises. The barriers to the e-business can be segregated in internal
and external as shown in the structure of e-Business barrier in Bangladesh (Fig. 1).

A. Internal Barrier

1. Organizational Barrier

Internal barriers are defined as the obstacles which are related to the internal phenomena of the organization. These barriers many often can be abated by the organizational actions. Policy of the organization, target customers, formation of the organization, market segmentation can affect the movement of the e-business. These organizational barriers can be mitigated by the firm itself.

2. Customer relationship

Customer relationship is another barrier for the Bangladesh. Costumer relationship is both sided factor which create an effect on the accumulated volume of products and the satisfaction level of the customers. Customer relationship determines the choice of customers, types of the targeted customer, behavior of the customers. Customer relationship management eases the maintenance the customer through keeping the information about the customers. But there is no face to face interaction between customers and e-business organization.

3. Knowledge of Technology

The technological advantages are prominently required for e-business operation. The frequent growth of the internet enhance the perception for SME’s to spend more in e-Business technology as the business cost is inexpensive here [1]. Transactions of e-business are being occurred through the electronic devices. As a result the technological infrastructural development is obligatory for every e-business organization. The infrastructural development has not yet been inaugurated in every firm of Bangladesh. Though the technological knowledge of the people of Bangladesh is increasing, in some cases customers and employers of the organization in Bangladesh are inadequate to run the e-business properly.

4. Owner characteristics

E-business needs more flexibility to take risk. For this reason sometimes the owners do not move themselves forward to taking the risks. As a result the potentiality of e-business is still stuck in the same position that was in five years ago. Whenever the owners will have the capability of taking the risk, utilizing the capital then e-business possibility can be enhanced to the desired level.

5. Firms characteristics

The opportunity of performing business and exchanging idea are extensive when many people are online rather than fewer people [3]. When the firms start making the policy most of the time firms think traditionally to run their business. So afterwards it is quite difficult for the organization to establish online business as the business operations have already been regulated by offline medium. Most of the business organizations are not enough flexible to transform their business from offline to online operation.

6. Business Infrastructure

Business continuity, facilities, business services are some major component of business infrastructure. Business operation is highly depended on the quality of service, strategic decisions and business sustainability. Insufficient infrastructure works as vital role in discouraging e-business all over the world [3]. In Bangladesh sometimes e-business facilities, quality of service fail to maintain the global standard. As a result the accumulated business infrastructure is not enough favorable to establish e-business.

7. Cost Management

The e-business potentiality mostly depends on the technology. Adequate fund is required for the technological development and business profitability is prolonged by reducing the cost. But development of technological structure enhances the installation cost of the business. So many often business owners are not willing to consider the cost against the profitability.

B. External Barrier

External barriers are those obstacles which occur outside the organization and which is uncontrollable to the organization but external barriers have some impact on the organizational operations. In these phenomena, an organization has to take action and movement by their own behavior to deal with the situation by estimating the impact and procedures.

1. Political Barrier

The political circumstances directly or indirectly affect the business functions of an organization. Political instability sometimes hampers the swift movement of e-business. In Bangladesh negative political circumstances such as strikes and clashes often deteriorate the business operation. These situations are uncontrollable to the firm and it densely impacts on the running trend of the organization. In terms of e-business customers as well as business, the organization faces some hinders.
2. **Geographical Barrier**

In Bangladesh, the communication infrastructure in the remote area still developing but not enough developed. Due to the geographical obstacles, the hill area like Thanchi, Humhum, Lama, Alikodom, Sushong-Durgapur, Roangchori, Naikkhongchori are lagging behind of getting the advantages of e-Business.

3. **Regulatory and legal issues**

If a change in the regulatory and legal issue is unfavorable in the business condition then it lessens the interest to operate online business activities. Regular changes in tariff, taxes, vat collapse the e-business operation and also hamper established customer relationship with the business.

4. **Cultural and Social Barriers**

For establishing customer relations, it is essential to measure the way of suiting web into the culture of a country. In the prospect of Bangladesh, the social and cultural trend deeply drives the people. The social and cultural practice is still not enough favorable to e-business. People are not used to online business transactions. Mass people of Bangladesh are still out of the frame of e-business because of the social and cultural factors. Social infrastructure like belief, trend and practice are still not developed enough to support the changing phenomena of e-business enhancement.

5. **Payment Gateway**

Stripes, PayPal, credit card, master card, authorize.net, SecurePay.com are some famous global payment gateways for e-business. A payment gateway is a powerful tool that helps the visitor of any store about trustworthiness. The deficiency of capability or interest to perform credit transaction is an expansive barrier of e-business [3]. In Bangladesh the gateway of payment many often is not used properly due to some fraudulent activities, distrust issues. Moreover, there are many varieties of payment gateway but the uses of many are also unknown to the most of the people of Bangladesh. bKash, Rocket, Ukash, Upay wallet, Nexus, sure cash are running familiar payment gateway. It creates obstacles in terms of e-payment system and e-business operation.

6. **Logistics Barrier**

Back-end supply chain is a very important issue in today's business. Logistics plays a vital part in terms of the back-end supply chain. The main purpose of logistics service is mainly grown up with the satisfaction of the consumer. For customer satisfaction, the organization has to think differently every time. In Bangladesh logistics service of e-business sometimes create obstacles as the organization sometimes fail to deliver any product on time. Whenever this situation happens, customer satisfaction becomes negative and the relationship between the parties hampers.

VI. **RISKS OF E-BUSINESS ADAPTABILITY IN BANGLADESH**

According to business dictionary "Risk is a probability or threat of damage, injury, liability, loss or any other negative occurrence that is caused by external or internal vulnerabilities and that may be avoided through preemptive action". In the prospect of Bangladesh, the current atmosphere of the e-business is still risky for the new entrepreneurs or existing SMEs. The contemporary risks of e-business in Bangladesh are showing in the Fig. 2.

A. **Trust issue**

E-business movement and growth is noticed nowadays throughout the world. Lack of consumer trust is one of the biggest difficulties for e-business growth and conversion. The global information systems literature accepted that, trust is very much essential for constructing and maintaining consumer relationship in the online scenario [2]. One of the most accepted definitions of trust is stated as follows: “the willingness of a party to be vulnerable to the actions of another party, based on the expectation that the other will perform a particular action important to the trustee, irrespective of the ability to monitor or control that other party” [8]. Online business requires a profound relationship with customers. But trust issues hinder the relationship with customers. The trust issue is a threat of e-business growth and by a good reputation, it can be resolved.
B. Data Security

Emphasize on cyber security and data security has become a pivotal factor in e-business. Diversified threat are belonging in the e-commerce like larceny of personnel and financial data; generate security threat [1]. Without Fig. 2. Existing risk of e-business adaption Bangladesh presented in the systems. As a result customer personal information may get leaked and violation may occur. Smaller e-business organization many often faces security risks due to insufficient internet safety from the cybercriminal. Not only hacking becomes a huge risk for all online business but also fraudulent payment system also impact big on the organization.

C. Website unavailability

In Bangladesh, much smaller e-business operation is running through social media. But many often it is measured that those businesses become closed due to not maintaining the legal issues and regulations of social media. As a result, they need to buy a domain to operate their business by using the website. So unavailability of the website becomes a threat to the business and may damage business operation. Business which is practicing bad hosting services causes the website downtime [12].

D. Market Failure

Due to the lack of proper marketing plan, less quality content, lack of calls to action, fall in promotional activity market fails. In terms of e-business, the demand may vary from person to person and varieties of products should keep on hand with the organization. When the inventory issue comes then this may cost some damage to the firm's sustainability. This damage leads the firm to the market failure. New businesses may find it necessary to hire an individual or company that specializes in online marketing, in addition to any offline marketing services they already use. Without effective online marketing to drive traffic to the website, the entire project can turn into a waste of time and financial resources. E-business prominently focuses on the online business so the traditional offline market can be lagging behind with the huge number of offline business customer [12].

E. Customer dispute

A dispute occurs when a customer has not received goods or a service, the received goods or services are not as described, the customer needs more details such as a copy of the transaction or a receipt. These may cause some risks for the E-business organization.

F. Credit card fraud

Credit card fraud means committing theft or fraud by using payment cards like the credit card or debit card. The purpose of the fraudulent activities may occur when anyone tries to obtain the products or services without paying for it. Due to insufficient data security, any information may be discharged from the system and then credit card fraudulent activities happen. Records describe that one out of five small businesses victimized by credit card fraud every year and with sixty of those stores forced to end their business within six months.

G. Physical absence of product

In Bangladesh very often it is seen that the customer orders some product and get another product. In terms of e-business, it is impossible for the customer to touch the product physically. They cannot physically examine the products. As a result of some customers directly go to the store and buy the product they want. They prefer traditional shopping procedure rather than e-business procedure. But if it can be ensured that the customer will get exactly the same product what they ordered then this risk may get diminished.

H. Return on Goods and Warranty

During performing E-business a common headache happens when it comes to dealing with the return of selling goods. It increases costs of the supply chain and also there is a possibility of not being able to resell the items at their original price. A business may have a warranty policy, under which it promises customers to repair or replace certain types of damage to its products within a certain number of days following the sale date. But what warranty conditions should apply in the

Scope of potential e-business adoptability of Bangladesh

A. Increasing user of Internet
C. Potential large market
D. Prospective tourism industry
E. Self-employment opportunity
F. Turning left from the shopping mall
G. Availability of online payment and banking
H. Developing technological knowledge
I. Smooth flow of information
J. Environment friendly

business should be identified properly. Otherwise business will lose its potential customer and it may cause the harm of the reputation of the organization.
VII. THE SCOPES OF POTENTIAL E-BUSINESS ADOPTABILITY IN BANGLADESH

The scope is known as some chances, opportunities, and possibilities to achieve some goals in a relevant area. Though there are many risks and barriers of e-business, the scope of performing e-business in Bangladesh is also massive. The internet is now using globally. Global development of technology is making the world very connected and the flow of information is also becoming very fast due to the expansion of information technology. Bangladesh is one of the emerged markets in the world as it has a huge population. Since 2000 Bangladesh remained in the unlighted position in the e-business market. But after that many offices, schools, colleges started their work through online automation process which was beyond the expectation of people of Bangladesh. Since that revolution, the potentiality of performing e-business in Bangladesh increased and the development of technology can be seen frequently. In the present situation, people can study through the use of the internet, the people are reading a newspaper through online, people are earning a lot through outsourcing and the government is also earning remittance through the people. The electronic Business platform is a huge area to perform business through the use of internet, technology and information system. As consequences, the growth of e-business is very dynamic as the scope is tremendous. The scopes of potential e-business adaptability in Bangladesh are shown in Fig. 3.

A. Increasing Users of Internet

According to the data of internet world stats, Bangladesh ranked in 10th position as the internet users of Bangladesh are 80,483,000 which are increased by 80.383% in between 17 years. This increasing use of the internet creates more scope for performing e-business in Bangladesh. By maintaining proper security protocols, legal directions and regulations it is possible in Bangladesh to convert the small and medium e-business enterprises to the large enterprise


The b2b (business to business) business platform of Bangladesh is a potential platform for performing e-business. Pricekoto.com, Bizbangladesh.com, Bdtdc.com etc. are very active and growing the b2b platform. If the operational lead time can be diminished then the performance of the business will get smoother and it will also increase customer satisfaction. According to Investopedia, Business to consumer refers to the transactions conducted directly between a company and consumers who are the end-users of its products or services. In Bangladesh many B2C small and the media marketplace has been grown up recently. B2C websites can be defined as sites on the World Wide Web through which customer can acquire any kind of services from B2C companies [10]. Pickaboo.com, Daraz.com, ajkerdeal.com, chaldal.com etc. is performing business in Bangladesh. Moreover, Bdjobs.com, chakri.com, prothomalojobs.com are also working for finding the job for the potential candidates suitable for a specific job which also refers to the B2C business platform. Consumer to consumer or C2C is the business model that facilitates business between private individuals. In Bangladesh, bikroy.com is a famous platform where a customer can sell or buy a product from another individual. In Bangladesh, Intra-B business model is also becoming a famous model. Intra-B business refers to the transaction or the communication between two or more employees of Bangladesh have different branches all over the country that follows the intra-B model of e-business. Here a communication network has been build up between the person at the counter and the person who packages the products. The entire business model has been grown up through the use of modern technology. Moreover, the businesses are now able to perform door to door operation for the customer. As a result, customer satisfaction level can go up and the relationship between the business and the customer can be maintained properly.

C. Potential large market

The potentiality and the opportunities of e-business platform are massive. The customers nowadays are trying to avoid offline market because the operational time of the online market got increased. The traditional business can offer its products and services to its local customer where e-business can offer its products and services to its global customer with the same costing. In traditional business, the infrastructure cost is very high whereas in e-business the infrastructure cost is not as higher as a traditional business. As a result, the large market can be grabbed through the use of e-business platform.

D. Prospective tourism industry

The tourism industry is one of the potential industries who serve as a service sector of Bangladesh. The historical background of Bangladesh attracts the tourist from all over the world to visit this country. Many hotels, cottages, transportation, tours and travels agencies have been grown up over the years who are working for the customer benefits and satisfaction. Those organizations are performing their business through the use of the internet. Booking hotels, tickets are happening through the use of the internet. As consequences, the tourism sector is creating large potentiality to the economy.
E. Self-employment opportunity

E-business creates self-employment opportunity for the people. Many e-businesses have been grown up through the use of social media. Nowadays people are learning and earning from the outsourcing business which also providing remittance to the government. So e-business is a platform where people can make them self-employed.

F. Availability of online payment and banking

Online payment system eases the transaction procedures and online banking system elevated the customer satisfaction level through its easy way of transactions. In Bangladesh people are getting comfortable to use Bkash, Rocket, Upay, Nexus etc. for transactions. These online payment gateways are also convenient for people to use an online banking service to affect customer's valuable time in a positive way. For this reason, the opportunities and possibilities in e-payment procedures and online banking system are increasing at an extensive rate.

G. Developing technological knowledge

The advancement in technology in today's world is influencing the whole world in a pragmatic way. Nowadays it is obvious for all the organization to seize hold of the use of modern technology. Every single moment the business is operating through the proper use of technology. In terms of e-business modern technology is used in an optimum level. As a result, technological knowledge is of people and organizations are elevating.

H. Smooth flow of information

Information is the key source of modern business. Information works as a salient factor for any organization. Through the development of technology and various e-business models, the smooth flow of information is possible in the firm. E-business also becomes successful through the effective use of information. Customer demand, varieties of product, availability of service, organizations competencies and competitiveness are modifying every moment and the valuable information will assist the organization in this changing situations. Consequences, smooth flow of information can be achieved by the effective use of technology and the proper maintenance of e-business.

I. Environment friendly

The customer’s experience is influenced by the environment of the society [11]. E-business platform provides the customer a healthy social environmental benefit. Moreover, E-business market place is environment-friendly Rialto because paperless billing can save the trees. Furthermore, the e-business platform can be used for recycling product and less waste is assured by minimizing infrastructure. E-business plays a vital role for the sustainable living and sustainable lifestyle by ensuring customer satisfaction. So it can be said that the e-business platform is an environmentally friendly platform.

VIII. CONCLUSION

It is apparent that internet facilities and the development of technology have changed the firm's business practice. Develop country have already almost transformed to e-business of their business way. But Bangladesh business is still depending on the traditional online way. SMEs are only coming forward to taking initiatives to practice e-business. Large enterprises are not interested to establish the online business practice in the firms due to existing barriers and risk in the markets of Bangladesh. The barriers can be segregated into two types based on the impacts and the capability to control over barriers. The barriers are primarily classified into internal barriers and external barrier. In Bangladesh, the market and the volume of the transactions are enormous. If the proper development and initiatives can be taken by firms and government, e-business practice will increase and the market can be segmented regarding the types of the potential targeted customers.

If the barriers can be diminished and the risks can be mitigated the e-business can be developed in Bangladesh. Large companies will be interested to develop the e-business operation. Large companies like Alibaba, Amazon can also be established in Bangladesh and these gigantic companies can affect economic conditions, business transactions and, employment. If world-class iconic large e-business firms can be established in Bangladesh, it will also be prestigious for Bangladesh in the business world. E-business is an eco-friendly business practice that reduces the paperwork. Capital cost may be higher for establishing the technological infrastructure but in long-term revenue cost can be reduced which enhance the profitability of the firms. E-Business adaptation is a potential and prominent prospect for Bangladeshi firms to grab the national and international potential customers through mitigate the risks and diminish the barriers and proper usage of the related factors.

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Abstract – Shipping businesses is one of the most competitive and dynamic business segments in the world. Human resources is one of the most powerful strategic weapons for companies operating in shipping industry to enhance their competitive advantage in a dynamic business environment. Managing skilled and competent employees is crucial to reduce accident, casualties, risk, and the cost of transportation, and to enhance customer satisfaction. The main objective of the study is to assess the required skills and competencies of human resource in shipping companies and the competitiveness of shipping companies through employment planning, recruitment and appropriate training. This paper also aims at analyzing the shipping industry in Bangladesh and highlighting some competitiveness, which the firms in the industry may acquire by managing skilled and competent employees. This paper is based on secondary data, which obtained from various secondary sources through extensive literature review.

Keywords – HRM, maritime, shipping, seafarer, skills, competence, competitiveness

I. INTRODUCTION

Shipping companies belongs to a highly competitive business environment. Human resource is the most important strategic weapon for staying ahead in the competition. Today, an effective HR strategy is a must for achieving sustainable competitive advantage. To gain growth and business excellence, the management of the shipping companies should set out a clear vision so that the employees can understand the management expectations. A shipping company seeking excellence must take into account that multinational teamwork, collaboration, communication and rewards for excellence contribute to the development of commercial, risk management skills and provide a competitive advantage in business. The management of skilled employees in shipping companies is crucial to reduce accidents and casualties, risk, reduce costs, increase customer satisfaction and business sustainability. In this environment, competitive employee is the one who well trained, take a low risk and are responsible to their work and the marine environment. In case of shipping companies in Bangladesh, it is crucial to manage the best employees to provide the best services in order to obtain competitive advantages in the global shipping market. The traditional way to study human performance in the maritime field is by analyzing accident reports or more accurately by analyzing accidents. Approximately, 80 percent of accidents at sea causes by human factors or human error. Many incidents have been recorded in the past of Bangladeshi shipping industry, for example, the fire hazard of the BSC ship named "M.V Banglar Sourav" or the pirate attack on a ship named "M.V Jahan Moni" indicating the industry's lack of skill and competence employee management. However, the overall performance of shipping companies in the country has no significance compared to the global shipping industry. Structural and innovative employee planning, recruitment and training processes are very crucial for Bangladeshi companies.

II. OBJECTIVES OF THE STUDY

The main objective of the study was to assess the skill and competency of human resource in shipping companies and the competitiveness of these companies regarding its human resources. To achieve the main objective, the following sub-objectives were set:

a. To identifies the competitive skills and competences of human resource in shipping companies.

b. To assesses the competitiveness of shipping companies through employee planning, recruitment and appropriate training.

III. METHODOLOGY

This paper is basis on Secondary data, which obtained from different Annual Report, Internal MIS Report, Human Resource Management Related Books, Journal, periodicals Publication, Internet.

IV. SHIPPING INDUSTRY IN BANGLADESH

Bangladesh is a maritime nation with a potential opportunity for shipping. It has 9,000 square kilometers of
V. ESSENTIAL SKILLS AND COMPETENCIES IN SHIPPING INDUSTRY

Maritime transport or shipping has a complex and evolving operational structure that requires different skills and expertise to carry out the operation efficiently. Specialized and sophisticated ship operations demand higher analytical skills, abilities and competencies. Although the business design is multi-dimensional, technical and non-technical personnel with specialized skills and abilities are necessary. In a shipping company, the company operates through two main divisions, one is shore-based operational activities and the other is on-board (by ship crews). As the two have different working environments, nature of operational activities are solely different. Commitment from both the ship and shore staff is the prerequisite for efficient ship operation. The skill and competency has also different for employees work in these two divisions.

Ship managers need to acquire office automation skills in order to respond effectively to changes in the operational processes of the maritime industries, for example: financial valuation, business management, etc. [2]. Today's managers and maritime professionals need to acquire a combination of technical and management skills and competences such as leadership, team building, interpersonal, organizational knowledge, communication, marine engineering, navigation systems, freight management, naval architecture, bunkering, information management, etc. They also need to possess the knowledge of relevant Maritime conventions, e.g. SOLAS, STCW, MLC, ISM Code other conventions and resolutions current and emerging legislation issued by, e.g. ILO, IMO, WHO, Flag State as well as international and national employment laws etc. Therefore, instead of being limited to technical skills, offshore skills, planned and systematic management development programs are needed to provide important management skills, such as decision-making, interpersonal relations, leadership, organizational knowledge, etc. [3]. Employees and seafarers should now acquire a variety of knowledge and skills, focusing not only on their technical expertise, but also on their management skills. The so-called ‘hard’ skills [4];[5];[6] of the seafarers remain of first priority, however ‘soft’ skills, such as leadership, communication, conflict management, cultural diversity management, team working, etc. are gaining ground. In this context, the skills and competences required for current and future maritime resources (representing seafarers and managers-employees) involve a combination of the following: [7].

territorial waters and a 720 km long coastline.[1] The shipping industry is an intrinsic part in the Bangladeshi economy in the provision of importation and export of goods. The country has two operational seaports, Chittagong Port and Mongla Port. The port of Chittagong is the country’s main gateway to international trade. It is considered as the lifeline of the national economy as 92% of export and import of Bangladesh is conducted through this port alone. The Port of Mongla is the second largest seaport of Bangladesh. Another one is "Payra Port," which is currently under development. At present, about 10,000 inland and coastal vessels and 37 registered foreign-going vessels sail throughout the country. More than 100 foreign and local shipping companies currently operate directly or through their agents in Bangladesh. They provide various types of shipping and logistics services across the country. Cement industry, steel industry entrepreneurs have embraced a new venture owning and operating vessel to transport their industrial raw materials and finished product all over the world. This venture of vertical business integration has helped them to control the overall supply chain and save time and hard earned foreign currency. RMG industry in Bangladesh is a large market for container shipping companies.

Bangladesh Shipping Corporation (BSC), a state-owned and managed public sector corporation, is the largest ship owner in Bangladesh, established under President's Order No 10 of 1972 on 5 February 1972 with the aim of providing local exporters, importers and businesses with efficient, safe, reliable and economic shipping services through sustainable shipping and auxiliary infrastructure (BSC Annual Report, 2015 - 16). Bangladesh Shipping Corporation now mainly offers international shipping services. It also offers cargo transport, chartering and tramping, feeder services, crude oil transport and lightening, food grain transport and lightening, agency and ship repair services. Previously, Bangladesh has to depend on foreign shipping companies to provide the required services for different types of shipping services, such as containers, dry bulk & liquid bulk transport. But entrepreneurs in Bangladesh have already started to invest in these industries. Companies such as Kabir Steel, Basundhara Group, Abul Khair Steel, Akij Group have taken vertical integration into the supply chain by owning and operating vessels. Nowadays, efficient domestic shipping companies can offer cost-effective international trade transport that makes export prices competitive. MGH Group has private shipping lines operating through Yang Ming Line, China Shipping Container Lines, Compania Sudamericane de Vapores (CSAV), Sitara Shipping Lines, Balaji Shipping Lines, etc. East Coast Shipping Lines Ltd is one of Bangladesh's most professional shipping agents. Since the beginning of East Coast Shipping Lines Limited, 668 ships including oil tankers, bulk and liquid cargoes, general import cargoes, heavy lift cargoes, dangerous and hazardous cargo carriers have been successfully handled in both Bangladesh's seaports (East Coast Shipping Database, 2016). CMA CGM Bangladesh Shipping Limited is the French container-shipping group CMA CGM’s subsidiary, which has captured a large market in Bangladesh. Summit Oil and Shipping Company Limited, HRC, Deshbandhu Shipping Ltd., United Shipping Lines are others those provide shipping services.
A. Managerial-business skills:
Management skills such as general principles of business administration, accounting and finance, leadership, crisis management, stress and conflict management, team building etc. Ship management is one of the most complex business fields including a substantial number of decision-making processes. Company performance depends extensively on well-structured management processes and an effective leadership style. The dynamic nature of maritime transport influences decision-making in a complex business environment with rapidly changing technologies, market strategies, risks and various challenges.

B. Technical skill and knowledge:
Technical skill refers marine engineering, electrical engineering, ship navigation, cargo handling, bunkering, naval architecture and radio communication etc. for seafarers. Shore based employee also required several technical skills such as IT, communication system, EDI maintenance and other technical position.

C. Cultural competency:
Such as cultural awareness and understanding, managing multicultural working teams, managing conflict among different cultures, etc. This skill mainly requires for onboard (seafarer) employee, as they have to work in a multicultural environment.

D. Sea experience:
Familiarization with bridegroom activities, deck, engine and cargo operations, telecommunications, and psychological parameters of long stay at sea, working with different nationalities, etc.

Researcher and professional expertise identified and enlisted some skills and abilities must require for employee who work in shipping operation: [8]

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Perception speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arithmetic reasoning</td>
</tr>
<tr>
<td></td>
<td>Computational ability</td>
</tr>
<tr>
<td></td>
<td>Spatial ability</td>
</tr>
<tr>
<td></td>
<td>Dexterity</td>
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<table>
<thead>
<tr>
<th>Working Style</th>
<th>Attention to details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reliability</td>
</tr>
<tr>
<td></td>
<td>Persistence</td>
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<tr>
<td></td>
<td>Endurance</td>
</tr>
<tr>
<td></td>
<td>Working independently</td>
</tr>
<tr>
<td></td>
<td>Taking initiative</td>
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<td></td>
<td>Responsibility</td>
</tr>
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<td></td>
<td>Self-control</td>
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<tr>
<td></td>
<td>Working in harmony</td>
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<tr>
<td></td>
<td>Effort</td>
</tr>
<tr>
<td></td>
<td>Enthusiasm</td>
</tr>
</tbody>
</table>

VI. TYPES OF PERSONNEL & EMPLOYEES IN SHIPPING INDUSTRY
The categories of human resources who are (or willing to be) employed in the shipping industry include: seagoing personnel, ex seafarers who are office positioned, educated shore-based personnel and university graduates;[10].

A. Seagoing personnel:
This category employee has sea experience and a strong technical background due to their studies in marine academies and their work in sea environment. Their managerial and business skills are mainly develop by experience, their cultural competence basis on experience and enriched by the on-board mentoring system. Shipboard positions are main three categories, first is Deck department consist with following positions: Master (Captain), Chief Mate (First Officer/Chief Officer/First Mate), Second Mate (Second Officer), Third Mate (Third Officer), Able-Bodied Seaman/Certified Rating, Ordinary Seaman (O/S)/Uncertified Rating. Second is engineering department consist with positions of Chief Engineer, Second Engineer, Third Engineer, Fourth Engineer, Engine

Table 1: Sample Lists of Skills and Abilities

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Native and foreign language</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Communication and media</td>
</tr>
<tr>
<td></td>
<td>Computers and information technology</td>
</tr>
<tr>
<td></td>
<td>Telecommunication equipment</td>
</tr>
<tr>
<td>Administration</td>
<td>Knowledge of industry rules, regulations and guidelines</td>
</tr>
<tr>
<td></td>
<td>Knowledge of conventions, resolutions, rules and regulations</td>
</tr>
<tr>
<td></td>
<td>Knowledge of human behavior</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skills</th>
<th>Verbal skills, Writing and Reading skills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persuasion skills</td>
</tr>
<tr>
<td></td>
<td>Time management skills</td>
</tr>
<tr>
<td></td>
<td>Technical skills</td>
</tr>
<tr>
<td></td>
<td>Coordination and Organizing skills</td>
</tr>
<tr>
<td></td>
<td>Interpersonal communication skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Abilities</th>
<th>Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Decision making</td>
</tr>
<tr>
<td></td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td>Dissemination of information</td>
</tr>
<tr>
<td></td>
<td>Categorization</td>
</tr>
</tbody>
</table>

Table 2: 12 Generic Skills for Seafarer

| 1 | Managerial/Leadership |
| 2 | Design mindset / Thinking critically / System thinking / Problems solving |
| 3 | Technology |
| 4 | Learning agility / Information literacy / Intellectual autonomy and self-management |
| 5 | Environmental and Sustainability |
| 6 | Science, Technology, Engineering, Mathematics (STEM) |
| 7 | Communication / Virtual collaboration / Social intelligence |
| 8 | Data analysis |
| 9 | Language, Literacy and Numeracy (LLN) |
| 10 | Customer service / Marketing |
| 11 | Financial |
| 12 | Entrepreneurial |
Room Rating, Electrician, Head Tunnel-man, Tunnel-man, Mobile Utility Employee (MUC). Third is Steward’s Department consisting of Chief Cook (Chief Steward), Second Cook’s position.

B. Shore-based personnel from Ex-seafarers:
This category employee has both sea experience and technical background, as they are mainly ex-masters and engineers. Their management and business skills are enhance further by their work in the office. However, they have a rather practical knowledge of the principles of business and management, giving them a pretentious scholarly attitude. These types’ personnel may work efficiently in shore-based positions such as Vessel Operator, Crewing Operator, Operations Manager, Post Fixtures Operative, Marine Operator, Dock Master, Fleet Manager, Technical Superintendent, QHSE Superintendent, QHSE Engineer and Marine Superintendent.

C. Educated shore-based personnel:
This category includes economists, brokers, lawyers, accountants, naval architects and so on. These employees have business and management skills developed through their undergraduate and (possible) postgraduate studies. They also have some technical knowledge, which stems from their studies and their daily work in shipping companies. Following managerial and operational positions are sophistic for these category personnel: Shipping Manager, Shipping Coordinator, Sales Coordinator, Intermodal Manager, Agency Manager, Pricing Analyst, Ships Planner, Ships Operator, Customer Services Clerk, Trade Assistant, Trade Coordinator, Purchasing Manager, Import Analyst and Export Analyst etc. This category may have developed a certain cultural understanding through communication with foreign seafarers or through university/school’s multicultural classrooms. However, they still lack the cultural competence to develop by focusing on the different nationalities and cultures employed in the shipping industry and by leaving behind the cultural stereotypes that dominate both on board and in the office today.

D. University graduates:
Graduate economists, brokers, lawyers, accountants, naval architects, etc. who are willing to work in the shipping industry, may have managerial-business skills and some technical knowledge, which can be developed and acquired through their under- and postgraduate studies. However, they lack sea experience, which is perceived as an important flaw by the shipping companies. Regarding the cultural competency, they may have developed some cultural understanding via multicultural classrooms at Universities; however, it is not adequate for the needs of the shipping industry.

VII. HUMAN RESOURCE COMPETITIVENESS IN SHIPPING INDUSTRY
A competitive shipping company is the one that clearly states a mission that reflects a serious commitment to international transport activities and has the ability to quickly identify and adapt to the requirements and opportunities of clients providing high-quality competitive transport services. The following factors are decisive for the international competitiveness of a company: specific assets and core competences of employees that can use to gain competitive advantage, reputation and continuous innovation in shipping industry. In view of the overall picture of the maritime shipping industry, recruitment and training of personnel are high on the list of issues that influence competitiveness, safety and excellence in the operation of cargo and ships. Also the organizational structure of shipping companies, the social environment on board ships, the multinational working climate, organizational culture, innovations, safety and security and so on.[11].

A. Competitiveness through Recruitment and Selection:
The recruitment process is the main process to bring new employee to the company. In today context, when a most of sea accidents happen due to human error, a highly attention must be paid to recruitment in order to maintain quality and safety of maritime operations. Shipping Companies might consider increasing the efficiency of the transport services on the national and international markets to get a higher profitability, cooperation with educational institutions, crewing companies and HR companies specialized in providing professional training services. In the context of the complexity of the global labor market, recruitment of the best needed seafarers and cadets represent one of the most essential strategies for a maritime company to acquire and develop competitiveness. [12]. Competitiveness can be achieved at the early stage of selecting personnel, especially for seafarers as their job is contractual basis. Shipping companies required to conduct continuous recruitment of seafarers. The process of seafarers’ recruitment and selection seem easy but in actual scenario, it is not. For the success of this process, as it depends on the knowledge and skills of the ones involved. Recruitment of seafarers can be made by “in house” or “manning agencies”. Nowadays global companies use to outsource and collaborate with manning agencies due to shortage of seafarers. In case of Bangladesh, it has reputation as a seafarer’s supplier country for decades. Bangladeshi shipping company can easily achieve competitiveness by recruiting and selecting best seafarers from large pool of Bangladeshi seafarers.
B. Competitiveness through Training and Development:

Competitiveness can achieve by providing adequate training, which is important for both shore-based and seagoing employees to maintain their competence with the changing pattern of the shipping industry and global trends in the maritime world. Good quality training is a prerequisite for a company to maintain a high operating standard. In all its forms, training adds value and ensures safety. The aim of training and development is to ensure that employees can efficiently perform their jobs. Today, the business environment is changing and organizations are in intense pressure to stay ahead of competition through innovation. Training and development therefore directly stimulate business goals and objectives. Shipping companies can gain competitive advantages in the medium and long term by focusing on the orientation of human resources towards its clients, opening new communication channels, improving the formal and informal communication climate, developing professional skills and interpersonal communication skills such as cooperation, improving motivation, dealing with emotions in organizational behavior. Many of the largest of them develop their own methods of running ships efficiently, organize the training of their own staff, and provide a promising career path for professionals ashore and onboard. As shipping itself becomes more specialized, the management companies adapt accordingly, in an effort to provide specialist services for every kind of fleet and ship-type. For shipboard employees, pre-sea courses for cadets, counseling, distance learning, STCW courses and system training are general solutions. The purpose of structured shipboard training is to acquire theoretical knowledge, familiarization and drilling, mentoring and next rank training. Professional competence can acquired upon successful completion of different competency courses and simulation training. An important tool for professional competence is evaluation and mentoring on-board. Improvements are made through advanced simulation training, leadership and teambuilding programs, customized training based on the team's needs. A continuous performance analysis is also required for up-to-date results. Employers have a great responsibility to ensure that shipboard employees are able to use the most modern equipment. As technology changes, the equipment can change very quickly, so they need onboard training and may need support from computer - based training.

The training system that a competitive company must take in consideration is not only limited to shipboard training. Shore based employee needs training to keep pace with market trends, enhance competence and soft skills, as the nature of shipping business is dynamic. There is continuous change and evaluation in operation of business. In house shore-based courses are related to company’s system and policies, safety, productivity and loss control. Bangladeshi shipping companies should focus on a performance management plan to support employee development. This strategic performance tool supports the organization's strategic plan and goal achievement. The aim of these tools is to compensate for related decisions, promote the potential of the employee, establish efficient rewards and recognition systems and help to make equitable decisions. Management can identify the right training needs by using a performance management plan. If companies aspire for excellence must keep in mind that multinational teamwork, collaboration, communication and excellence rewards influence the development of business and risk management and provide a competitive advantage. Additionally, shipping companies could launch joint training programs with the maritime universities and institutions involved in the training of maritime professionals in Bangladesh by investing in the acquisition of learning resources and equipment. In turn, trained students and professionals could become a reliable source of supply of talents to industry. The quality of graduates can also improve when ship officers and other competent seafarers at sea assist in classroom training. Such hands-on experience, knowledge and stories from their long life time at sea would be very beneficial for students.

VIII. CONCLUSION

Shipping or maritime transport is highly competitive and extremely dynamic in nature. This continuing trend, in conjunction with today’s highly competitive and complex business environment, challenges ship management companies to become more efficient and innovative. If companies want to survive the high competition of the global shipping industry, they must provide the best services that can only ensures by qualified and trained employees working in the companies. Since shipping companies worldwide often face economic instability with highly volatile freight rates, stricter regulations and intense competition, Bangladeshi shipping companies cannot overlook the important role that employees play in meeting the company's business goals, implementing the management strategy and satisfying their clients and charterers with a high quality of service. Shipping company must employ the best employees and develop their competence. In Bangladesh, companies in this industry are implementing few isolated skill development programs without considering that these practices are related with the holistic management of the employees. Any separate skill development program may not bear expected fruits. The entire skill development program should be viewed as holistic system approach of management. To keep company competitive in global market, management must concentrate more in effective recruitment and extensive training of employees.
REFERENCES


Problems and Prospects of E-health Card: A study in the Context of Bangladesh

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Paper ID: ICBM-19-0324

Abstract – The study focuses in the e-health sector in the context of Bangladesh. The objective of this study is threefold: first, to know the current situation of e-health card in Bangladesh, second, to identify the gap and third, to understand the future if e-health card in Bangladesh. This paper is based on related papers identified via different search engines. This paper focuses on the current status of e-health services and also on the future opportunities of this sector.

Keywords – e-health, m-health, Bangladesh, challenges

INTRODUCTION

Mr. Anis (Not his real name) had an FDR of 10 Lakh taka, which he inherited from his father. On one Sunday Morning of August (This year), he went to his local Branch of a renowned state sponsored bank (Where the FDR was issued). He was well prepared for transferring the FDR. In the night before, he prepared all the documents required to avoid the hassle. Upon presenting all the documents to bank official, the bank official informed (and surprised) him by informing that the old NID card was required along with the latest smartcard in order to execute the process. Mr. Anis became confused, as he believed that the new smartcard had all the information. Thus, the old one was no longer required. Nevertheless, he sought further explanation for the old NID card, as he forgot where he kept it. In response to which, he was met with a cold stare and a blunt reply – “It is required”.

Finding no other way, Mr. Anis went back home. For the next four hours, he, along with his wife searched, and luckily, found his old NID card. On the next day, Mr. Anis photocopied the old NID card and submitted the copy, along with other documents to the bank. Finally, he was able to have his FDR transferred.

This story of Mr. Anis is the story of countless other people of Bangladesh, who are suffering, simply because the government agencies have not completed their passage from NID to Smart card yet. As per the direction of Election commission, the Laminated NID card has become null and void from the month of June this year.

This story is an example of de-synchronization and miscommunication that prevails within the government agencies, which indicates the problems that we might face prior to the implementation of the much-coveted e-health card system in Bangladesh.

METHODOLOGY

This study began by identifying research question. The study is based on secondary data and the method followed is an effort to gather diversity of information focusing on the topic which is collected from a variety of sources.

i) Question Formulation

The authors took initiation on this topic through defining three intriguing questions: 1) what is the current situation of e-health card in Bangladesh? 2) Where is the gap? And 3) what can be done in the future to make Bangladesh ready for e-health card?

ii) Sources of data

Different papers were identified based on the topic via search engine for example, Springer, Google scholar, Journal of health informatics etc. for example as, e-health, telemedicine, tele-health, scenario of Bangladesh health sector and Current running e-health projects and then information has been gathered. After collecting information from different sources this study reviewed those documents about e-health and summarized that information on the initiation of Bangladesh e-health scenario and status. However, the following methodology is not a systematic review of current status of developing countries e-health.

iii) Analysis process

The authors analyzed the articles found by searching in various reliable online sources. Articles with related objectives and insights were studied in order to get a thorough understanding of e-health sector of Bangladesh. While studying the articles the authors only looked into the Bangladesh perspective to keep it concise and concentrated.

RESULT

i) Current scenario of e-health in Bangladesh

In Bangladesh the first e-health project was launched by Swinfen Charitable, a not-for-profit in 1998 and this year has been a milestone in e-health sector [1]. The Project was collaboration between the Royal Navy Hospital Haslar, in UK and the Centre for the Rehabilitation of the Paralyzed (CRP) in Bangladesh [2]. The Ministry of Health and Family Welfare (MoHFW) also initiated their first e-health initiative in the same year. [3]. In the following year a private company, the Telemedicine Reference Center Limited (TRCL), initiated the use of mobile phones for healthcare delivery, Bangladesh Telemedicine Association (BTA) established in 2001, provided a platform for the ongoing and sporadic e-health initiatives in the country.
The first initiative of e-health programs has been taken in 1998 when the Ministry of Health and Family welfare (MOHFW) took the supervision of Health and Population Sector Programs (HPSP) [3]. Currently based on a decade of experience Bangladesh is in the process of adopting a framework for e-health and m-health, [4]. Nowadays, it has been given a special emphasis due to the present government Digital Bangladesh Campaign [4,5]. The NGOs and private organizations have also started a specific numbers of e-health projects along with the government. All the sectors are trying to improve e-health infrastructure progressively. Initiatives like, pregnancy care advice via SMS, complaints suggestions via SMS, online population health registry, Geographical Information System (GIS) in health system etc. have already been in action[4].

A project for pregnant women and expecting mothers was launched by Directorate General of Health Services (DGHS) in March 2010 in Bangladesh. The purpose of this project was to ensure that mothers and newborn babies will get advice to improve their health condition. There was also an effective feature that had been added to the existing e-health project was complaints and suggestions through SMS [6].

In Bangladesh, mostly in Dhaka city most of the private hospitals and clinics are using their own database system for patient’s health records. For example, hospitals like Apollo hospital, Square hospital, United hospital, Medinova hospital and Popular diagnostic center are using individual database for each and every patient of them. The Apollo Hospital Dhaka (AHD) is a combined project of Apollo Hospitals India and STS holdings Limited. In order to create a connection between the patients, their family members, doctors, and clinicians, they use tele-health in their hospital management system and health care delivery, with a vision to provide them a better health outcome [4]. We can also see the automation of health services by Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM) through efficient queue management, evaluation of patients, updated nursing services, integration of laboratory and pharmacy etc. [7].

Along with the government, NGOs, private organization and mobile phone companies are also providing e-health services to their customers throughout the country [7]. Mobile phones company like Grameenphone, Banglalink and Robi has launched health link services for delivering innovative and convenient health care services for its customers [4]. Another e-health program, D.Net (Development Research Network) is providing health care services in the rural areas of Bangladesh through their telecenters located in those areas. Simply by using mobile phone, people can connect to the server located in Dhaka from the remote areas. [4].

“Manoshi” the e-health project of Brac also work for the community level people. In order to provide patients better health care services, people working as community health workers collect information and connect it to the headquarters [4,8]. In September 2011, The government of USA and Bangladesh launched “Aponjon” a telemedicine project Under the support of Mobile Alliance Maternal Action (MAMA) to provide mobile health services to expecting and new mothers of rural areas in Bangladesh. This project targeted to reach 2 million mothers by end of 2015[7].

ii) Obstacles in Bangladesh

Though Bangladesh has a number of projects based on the e-health sector run by government along with private organizations, private hospitals and NGOs, there are some gaps that come in between the planning and implementation of these projects. In order to provide access to health care providers, care management and education e-health requires a range of technologies including computers, wireless communications [9]. m-health is the subset of e-health that delivers such services via mobile phones [10,11]. Through information and communication technology e-health and m-health facilitate provision of healthcare [9]. For ensuring e-Health and m-health based service delivery through consultation via call centers and SMS in the country, telecommunication is the predominant technology. A substantial proportion of the population (in October 2012 it was 98 million [12] approximately two-thirds of the total) has physical access to such teleconsultation. The combination of internet and mobile technology is the mostly used combination by the commercial and more clinical initiatives [12]. Activities like raising health awareness, providing electronic prescriptions, creating vaccine registries; using videos & still images for diagnosis etc. are covered using the information technology. As till now there is a lack of strong internet connection in the remotest areas, although having e-health projects, people from every corner of the country is not likely to get advantage of it.

Another gap or challenge e-health sector facing is governance mechanisms, existing strategy and policy documents. Currently in Bangladesh, there is no standard or widely accepted operational framework for e-Health or m-health in the country.[12] With this lack of framework, assessing the comparative health gains, e.g. percentage of people with access to e-Health/m-health services or attributable change in national health indicators, etc. is very difficult. Furthermore, absence of working collaboration between the ministry of health and the ministry of ICT is resulting in a vertical approach to the implementation of projects [8,9]. Absence of legal and ethical frameworks for e-Health, for example relating to personal health data, internet safety or equity is also regarded as a gap for e-health to flourish in the country. Practical indicators need to be created to measure and assure the quality of e-Health and m-health services.

Sufficient financing to run e-health project is also a challenge or gap faced by the sector. In e-health and m-health, financial management is largely met by donors either directly or through management agencies [13]. Those finances are meeting expenditures for activities on health ICT and the associated capacity building.
collectively. The national health budget finances Government e-Health and m-health projects. As the success of the projects depends on the ICT, it also received a collateral allocation (approximately USD 38 million) from the Ministry of Information Communication Technology (national budget, 2012–2013) [14, 15]. However, the exact share remains embedded, allocated for e-health and m-health. Nowadays Public-private partnerships are being allocated e-Health and m-health projects. Swinfen Charitable Trust, Rockefeller Foundation and Johns Hopkins Bloomberg School of Public Health are the members of donor groups.

As indicated, e-Health and m-health is largely dominated by private for profit entities and thus not dependent on the donors. However, only four initiatives reported sustainability plans during our survey. Further discussions revealed that since As sustainability is linked to financial profile (i.e. profit, expenditure, tax), and commercial enterprises are unwilling to share such information publicly, there is no exact evaluation of the finances allocated to different projects. Hence, the implementation of the projects and the continuation seem to be very difficult.

iii) Scopes In Bangladesh:

E-health sector can be popularized by providing training concentrated the use of e-health system as most of the doctors are not familiar with this concept and the benefits of it[12,13]. Moreover, as there are public and private hospitals that are adapting e-health policy, they can train the doctors, nurses as well as the patients to make them familiar with the recent concept [14]. They can train them during the implementation phase so that people can adapt with e-health. In order to make e-health a part of daily life, user friendly demand-based customized system can be introduced [13]. Moreover, by raising awareness about e-health systems in different public and private hospitals is also a scope to get people familiar. Successful project means involving all the stakeholders of e-Health projects like Government, private organizations, NGOs, e-Health projects are expected to succeed. Different types of seminars, advertisements in radio and television along with the promotion in online media can create the scope to popularize e-Health sector [14, 15].

With the growing investment in ICT and the telecommunications industry, a substantial diminution of ‘technophobia’ has been seen among the general public [15]. It has also improved access, especially for the poor [15]. In both developing and highly industrialized countries, e-Health and m-health initiatives are steadily emerging with rising acceptability, though with variable and sometimes counterintuitive outcomes. For example, In Madagascar, as SMS based system substantially improved disease surveillance [16], whereas recently the highly sophisticated UK National Health System had to abandon a major national IT program to centralize patient records in midcourse [17, 18]. In Bangladesh, WHO reported that despite not providing messages in Bangla, the MoHFW reached 98% of its target population through SMS on health education [13]. One needs to be careful about the challenges in terms of “evidence, sustainability, human resources, funding, interoperability, ICT infrastructure, legal and ethical constraints, despite the glorified prospects for ICT in health systems,” [18]. As ICT is emerging with the fastest internet connection countrywide, the successful implementation of e-health is possible in Bangladesh. Implementation of widely accepted framework will open the door for e-health sector.

DISCUSSION

According to the health bulletin of DGHS, published in 2017, Bangladesh has in total, 48,725 private hospitals, clinics and diagnostic centers and 29,973 secondary and tertiary health centers. However, a study conducted by Asia Pacific Observatory on health systems and policies revealed that no specific written policy exists for MIS in health in Bangladesh, even though the country has a legislative framework. This may result into a Healthcare information system that is severely disjointed, and might result into a fatal outcome for the patients, whose data may not get updated properly due to misunderstanding.

Throughout its tenure, the government took several formidable initiatives to improve the technological infrastructure of the healthcare system of the country. One example dates back In May 2009, when ministry of health introduced m-health. This system provided each of all upazilla hospitals and district hospitals a mobile phone to act as a local call center for delivering medical advice as 24/7 basis to the citizens.

e-Health is steadily becoming a popular platform globally for healthcare delivery [20] and Bangladesh is no exception. Since the late 90’s a number of initiatives have been implemented in order to embrace the new health care services. The main focus was to enable the rural and underserved communities to overcome geographical boundaries focusing on mobile phones. According to WHO, Bangladesh as one of the 15 countries using m-health to raise health awareness [13].Regarding the role of e-Health and m-health there is still insufficient evidence in improving access to and/or affordability of preventive, curative or rehabilitative services [19].

However, simple implementation can hardly bear fruit, if there is a lack of technologically adaptive and educated population- e-health card is no exception to this rule. National learning assessments conducted by the Government of Bangladesh show poor literacy and numeracy skills among students – only 25 percent to 44 percent of the students in grades 5 through 8 have mastery over Bangla, English and math, and performance on these measures is especially low among poor students. The World Bank Enterprise Skills Survey supports this data by presenting the belief that graduates of Bangladesh’s higher education and training programs are inadequate for today’s and tomorrow’s labor market. This snap view might explain why Bangladesh is ranked 147th out of 179 countries in the ICT development index, published in 2017, despite of having an internet penetration rate among four crore population of the country, as presented by Google.
Such contrast only leads to an indication that, even if the necessary infrastructure is successfully developed, very few people will have the necessary knowledge to reap the full benefit of e-health card.

CONCLUSION

Bangladesh is still facing issues with its undeveloped health care and information technology sector. Bangladesh Government is trying to improve the quality by taking massive plan to improve respective sectors. Government has developed e-Health systems as an initiative. Along with the government, the other stakeholders like private organizations, NGOs are also trying to provide different e-Health services to the citizen. In order to provide health service using ICT, service recipients’ view towards these services can arise as an issue. The overall situation of e-Health in Bangladesh is good but unfortunately not adequate. In this respect, it can concluded that easily and widely available and a quality ICT based health care service by the service provider throughout the country have to be built. Research on application of e-Health in Bangladesh by the researchers also can be taken in account to make e-health sector a part of day to day life.

REFERENCE


A Descriptive Analysis on the Effect of Advertising on Children

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Abstract – This descriptive research addresses the effect of advertisements on a specific demographic - the children. The intensity of the mentioned matter was validated through observation done on a smaller sample. After analyzing the nature of the problem, some key criteria were set which played an integral part in the conceptual understanding. By focusing on different ages- the variation in personality of the children was a major element in order to conduct the research. Not only the strategies of the advertisers made a long-impact on the children by altering their perception- the way the children were brought up was also an indicator of the processing of the information shared by the advertisement. Therefore, the research shows that there was not a single “impact-creating” element; rather it was the surroundings and some strategies which prominently affected the children. Therefore, the research portrays the reality of the children getting attracted towards advertisement and being affected by the exaggeration, exploitation.

Keywords – advertising, children, exposure, advertising strategy, exaggeration, age group, information processing

I. INTRODUCTION

In the 21\textsuperscript{st} century, advertising is also known as the tool for explanation, exploitation and exaggeration [1]. The concept of advertising started with the emergence of trading system. Furthermore, the signs of advertising property could be found from the time of ancient Rome and Pompeii. When the sellers wanted to let people know about their products and attract buyers, they tried to adopt different techniques in order to captivate the buyers. The word advertisement or advertising derives from the Latin word “Advert” which simply means to “make people aware”.

In ancient times, when people had no access to printed or broadcast media, news would reach people by messengers [2]. The messengers would read the news from scrolls and sometimes by adding some music; they would notify the locals about the announcement. With that practice and some modernization, the era of advertising began. After the World War II, the process of advertising was accelerated. Therefore, people started to embrace different ways to capture the market. Gradually, people got to know that the consumers have a certain purchase behavior which indicates that people are more connected towards the representation of the product rather than the actual product. For example- back in the year of 1924, Marlboro was founded as women’s cigarettes. Afterwards, when people got to know about the harmful effects of cigarettes for women, the sales started to drop. That is when a different strategy was used. Marlboro introduced a rugged character like the “Marlboro Man” in order to target for different segment. After the introduction of Marlboro Man, people started to think that the brand has an image of masculinity rather than a feminine one. At that time, it was clear that people were not attracted towards the product rather than the characters or the thoughts associated with the brand. In this case, the Marlboro Man himself was the icon who changed the thought of the people. So basically, audience was connected with the robustness of the Marlboro man rather than the cigarettes. The interpretation from this incident was pretty clear stating the fact that the presentation of the product meant more than anything. That is when the effect of advertising made an imprint in the mind of marketers. It was quite inevitable that when people can connect to the attribute of the brand- they will purchase the product and thus their purchase pattern will change. So, gradually the whirling of concepts began to take place in the colorful world of advertising.

II. BACKGROUND

The force of globalization has affected the purchase decisions of consumers in a great manner [3]. With the blurred boundaries of different countries, there was variety of products from which the consumers could decide. That is when the marketers felt the need to prioritize their consumers in every possible way. Therefore the companies started focusing on their product quality and also their segments. With the introduction of the segmentation, the marketers started finding the needs which were hidden in the subconscious minds of consumers.

The best way to make people agree about their untold need was to present the product or service in such a way that people will actually start to feel the absence [4]. Such learning process was created by incorporating different persuasive techniques. The moment the different types of personalities were aligned with the different types persuasive techniques- people were eager to make a change in their purchase decision.

The moment marketers discovered the tactics of serving different segments with different offerings- the advertisements were changed accordingly. Gradually, the advertisements were created in such a way that would portray the needs of individuals rather than mass marketing. These segments of people included- kids of different age, male, female of different age and income level as well. Even though it is unlikely to target the kids...
in the first place, however, the marketers had something else in mind.
In this competitive world, every individual is considered to be the potential customer [5]. It is more like- today’s observer is tomorrow’s buyer. This observation process is influenced by different ways. Where the adults are more towards the rational decision making in case of different purchase decision, the children have totally different perspective towards such observation process. It is predetermined that the children do not have the ability to go through the rational decision making process. Even after that, these children possess the most influential power on their parents’ purchase decision. This is the gap that the marketers identify and so they target the children in a different manner. The designing of the promotional tools and media mix follows the child psychology and so the advertisements through different media get the attention of the children.
Hence, the conducted research focused on the ways how advertising actually targets the children and how the children build up their attitude towards the advertised message and the product. On the other hand, it is equally important to give emphasize on the factors which are responsible for the alteration process about different products into the minds of the children.
It is prominent that children are very much vulnerable when it comes to the exposure of advertisements. Since they have different attitudes towards the product and ad showed- it is very important that they get the proper explanation of ads so that the interpretation is not in other direction than the anticipated one by the children. It can be pointed out that the parents are quite aware of the problem caused the exploitation of the advertisement because the result can be noticeably seen in the children’s behavior.

III. RESEARCH QUESTIONS

Research Questions
In order to find out the magnitude of the effect of advertisement- there were few questions which were pre-set so that during the observation done on the children- there was a definite path to follow.
Q1: Is advertisement really viable to create an impact on children?
Q2: Does the effect of advertisement vary from age to age in case of children?
Q3: Apart from age, are there any other factors or forces which influence the process of interpretation towards the ads by the children?
Q4: Does advertising influence only one aspect of the children’s behavior? Or there is holistic impact because of it?
Q5: Is the content showed in ads powerful enough to influence the lifestyle of the children?
Q6: Can advertisement be hold responsible for making children obese?
Q7: Can advertisement evoke a “desirable attitude” among the children towards a specific brand?
Q8: Does advertisement use the children as “intermediary viewers” in order to arouse the purchase intention of the parents?

IV. RESEARCH OBJECTIVES

In any marketing campaign- there are few steps to follow sequentially. Therefore, when it comes to grabbing the attention of the target customers, there are infinite techniques which can result in creating a buzz for the product. Here rises the contradictory statement which questions about the effect of those strategies on different ages. Therefore, the observation on respondents aims towards finding out whether the advertisements have any impact on different age groups or not.
As the rational decision making process varies from person to person, the information processing capability also differs within different age groups. Therefore, one of the objectives of the research is to find out the level of impact creation by the advertisements.
Even though age is an important indicator in order to measure the effect of the ads- however, the literature supports that the way a human being interprets the information also varies because of their social upbringing, personality, lifestyle and most importantly family. Therefore, the objective is to find out which factor influences the most when it comes to the interpretation of the ads.
After scrutinizing the significance of the demographic, behavioral and psychological factors- the farther objective is to find whether the changes in these mentioned factors lead towards creating a long-lasting image of the brand into the minds of the children from such an early age. Additionally, the objective is to find out whether the advertisements are creating a strong customer base by capturing the children who are supposed to be the potential buyer in the near future. With observing the changes in the children’s, the farther purpose is to know whether the parents are changing along with their kids’ or not. All these objectives being interconnected to each other aim at finding whether the ads have been able to imprint the noticeable impact into the fresh minds or not.

Literature Review

Primarily, it can be stated that children or kids usually do not have the purchasing capacity in case of buying any product. Even after this, they are considered to be the primary market that will influence their parents which will eventually end up as directing the spending pattern of the parents. Considering this, the advertisers analyze the children’s lifestyle, behavior, personality, preferences, motives and the way of spending leisure time. The more the marketers dig deep into the untold needs of the children, the more they successful to represent the product in front of the kids.
The action towards such uncertainty of capturing the attention of children indicates towards a visionary plan which is- “IMPRINTING THE BRAND IMAGE INTO THE MIND OF CHILDREN WHICH WILL MAKE A
SECURED CUSTOMER BASE IN THE NEAR FUTURE”. The process of getting into the minds of children can be compared to a steady stream of attracting future consumers. The more the ads are made considering the fancy elements, the more children are attracted towards these and end up pursuing the parents to buy for them.

V. LITERATURE REVIEW

Exposure to Advertisements through media and stores

With the rise of Barter system, people started to feel the importance of letting people know about their products which was back in 9000-6000 BC [6] Within the year of 1441-1850, the age of print was acknowledged. Therefore, people related with the Barter system, found a way to advertise their products through the print media. Hence, the process of trading got accelerated. Today, the revolution of the information technology has quite changed the image of the past. For example, before going to the retail stores, children are exposed to the glittry and glamour world of advertising through different media. As a result, the children make up their mind even before visiting the retail stores. Not only the television has its charm on the children, ads through YouTube, radio, magazines, newspapers, comic books, different apps, advergames, social media- also strike the children’s minds. In the recent times, marketers also grab the opportunity of introducing advertisement with the online games and videos. The moment one person clicks on the video, after some time there is 5 seconds pop up ad which ultimately grabs the attention of the audience. Even after that, there is repetition of ad which makes the audience remember the advertisement. Exactly same process is used in terms of playing online video games. The concept of advergames is mostly the combination of ads and games where the ad is sponsored by some company and on the other hand, the game is used as marketing tool.

Concept of advertisement getting into the mind of children

In the very beginning, the stores were the most important medium in order to make customers know about the products. Therefore, marketers, more specifically advertisers- came up with different tools and techniques which attracted the children in a far different way. Because the children possess the spending influencer power, purchase influence which is basically an indication towards a prospective customer base [7] Following such, the marketers started to prioritize the children’ mentality and so incorporated different fictional characters along with catchy jingles which will work as reinforcement in the children’s mind. Such targeting was clearly indicating that marketers thought that children will be their next potential customers. Afterwards, their effort towards attracting the children got accelerated.

The process of getting into the minds of students started with the integration of television in the daily life. Not only that, within 15 years, the mobile phones have come out of the luxury lists and made place in the essential lists [8]. As a result, in the recent time, every child is exposed to the imaginative world of advertisement through internet, television, magazines, billboards, radio in an extensive matter. Young kids are bombarded with the persuasive messages provided by the advertisers. Such impact of persuasion can be seen intensively when it comes to food advertisement. The false connectedness of various cultures showcased on the advertisements also arise some fascination regarding the food cultures of other part of the world. Hence, it is quite obvious that the traditional food pattern will indeed change for children. Even if the change is not notable for the time being, however, this shows that the convincing power of children definitely gets swayed. That is when the problem arises. With the fabricated presentation of food items on TV- children have different way of perceiving those advertisements, because not everyone has the same capacity to analyze the advertisement in the same pattern.

According to an Australian Parenting Website there are different methods for the interpretation process of children who belong to different ages. The research by Raising Children (2018) supports that, up to 3 years, the children think that all the characters, objects showed in the advertisement actually exist in real life. Therefore, whenever they see a falling thing-they believe that that might break and also come out of the television. At this age, children start to build representational and symbolic thinking which means that they only can focus on what they are seeing rather than trying to find out the reason behind it. From this age, the kids start to prioritize the fictional or cartoon characters as their safe playmates. Therefore, whenever they see the presence of their “imaginative playmates” on the product through advertisement- they try to induce their parents in order to buy the product.

Secondly, the children falling in the age range of 3-6 years start to develop their thoughts and so they can understand the difference between an actual program and advertisement. These kids do realize that the products shown are meant for some reason. However, they are not so judgmental and critical when it comes to interpret the ads. The central point regarding this age group is that the children start to be farsighted and have binocular vision which gives them a good insight of the things represented. Thirdly, the difference between the previous age group and the age of 7-11 years is that the latter group has an upgraded level of complexity which means these children now try to make a connection among their imagination and the realistic. As a result, the kids falling in this age group realize that the advertisements are actually trying to sell something. They even try to remember the messages delivered in the ads. They start to believe the advertisers’ claims about a particular product being good. Therefore, their influence power on their parents increases even more. Even after such reformation in the thought process, the children are usually unable to make a defense mechanism when it comes to differentiate the right and wrong in case of a product attribute. So, they cannot question the objective of the advertisements which results in falling for the fabrication.

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Fourthly, between the ages of 12-13 years old, the children fully understand the objective behind advertisement which is selling. However, the fact that advertisement makes the product look expensive and stand out- it still remains unknown to them, because the kids cannot figure out the strategies used in the advertisements for the product. On the other hand, the children aging from 12 to 13 years old form a habit of definite preferences in case of any subject matter. Therefore, it becomes salient that advertisements actually give a direction in case of purchasing the product they want. And so, without looking for the substitutes, the children go for the products that they find attractive in the advertisements for which they keep on bugging their parents.

Fifthly, the children over 14 years get to be aware of the marketplace and as a result, they are well aware of the selling process being affected by the advertisements. However, the way that the advertisers draw the attention of the children by making the “dreams meet reality” scheme, the halo effect makes the children unable to distinguish between right and wrong.

VI. RESEARCH METHODOLOGY

After scrutinizing the existing literature review and as per the expected objectives- an observation was done on a small sample of children. Therefore, the retrieved data was from both primary and secondary analysis. The observation led to the following results:

Observation on Respondent #1:
The child aged 9 years old. After coming back from the school she had a tendency to watch her favorite cartoon on TV. While watching, she had to see different ads of different products. But the attention towards the ads was not equal. The ads which incorporated popular cartoon characters and emphasized on the imaginative world- were more successful to catch the interest of the child. As a result, the latter part for the child was to convince the parents in to buy the product so that she can have it real life rather than watching only in the television.

On the other hand, the technique of repetition also worked on this child. The more the ads were played; the more the child remembered the brand name and rhymed the jingle as shown on TV. If she was unable to understand what the product was- she would ask her parents and as a result, the parents got interested to know more so that they can give the answer to their child.

Observation on Respondent #2:
The kid was 11 years old and did not watch TV that much. However, being attracted towards online games which can be played as multiplayer and finding players from every corner of the world, this child was exposed to ads within the games termed as the Advergames. Even though the ads of traditional broadcast media did not influence much on the kid, the ads between the games and the ideas shared by the multiplier around the globe- made the child more aware about the attractive marketing strategies and so this ended up convincing the parents about buying the particular instrument needed for the game. The main thing about these Advergames was- they did not portray any product which can be included as necessity. But they sure did introduce the fancy things which could be used while the player was playing. As a result, for the child, the purchase intention fell under the “co-purchase” concept because while buying that product he wanted to go with his parents and buy the product.

For example, after finding out that “X” brand had launched a fancy headphone which could make the contact among players even easier- the kid forced his parents to make the purchase so that the connection among the players is smooth, more specifically without any disruption.

Observation on Respondent #3:
The observed kid was 15 years old who showed a tremendous “vulnerable attitude” towards the ad model regarding any product. Falling under the teen category- this kid started to have reference groups which included different spokesperson, endorsers, YouTubers and gamers. Therefore, following the reference group this kid built his own choices after watching the ads which could give him popular identity as similar to the desired groups. It was quite prominent that whatever ad could give him the image of his reference group- he would search for more ads in order to find the best product in a reasonable price. Even this kid bought the things by himself since he had some pocket money given by his parents. In this case, the behavior of the teen kid depicted the concept of “Solo Purchasing”.

It has to be mentioned that- the advertisers, or especially the marketers studied a lot about these rising market and hence they knew about the preferences of this age group. Hence they related their expectations with the product which actually was aligned with the kids’ desire.

Observation on Respondent #4:
The observed kid belonged to the age group of 15-16 years old who did not get any pocket money because of the restrictions followed by the parents. The parents believed that the given money would end up in unnecessary spending by him. However, being influenced by the fancy advertisement shown, the child tried to convince his or her parents even though the parents did not have the affordability. But the parents did not want to disappoint their children as well. Therefore, whatever the demand was, they tried to fulfill it by finding a substitute. Even though the child was not satisfied getting the alternative, however the purchase of another option made him happy.

VII. FINDINGS

The observed 3 children were the representatives of thousands of children. Therefore, the effect of advertisement was not only “how the information is processed”- rather the way it ended up influencing the purchase intention and purchase capacity as well.

It has to be mentioned that- the advertisers, or especially the marketers studied a lot about these rising market and hence they knew about the preferences of this age group. Hence they related their expectations with the product which actually was aligned with the kids’ desire.
As for the difference in age group, the children showed different behavioral pattern. In the first place it was showed that the smaller children take place in the selection process of making purchasing decisions. Therefore, the small children just select the products they want their parents to purchase. This selection process is therefore influenced by the vibrant advertisement. The more the children are attracted, the more they try to convince their parents to make the decision. As a result, it becomes prominent that the advertisers were quite successful in case of their persuasive technique. Similarly, the differences in age show how children start form a co-purchaser and then they become the buyer. Therefore, attracting the children is more like a process which aims at having stronger customer base. Even though the initial purchase is made by the parents, however, in the long run the children do possess the purchase power.

VII. ANALYSIS

The observation done on the children of different ages clearly showed that the effect of advertisement is quite noticeable since these children show a different attitude once they are exposed to the advertisements. Each and every time, the advertisements shown on TV, media and Advergames, were able to grab the attention of children and create a purchasing tendency among the parents. This showed how much thorough research has been done in order to grab the market.

It is very tough to evoke a sense of familiarity with products into the minds of children. Even after such difficulty, the marketers, more specifically the advertisers are able to prioritize the interest of children and end it with an action of purchasing the product.

It must be mentioned that in the process of consumer socialization which means the way young people gather the knowledge about different object- this process has been well analyzed by the advertisers depending on ages. With different strategies the advertisers get into the mind of young people which remains for a noticeable period of time.

VIII. RECOMMENDATION

In order to survive in the competitive market, the advertisers will definitely come up with fancy things in order to stand out among the many [9]. To get rid of all the lies, the catch is that- the parents of the children can follow different strategy which will strike a balance among the children’s exposure to advertisements and designing their preferences. For example, the parents can present the link between the products and advertisements while discussing the shown strategies with their children. Therefore, once the children are aware about the reason behind such exaggeration, chances will be less where a child forces his/her parents to buy the product. Also, the children will have the idea that the inclusion of the fantasy world; simply indicates towards attention purpose and the sometimes reality does not resemble the things showed on advertisements. The explanation to those children will

Secondly, in today’s world there are several options of recording a program of TV and watch it later on so that the children do not get much influenced by the advertisements. Therefore, limiting the ads will be an effective step. Advertisers have their solid research on the children’s demography, preferences, lifestyle which actually enables them to establish awareness among the children. However, the importance of being ethical in terms of producing an ad remains undeniable. This ethical attribute can be shown by providing reliable information and mentioning about the exaggeration part which is usually for creating awareness.

IX. CONCLUSION

This observation and the research clearly indicated that there is prominent evidence of advertisement effecting people. Likewise, it becomes equally important for parents to intervene in the information interpretation process so that the children have a better understanding about the strategies used in the advertisement. It is undeniable that children have a different cognitive skill which is not similar to the older people [10]. Therefore, the commercial messages showed by the advertisements on TV are not captivated by them like the way it should be. But that is when the question arises- whether the advertisements should take advantage of these gaps and try to push the kids into the world of fantasy and imagination. Therefore, there are certain limits which the advertisers should never cross. After all, the advertisements are the tool to create impression and not manipulation.
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The significance of Bengali Translation/Interpretation of Names of the Stores in Dhaka and its Effect on Consumers

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Abstract – In the recent year the shops in Dhaka have undergone some noticeable changes regarding the translation of brand names into Bengali. Such change has some positive and negative impacts on consumers’ minds. The reason behind such contradiction lies on the accuracy of the translation. The brands which translated their brand names as per the sound to sound pronunciation, they changed the meaning. On the other hand, the brands which actually translated their brand names into the original meaning of the English named brand- they seemed to have an opposite impact on the consumers. Because of not following sound to sound pronunciation, the consumers’ attitude towards the brand changed in a significant manner. Rather than thinking that the Bengali translated name stood for the same brand, the consumers thought that the new translation was an indication towards a new store. Therefore, such experience received from the surveyed consumer was prominent evidence that the language has an important impact on people’s attitude and behavior. This research will pave the way for marketers in order to have a significant idea regarding the importance of translation into the minds of Bangladeshi consumers.

Keywords – Interpretation, translation, marketing, consumer behavior

I. INTRODUCTION

In order to analyze the significance of translating the brand names on consumers mind, the primary and the secondary data were aligned with different marketing theories. Therefore, it can be realized that language has an important impact when it comes to consumers’ attitude and behavior. Sometimes the brand name itself works as a learning process because that is how consumers know about the attributes of the product [1]. However, once there are different stimuli responsible to alter the consumers’ purchase decision that is when the consumer becomes loyal towards the brand. Gradually, that consumer develops an attitude towards the brand element along with the brand name [2]. That is when consumer behavior can be analyzed through different theories and so marketers adopt different strategies to capture the bigger portion of the market by incorporating different elements.

II. METHODOLOGY

In order to know the impact of the translation or interpretation of brand names on consumers’ mind in Dhaka, both primary and secondary research was done in order to do an in-depth analysis.

As for the primary data collection, a survey was done on 35 respondents in order to know the consumers’ perspective on such a recent topic. The primary survey contained 8 questions which were a mixture of close and open ended questions. In case of close ended questions the surveyed consumers were required to express their opinions through likert scale. The likert scale gave the holistic idea about how the consumers are taking the concept of translating brand names into Bengali.

The second part of the primary research was done by asking questions to a regular consumer of Noir- which is a clothing brand. As Noir translated their brand name into a different one as “Noah”- it was important to ask whether any consumer raised any question regarding that.

As for the secondary research, different articles and journal were used as reference. However, as the topic of “Interpreting brand names into Bengali” is a very recent one- hence, there was not enough research work on Bangladesh’s perspective. Hence, to solve this dilemma, the articles which belong to Asian perspective were referred more in order to have a realistic view on the chosen subject matter. This report shows the combination of primary and secondary research which have helped to provide authentic data.

III. LITERATURE REVIEW

3.1. The impact of Brand names on consumers’ minds:

Each and every brand name possesses a unique meaning which creates a different image in the consumers’ mind. With such an important element, the brands maintain their distinctiveness [3]. Therefore, it is believed that brand names are the symbols of trust, quality and specification of a commodity or product. So whenever people watch the brand’s logo and name, they relate to something very meaningful. This meaning is an indication towards the image that the particular brand has imposed on its consumers’ mind. So, in order to capture a place in consumers mind, having a relevant brand name is inevitable.

With the fast paced globalization process, brands are going beyond the boundaries. That is when the need for interpreting or translating the brand names become important as per the region [4].
3.2. Reasons behind translation:

To compete in the international market, it is very essential that the brands focus on their brand names [5]. Even though it becomes challenging to transform the brand name into another language by maintaining the original meaning, charm and connotation, however, brand should never compromise with this process. The reason is the procedure of translating name is basically re-creating the brand among the particular group of people. So, to retain these markets, it is absolutely necessary to give importance to the individual cultural background.

As a result, the brands have to revolve themselves according to the prevailing norms, cultural beliefs and change themselves as per the expectations of people. In this process, the brand names play a major part in case of letting people know what they are providing. In order to do so, the first and foremost thing is to translate the brand names by keeping in mind about the cultural sensitivity. The main reason behind the brand name is to reach more people and making the brand identifiable among people.

3.3. The impact of correct translation on consumers’ minds:

For a brand to survive, it must have a good impact on consumers’ mind starting from the brand name. That is how international consumers get the idea of the brand. Additionally, the language or the brand name is responsible for shaping the attitude and behavior of consumers [6]. Hence, a brand name which translates its name into a meaningful one retains its position in consumers mind, and their successful transformation is seen when consumers visit the stores and their purchase decision is influenced.

3.4. The impact of incorrect translation on consumers’ mind:

Some brands do not comply with the rules which are associated with culture in case of the target language [7]. As a result, people do not understand the translated brand name and they end up avoiding the brand because of wrong interpretation of the brand name. Therefore, it is very important that the translation of the brand name is done in an accurate manner. It can never be denied that language has significant impact on consumers’ attitudes and behavior.

IV. RESULTS

From the survey done on 35 respondents, the following results were received.

Noticing the change of translating the brand names into Bengali

Brand or store name is considered as a first sign of identity for all of us. It not only provides an identity for a product but also it distinguishes a product from its competitors. These concerns create an urge to translate the brand name into the local language. Therefore, the first question was asked to the respondents whether they notice it that most of the brands or stores in Bangladesh are translating their English brand names into Bengali ones and in this question, 18 out of 35 people agreed that they are noticing that most of the brands or stores translated their English brand name into Bengali one. Moreover, 8 people agreed strongly about noticing Bengali translation of English brand name.

Translation making the complex brand names sounds easy

In the next question, respondents were asked to respond to the question of whether the Bengali translation beside English helps them to pronounce the complex brand name easily or not. In this question, out of 35 people, more than 15 people said that it helps them to pronounce the brand name easily. As Bengali is the mother tongue of the Bangladeshi people so it actually helps people to pronounce the store name when they see the store name in Bengali beside the English one which creates a favorable perception about the brand or store.

Remembering the brand names through the implication of Translation

The third question was whether the Bengali translation let the customer to remember the brand frequently and 14 respondents out of 35 respondents marked neutral as their response that indicates that remembering the brand name to some extent because of the translation of the brand names into the local language. In addition, almost 8 respondents agreed that Bengali translation of the English brand name assists them to recall the brand name frequently.

Translation changing the meaning of the brand

Some brand names are better suited in English where some are better suited in Bengali. So, when some brand names are translated to Bengali it becomes irrelevant or loses its meaning. For the survey, one of the questions was set to whether the translation into Bengali from English has somehow changed the meaning of brand names. According to the responses about 16 people said that they were neutral and did not think it affected the brand in any way. 8 people agreed that it changed the meaning and 7 disagreed to it. It can be seen that there were mixed responses. If it is related with personality theory it can be seen that according to the acquired data it did not match with the responder’s personality, their style of life when the names got translated to Bengali and to them the translation caused the brand name lose its original meaning but some of the translation worked well and so they disagreed to it.

Noticing the change of translating the brand names into Bengali

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Recommending the brands after translation

The question stated whether the ease of pronunciation made the responders recommend the brand to others. As people tend to lean towards substances and shows interest in them when they can easily pronounce them. It works when it comes to recommend the product to others as well. If it was related with attitude of consumer behavior being able to pronounce the name of brand leading to liking the product after trying it and also introducing the product or brand to others because it was easy for the person to pronounce- the survey result showed that 5 of the responders voted that they fairly recommend the brand to others based on ease of pronunciation. 8 people said that they very often recommend the brand and 7 said they never suggest a brand based on ease of pronunciation.

Preference of shops having Translated name

The responders were asked if they preferred shopping from the shops that have Bengali translation. English billboards of different brands are not new in Bangladesh and most of the citizens are quite used to having and consuming products having English brand names. Then again many people have trouble with brand names in English as it causes hindrance for them to fully understand or pronounce which sometimes causes them to avoid going to places with English names. And from the survey conducted for the report it was found that 9 people do not prefer shops with Bengali translation beside them, 7 people said they occasionally prefers shops with Bengali translation, 6 said very often.

People’s perception and attitude towards translation of brand names:

The survey done on 35 respondents showed that different people had different concept about the translation. Some were actually satisfied thinking that this policy might be effective. Whereas, some other thought that the translation was not needed at all. Even though people believed that the translation might be easy for some people in order to read, they also mentioned that in case the brand names were not translated accurately, it would do more harm to the brand.

Examples of Translated brand

The respondents were asked to give some of the worst translated brand names. The results were:

- **Hyundai Motors Bangladesh Ltd:** হ্যুন্দাইমটরস্বাঙ্গালাদেশলাদিমিটেড
- **Peogeo:** পুঁজো
- **Mahindra:** মাহিন্দ্রা
- **Mercedes Benz:** মার্সিডেজবেন্স
- **North End Coffee Roasters:** নর্থইন্ডিকফি রোস্টার্স

V. DISCUSSION

The sudden change in brand names by translating into Bengali has made people exposed to every brand. This exposure is not only as a positive impact but negative impact as well. Because, the brands which are not translated accurately, the image has been hampered into the consumers’ minds.

The report shows that the translations do not help much in order to recommend the brand names as well. However, in order to follow the Government’s policy and adopting the trend of translating the brand name should be done in such a way which will not harm the brand’s reputation. Either the brand name can change in the respective regions or the translation has to be which is meaningful in a specific culture.

When people are buying form the specific shops, the packaging must be done in a way which will indicate towards the fact that the translated brand names are of the same shops. Even though it is harder to translate from one language to another, however the marketers can talk to the experts of that language in order to keep the meaning of the original brand untouched even though the name is being translated [8].

VI. CONCLUSION

It can never be denied that language and translation have significant impact on consumers’ attitude and behavior, because each and every time when the brand element is altered as per the current demand, the consumers start to have different perception about the brand [9]. Therefore, in the communication process, the marketers should make the consumers aware of the matter through their packaging stuffs and making the visualizing elements even more aligned with changing or translated brand name [10]. As a result, the consumers can relate with the changes made and thus the brand image will not be hampered. This study ultimately indicates towards knowing the effect of translation in consumers’ mind. Since this is a new topic, this will pave the way for marketers to imply the applications of the translation in a better way. Also it can encourage other researchers to start working on the recent change in Bangladesh.

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412-432.1948 THEORY AND PRACTICE IN LANGUAGE STUDIES


Celebrity Endorsement in Advertisement: A Study on Consumers’ Perception for Selected Personal Care Products in Bangladesh

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Abstract – Endorsing celebrity in advertisement gained attention in recent years to strengthen the brand image and attract the attention of the consumers in the highly competitive market. The purchase decisions of Personal Care products can be based on several factors as they are frequently purchased and are low involvement items. This is an empirical study that aims to identify the factors in celebrity endorsement that affects consumer’s intention to purchase personal care products. The data has been collected from a total of 568 women from Dhaka city using a self-administered structured questionnaire. The questionnaire was reliable as the reliability score indicated was 0.903. Different statistical tests like Cronbach Alpha score, KMO test, Berlet’s Test of sphericity have been done. On doing exploratory factor analysis it becomes evident that there are some factors like celebrity reliability, celebrity attractiveness, celebrity congruence, purchase intention of consumer are significant for influencing consumer perception on celebrity endorsed personal care products. This study will guide the marketer to formulate appropriate strategy for advertisement and will ensure effective investment for celebrity endorsement by focusing on their target market. Further research can be done using confirmatory factor Analysis (CFA) or comparative study can be done based on gender.

Keywords – Celebrity endorsement, Advertisement, Consumer perception, Personal Care Product, Bangladesh

I. INTRODUCTION

In recent years the celebrities are increasingly presented in all kinds of advertisements from primary goods to luxury ones in the purpose of strengthening the brand image, creating a psychological attachment with the customer and thus creating a long term brand loyalty. [1] It is estimated that more than 25% of advertising campaigns in the USA used celebrities [2]. On the other hand, approximately 45 percent of all televised commercials feature celebrities in India [3]. By comparison, the more extensive use of celebrity endorsement has been reported in Korea and Japan where over 70% of TV commercials feature celebrities in one form or another [4]. About 10% of advertising budgets were allocated to paying celebrities [5]. Researchers argue that advertisers should pay attention to how advertisement messages are presented to consumers. For example, the way of how information is labeled or packaged may significantly influence consumers’ judgment and decisions about the product. A celebrity is a well-known personality who enjoys public recognition by a large share of a certain group of people [6]; The basic assumption underlying celebrity endorsement is that the value associated with the celebrity is transferred to the brand and therefore helps in creating an image that can be easily referred to by consumers. Consequently by association the brand can very quickly establish the credibility get immediate recognition and improve sales. However, there are many risks associated with such endorsers. The brand could slide down just as quickly as it moved up the consumers mind. There are many cases of brands failing in the market place despite famous celebrities endorsing them [7].

Table 1.1 Dimension of Celebrity Endorsement

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Attractiveness</td>
<td>Positive effect on consumer’s behavior toward the product and service making comparison of product with the person who is unattractive. [8]</td>
</tr>
<tr>
<td>Credibility/ Trustworthiness</td>
<td>honesty, integrity and believability of an endorser [3]</td>
</tr>
<tr>
<td>Celebrity with expertise is more persuasive and trustworthy [11]</td>
<td></td>
</tr>
<tr>
<td>Celebrity belonging to similar region, having same life-style with targeted group is considered to be more credible [12]</td>
<td></td>
</tr>
<tr>
<td>Celebrity Expertise</td>
<td>the extent to which a communicator is perceived to be a source of valid assertions [13]</td>
</tr>
<tr>
<td>Endorser’s expertise has encouraging effect on receivers. [14]</td>
<td></td>
</tr>
<tr>
<td>Celebrity Congruence</td>
<td>Celebrity matchup principle with product is important [15]</td>
</tr>
<tr>
<td>Congruence principle supports brand matchup and effectiveness. [16]</td>
<td></td>
</tr>
</tbody>
</table>

As personal care products are frequently purchased and low involvement items the purchase decisions of these products can be based on company preferences, brand equity, brand image and associations, unavailability of...
local substitutes, perceived quality, security feelings, emotions, sales promotions, celebrity based advertising, family & friends, social status etc. [17] So the objective of the study is to identify the factors of celebrity endorsement that attracts consumer’s perception and to study the influence of celebrity endorsement on the consumer’s purchase decision.

II. LITERATURE REVIEW

Celebrities nowadays have become a role model for the general and people goes for their opinions, perceptions and endorsements for making their own purchase behavior. The factors are mentioned in the table 1.1

The literature dealing with celebrity advertising impacts identifies five models that describe celebrity endorsement. The purpose of each is to clarify the relationship between the product (brand), celebrity, and process by which a celebrity’s characteristics are transferred to the brand (endorsement process) [18]. These five models are:

<table>
<thead>
<tr>
<th>Table 1.2 Theoretical Models of Celebrity Endorsement</th>
</tr>
</thead>
<tbody>
<tr>
<td>The source model</td>
</tr>
<tr>
<td>The match-up model</td>
</tr>
<tr>
<td>The meaning transfer model</td>
</tr>
<tr>
<td>The Elaboration Likelihood Model (ELM)</td>
</tr>
<tr>
<td>The Dual entertainment path model</td>
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<tr>
<td></td>
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<tr>
<td></td>
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</tbody>
</table>

According to Bangladeshi perspective celebrity endorsement in advertising related research papers or journals are very few. The factors of celebrity endorsement thus need to be explored in the context of Bangladesh to effectively design the advertising of the personal care products.

III. METHODOLOGY

The research is empirical in nature which is confined to Dhaka city where different age groups were asked about their views on celebrity endorsement and the factors they rated for the decision to choose personal care products. The research was done based on a self-administered structured questionnaire which used 5 point likert scale. The respondents were selected using convenience sampling technique. The sample size is 100 and responses were collected from people with 18 and above age group and preferences for personal care products which were commonly enforced by local or foreign celebrities. SPSS version 20 was used for analyzing the data. Descriptive statistics were used to examine the demographic profile of customers and Cronbach’s alpha to measure reliability. The factors influencing the purchase decision of the personal care products were reduced using a multivariate statistical technique like Factor Analysis.

III. RESULTS

Reliability Test

The questionnaire used for data collection was found reliable as the Cronbach Alpha score indicated in the table 1.3 was more than 0.80.

<table>
<thead>
<tr>
<th>Table 1.3 Reliability Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's Alpha</td>
</tr>
<tr>
<td>927</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 1.4 Demographic Profiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Income</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td>Age</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Educational qualification</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The table 1.4 gives a detailed picture of the demographic makeup of the sample. In terms of marital status, the largest percentage is of married females who constitute 77.5% of the total sample with single women following at 16.2%. Income wise, 67.8% of the sample is in the category of 26,000 to 50,000 income whereas 25.4 women have an income of Taka 25,000 or less. If we look at the age profile, we’ll notice that almost 70% of the sample is in their thirties and people in their late teens and twenties constitute 21.3 % of the data group. Moreover, in the education category, numbers of graduate females are highest with almost 70% of the sample women being graduated. The second highest numbers of people from this category are ones who have passed HSC Candidate. It stands at a total of 21.3% of the sample.

The next table, (Table 1.5) explains the rotated component matrix using the varimax rotation method. On completing the rotation in 7 iterations using the Principal Component Analysis, it is observed that all variables have factor loading of 0.550 or greater. The extraction method leads to grouping of all variables in four factors. Literature and analysis results can be used in naming the factors. The first factor included variables like trustworthiness, reliability, knowledge, honesty, sincerity, presence of celebrity encourage to purchase, celebrity is believable, convincing nature of the celebrity are all grouped in this factor. Looking at the similarity, this factor can be named

<table>
<thead>
<tr>
<th>Table 1.5 KMO and Bartlett's Test</th>
</tr>
</thead>
</table>

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Table 1.6 Communalities

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you believe that celebrity endorsement has an effect on your buying decision?</td>
<td>1.000</td>
<td>.629</td>
</tr>
<tr>
<td>Celebrity’s physical attractiveness affects the buying decision?</td>
<td>1.000</td>
<td>.667</td>
</tr>
<tr>
<td>Celebrity’s classy look in these ads affects the buying decision?</td>
<td>1.000</td>
<td>.734</td>
</tr>
<tr>
<td>Beauty of the celebrities is an important factor for buying the product</td>
<td>1.000</td>
<td>.756</td>
</tr>
<tr>
<td>Elegancy of the celebrity has an effect on your buying decision?</td>
<td>1.000</td>
<td>.569</td>
</tr>
<tr>
<td>Honesty of celebrity in these ads effects on your purchase decision?</td>
<td>1.000</td>
<td>.755</td>
</tr>
<tr>
<td>Reliability of celebrity effects to buy these products?</td>
<td>1.000</td>
<td>.748</td>
</tr>
<tr>
<td>Celebrity’s trustworthiness affects the consumers?</td>
<td>1.000</td>
<td>.643</td>
</tr>
<tr>
<td>Sincerity of celebrities in the ads about those products effects on buying behavior?</td>
<td>1.000</td>
<td>.670</td>
</tr>
<tr>
<td>Celebrities’ knowledge about the products effects your decision?</td>
<td>1.000</td>
<td>.691</td>
</tr>
<tr>
<td>The skillful presentation of the celebrity in the ads affects the buying behavior?</td>
<td>1.000</td>
<td>.633</td>
</tr>
<tr>
<td>I am familiar with the celebrity who appeared in the ads</td>
<td>1.000</td>
<td>.690</td>
</tr>
<tr>
<td>The image of the celebrity is matching with the brand they are endorsing</td>
<td>1.000</td>
<td>.579</td>
</tr>
<tr>
<td>The celebrity endorsing this brand is believable</td>
<td>1.000</td>
<td>.633</td>
</tr>
<tr>
<td>It is convincing that the celebrity uses the product they endorse</td>
<td>1.000</td>
<td>.643</td>
</tr>
<tr>
<td>How likely you purchase this product?</td>
<td>1.000</td>
<td>.696</td>
</tr>
<tr>
<td>How much you intent to try this product?</td>
<td>1.000</td>
<td>.708</td>
</tr>
<tr>
<td>How likely you seek out for the product in the store?</td>
<td>1.000</td>
<td>.547</td>
</tr>
<tr>
<td>Does presence of celebrity in ad encourage to buy the product?</td>
<td>1.000</td>
<td>.576</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

Table 1.7 Rotated Component Matrix

<table>
<thead>
<tr>
<th></th>
<th>Component 1</th>
<th>Component 2</th>
<th>Component 3</th>
<th>Component 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celebrity’s trustworthiness affects the consumers?</td>
<td>.670</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability of celebrity effects to buy these products?</td>
<td>.665</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Celebrities’ knowledge about the products effects your decision?</td>
<td>.648</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honesty of celebrity in these ads effects on your purchase decision?</td>
<td>.634</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sincerity of celebrities in the ads about those products effects on buying behavior?</td>
<td>.628</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does presence of celebrity in ad encourage to buy the product?</td>
<td>.570</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The celebrity endorsing this brand is believable</td>
<td>.553</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is convincing that the celebrity uses the product they endorse</td>
<td>.551</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Celebrity’s classy look in these ads affects the buying decision?</td>
<td>.762</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beauty of the celebrities is an important factor for buying the product</td>
<td>.759</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elegancy of the celebrity has an effect on your buying decision?</td>
<td>.631</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Celebrity’s physical attractiveness affects the buying decision?</td>
<td>.605</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am familiar with the celebrity who appeared in the ads</td>
<td>.672</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The image of the celebrity is matching with the brand they are endorsing</td>
<td>.668</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The skillful presentation of the celebrity in the ad affects the buying behavior?</td>
<td>.560</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How much you intent to try this product?</td>
<td>.750</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How likely you purchase this product?</td>
<td>.675</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How likely you seek out for the product in the store?</td>
<td>.613</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

This study being focused on female consumers of Dhaka city reveals that the first factor significant is the “Celebrity reliability”. Thus when a celebrity is selected, marketers should ensure the fact that the celebrity is believable, trustworthy and reliable according to the target audience. The next factor deemed important is the “Celebrity attractiveness” indicating the necessity of the celebrity to a certain physique that is considered attractive by the consumers. The third factor derived from the analysis is “Celebrity congruence”. This factor emphasizes the need to the celebrity to fit with the particular brand. Thus celebrities that are attractive and reliable cannot be blindly chosen for endorsement. Rather the celebrity’s image should match with that of the brand so that consumers can relate and make purchases. The last factor is “Purchase intention”. This factor signifies the fact that just celebrity endorsement alone cannot lead to purchase rather the consumer should have some kind of desire to seek out for

V. CONCLUSION

Celebrity endorsement is a frequently used promotional mechanism used by marketers to enhance customer perception of that particular brand. When marketers used such a technique they need to realize different factors associated with such an endorsement so that it ultimately leads to purchase. Understanding the factors held the marketer focus on celebrities that match with all the factors derived from not just literature but also from the findings of this study.
that product. The marketers on the basis of this study can emphasize on these factors before choosing a celebrity.

Further research can be done with a bigger sample size. Moreover a study can be done by incorporating the male population which can lead to inferring different results. A comparative analysis based on gender can also help marketers in celebrity selection for both male and female consumers. CFA can also generate a better finding that can help the marketers

REFERENCES


An Examination of Economic Loss of Poor Port Infrastructure in Bangladesh

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Paper ID: ICBM-19-0330

Abstract – This study conducted an inquiry into the broader economic contribution of seaborne trade from a developed port infrastructure facilities. The main objective is to evaluate the economic loss of poor port infrastructure on the national economy of Bangladesh, also get benefits from maritime business and increase efficiency country needs to create such port facilities and business environment for attracting the world shipping companies to invest in Bangladesh. The level of research embarked in this study was descriptive survey. A mathematical equation is used to provide empirical evidence of significant economic impacts of port infrastructure quality and performance on the economy. The results reveal that the total inefficiency cost estimated about $ 88.15 million per year, which is about 1.4% of the average export earning of Bangladesh. Therefore it is vital for CPA to continuously improve the quality of port infrastructure as it contributes to better performance of port as well as reducing economic loss and shipping cost of the country.

Keywords – Port Infrastructure, Economic Loss, Shipping Cost.

INTRODUCTION

Trade between nations has always made a significant contribution in terms of increasing wealth among the world population (Smith, 1776). Today, over 80% of all trade is seaborne (Stopford, 2009; UNCTAD, 2015). World merchandise trade volumes have grown at a modest rate of 2.3% in 2014 following the global gross domestic product (GDP) growth rate of 2.5%, indicating a strong correlation between trade and GDP (UNCTAD, 2015). There is a positive inter-relationship between port development and ships’ efficient system operation and negative for cost of sea transportation. In fact, the infrastructure facilities (adequate navigation, berthing and cargo-handling facilities) help increase the ports’ capacity of services and reduce their operating costs by removing the berthed ships’ idle time, as a relatively large number of ships can be handled with the increased available capacities. Bangladesh has shown an impressive growth in trade in the last decades resulting a share of around 40% of the GDP. However, poor infrastructure of the country is always in discussion for the high cost of moving goods. Reduction in the cost of trade and transportation would obviously increase the competitiveness of Bangladesh leading towards more and more business. In this paper an analysis of the poor port infrastructure specifically at Chittagong Port has been conducted to show the economic loss the nation is facing from day to day port activities. In doing so secondary sources of information is collected from the Chittagong Port and analyzed. It has been found that any improvement in the port infrastructure could create substantial monetary benefit for the shipping services resulting cost reduction and enhancing further trade. In order to address the significance of port infrastructure quality and seaborne trade, the present study investigates the following research questions (RQs): (1) Does the port infrastructure quality and seaborne trade of a country have any significant impact (Direct or Indirect) on the country’s economy? (2) Does the economic development depend on port infrastructure? To answer RQ-2, a mathematical equation is developed to analyze how port infrastructure affects seaborne trade, as well as the economy of the country.

Section 2 presents a comprehensive literature review of port infrastructure impact studies and the conceptual framework of this study. In Section 3, data and methodological issues are discussed, before the results of the empirical analysis are presented in Section 4. Section 5 discusses implication of the findings and concludes with future research directions.

LITERATURE AND RESEARCH FRAMEWORK

Although many studies have justified investment into transport facilities as a stimulator of economic growth of a country or region, most of the economic impact studies concerning seaborne trade have focused on a particular seaport or a region and a clear picture of how seaborne trade benefits the world economies remains elusive. In the context of the Port of Liverpool, Kinsey (1981) argued that the impact of ports on the local economy was declining, with a decreased number of jobs directly dependent on the port at that time. British ports were no longer major employers and the industrial inter-related complexities no longer existed, further reducing the impact of ports on the local economy (Gripaios and Gripaios, 1995). Two relatively recent studies, one in the context of South Korea (Jung, 2011) and another in the context of China (Deng et al., 2013), have also argued that ports are having declining effects on economy. In particular, Jung (2011) identified that from 1990 to 2008, South Korea experienced 87.5% decrease in the direct port employment creation effect per billion Korean won.
CONCEPTUAL FRAMEWORK

In this paper, the approach used to estimate economic impact of port infrastructure quality is based on the economic perspective of transport infrastructures proposed by Lakshmanan (2011). We have assumed that investments into port infrastructure are exogenous, which improve the quality of port infrastructure. The above figure reflects a circuit-pattern effects of development where four corner-points of inter-relationships are demonstrated. In the corner-point 1, the relationship between the port’s infrastructure and its rates of charges is negatively displayed, indicating that an improvement and deterioration of the former leads to decrease and increase the rates of charges. In the corner-point 2, the relationship between the port’s infrastructure and ship’s rates of charges is negatively depicted, implying that an increase and decrease in the rates of charges of the former leads to result the opposite for the latter. In the corner-point 3, the relationship between the port’s infrastructure and ship’s turn-round time is negatively shown, revealing that the improvement and deterioration of the former leads to reduce and increase the turn round time of the latter. In the corner-point 4, the relationship between the results of the port’s improved infrastructure facilities (i.e. economic benefits to be derived due to co-ordinated systems operations) and sea transport costs is negatively demonstrated, reflecting that the improvement and deterioration in the former leads to result the opposite for the latter.

Hypothesis development

H1 (2): The quality of port’s developed infrastructure and port’s charge rate

The developed infrastructure facilities of a port determine its rates of charges (i.e. cargo-handling and berthing charges) also costs of cargo-handling and berth operations and maintenance). Improved infrastructural facilities reduce port’s service production costs in the following ways:

Any improvement in a port’s infrastructural facilities will thus be instrumental in reducing the country’s sea transport costs, such an improvement not only helps reduce a port’s service production costs, but also bring down ship’s service production cost (i.e. traffic carriage costs).

H2 (3) Port’s infrastructure and ship’s turn round times:

Given the underlying cause-effect relationship between infrastructure development and sea-transport cost, it is obvious that excessively turn-round time (i.e. due to inadequate port facilities) constitute the major obstacle in the way of the economic operation of many ocean-going ships on the world freight transport market. Ships’ turn-round times are lengthened when there is congestion in the port’s approach channel and berths. Congestion in the channel can be ended if the port’s infrastructural facilities are extended and improved to allow a greater number of ships to berth without any navigational problems.

Data and methodology

Data regarding all observed variables of latent constructs of this empirical analysis are collected on an annual basis per country from the World Bank database (data.worldbank.org). Data/information was collected from World Bank, Bangladesh Bank, CPA report, Chittagong Customs and various books. Besides, an infrastructure survey of the Chittagong Port Authority was done based on the information which was collected through questionnaire by E-mail and telephone calls. Primary data was collected through interviews and foreside discussions with resources personnel focused on the port infrastructure and economic development. In some cases information were obtained through unstructured interview and researcher has compiled those in a consistent manner for obtaining the factual information. Discussions/interactions were made with professionals and related stakeholders of ports, shipping, ship building and ship breaking industries, different government organizations and maritime training institute including seafarers. Secondary data were gathered from Chittagong Port Authority as well as collected from books, journals, magazines, unpublished materials and sources from Internet.
EMPIRICAL ANALYSIS AND FINDINGS

This section presents empirical analysis and findings with respect to the research questions stated in Section 1. First Port developed infrastructure means the enhancement of capacity for loading and unloading of cargoes with proper strategic planning. Strategic port planning has been diversified in the last century with the application of modern technology and new innovation (Tannar and Williams 2001). Countries with inefficient seaports have higher handling costs and good infrastructure have lower seaport costs. Development of infrastructure benefits directly the port’s cargo-handling capacity and promotes international shipping and foreign trade. Port infrastructure plays a key role on the economic development of a country. It has great impact both directly and indirectly.

**Fig 2. Impact of port infrastructure on the economy**

Port infrastructure can be developed by investing money that will increase economy with low cost doing trade. It is the indirect impact on the economy. On the other hand by improving port performance, with low port charge, shipping charge and with increased port efficiency it can be also the way of improving national economy. It is the direct impact on the economy of infrastructure.

CPA handles about 92% of the country’s foreign trade. It is mainly a captive user port. During 2016-2017 it handled 2.41 million TEU containers, 23.47 million tons of cargo, 3092 sea going vessels. During 2016-2017 it earned $239.98 million from all port services including the cargo and ship handling services and also value added services. However, CPA directly provides about 23,000 employment opportunities (including dock and stevedoring) and generates per year about 60 million dollars as value added.

**Table 1 Direct effect on the economy**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2015-2016</th>
<th>2017-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>24,000 numbers</td>
<td></td>
</tr>
<tr>
<td>Value added</td>
<td>$60 million</td>
<td></td>
</tr>
</tbody>
</table>

The GDP growth of Bangladesh economy is around 6-7% while the container traffic growth of Chittagong Port is about 14% which is double of GDP rate. Thus Chittagong Port’s contribution to the national economy is remarkable.

**Theoretical Framework**

It has been found a gap that no such research on identifying the infrastructural needs of the port sector of Bangladesh has conducted emphasizing the economic benefit a developed port infrastructure world accrues. This paper could help to formulate some key strategic factors for the infrastructure development of the port sector significantly the Chittagong port.

**Fig 3 Income, expenditure, surplus of CPA**

The total income of CPA last 2 years was $239.98 million, expenditure $180.04 million, surplus $59.95 million respectively.

**Mathematical Equation Model**

In one example, “A 15% reduction of service time results in a 45% reduction in waiting time and 28% of turnaround time” (Francou, 2002, p.9). The ship’s turn-around time at CPA from 2015-16 & 2017-2018.

**Table 2 Turn-around time of CPA, Source: CPA**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2015-2016</th>
<th>2017-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAT of vessels</td>
<td>4.26 days</td>
<td>2.46 days</td>
</tr>
</tbody>
</table>

During 2017-18 the average turn-around time was decreased. In Singapore and Bangkok the turnaround time of ships is only 1 and 2 days respectively in spite of higher ship-load than CPA.

**Table 3 Savings to ship due to improve turn-around time (2017-2018)**

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Calculation: Ships days saved per call: (4.26-2.46) days = 1.8 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average daily cost of ship</td>
<td>$8000</td>
</tr>
<tr>
<td>Total ship handled</td>
<td>2675</td>
</tr>
<tr>
<td>Chartered vessel</td>
<td>1070</td>
</tr>
<tr>
<td>Liner vessel</td>
<td>1605</td>
</tr>
<tr>
<td>Turn-around time</td>
<td>2.46 days</td>
</tr>
<tr>
<td>Turn-around time</td>
<td>4.26 days</td>
</tr>
</tbody>
</table>

Savings to the liner vessel: $8000*1.8*1605 = $23.12 million

For the last five years the average turn-around time of vessel is 4 days. If considering average turnaround time
should be one day (like Bangkok) instead of 4 days, and then the ship owner could save about $42.72 million per year.

Table 4 Per-year inefficiency cost to ship

<table>
<thead>
<tr>
<th>Assumption</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of ship handled</td>
<td>2670</td>
</tr>
<tr>
<td>Average daily cost of ship</td>
<td>$8000</td>
</tr>
<tr>
<td>Average turn-around time for the last five years</td>
<td>4 days</td>
</tr>
</tbody>
</table>

Calculation:
Ship days saved: (4-2) days = 2 days
Total cost to ship for 2 days more at port per year = ($8000*2*2670) = $42.72 million

Calculation: Opportunity cost for 25 days delay = ($900 million*10%)/ 365*25 = $4.8 million

The main share of foreign exchange earnings comes from exporting garments. One-day delay in port, opportunity cost to exporter is $2.65 million and for 4 days delay is $10.63 million.

Table 6 Opportunity cost to the exporter (for RMG)

<table>
<thead>
<tr>
<th>Assumption</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>export value of RMG</td>
<td>$9700 million</td>
</tr>
<tr>
<td>Opportunity cost of capital</td>
<td>10%</td>
</tr>
<tr>
<td>Dwell time of export container</td>
<td>4 days</td>
</tr>
<tr>
<td>Average RMG exported</td>
<td>1 million ton</td>
</tr>
</tbody>
</table>

Calculation:
Opportunity cost for 4 days delay: ($9700 million*.10*1)/365*4 = $10.63 million

Due to draught restriction, bulk cargo carriers e.g. cement clinker, food grain are lightered which cost $25 million per year to the importer.
Cost on account of lighter vessel: $5.0*6 = $30 million
Due to lack of data, details of improvement of port efficiency on various aspects could not be worked out. Because of long turn-around time of ship, ship owners are spending about $42.72 million per year (considering 2days turn-around time).

Table 8 Total inefficiency cost to ships and cargo in every year

<table>
<thead>
<tr>
<th>Cost in $ (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost to ship for 2 days more turn-around</td>
</tr>
<tr>
<td>Cost to importer for 25 days dwell time</td>
</tr>
<tr>
<td>Cost to exporter for 4 days dwell time</td>
</tr>
<tr>
<td>Lighter vessel cost</td>
</tr>
<tr>
<td>Total inefficiency cost</td>
</tr>
</tbody>
</table>

Therefore, the total inefficiency cost estimated about $88.15 million per year, which is about 1.4% of the average export earning of Bangladesh.

Discussion and conclusion
This study examined associations among quality of port infrastructure, shipping cost and seaborne trade, and their effects on national economy. Overall, the results show that improvement in quality of port infrastructure and logistics performance would bring the greatest benefits to the economy otherwise country would face a greater loss of economic earnings. The study revealed that the quality of port infrastructure has a significant positive effect on national economy, which is similar to Ferrari et al. (2010), Bottasso et al. (2014), Park and Seo (2016) and others, who observed positive effects of seaports on the economy. From the analysis it is clear that the performance of CPA is low, as the average turn- around time is 2.46 days. ADB country Director for Bangladesh commented, "Chittagong Port is heavily congested and poorly managed and turn-around time for a feeder vessel is 3-4 days against only 0-1 day in Singapore and Bangkok" (Fairplay, 10th July, 2015). However, average turnaround time for the last five years is 4 days at CPA. During 2017-18 the average turn-around time was improved 1.8 days in comparison to previous year. Hence, savings to the ship is about $38.52 million.

REFERENCES


Development of Third-Party Logistics Services in International Trade: Bangladesh Perspective

Abstract – The third-party logistics (TPL) business is emerging as an outcome of the developing demand of progressive logistics services. Globalization, reduction of lead time, customer satisfaction, and outsourcing are some main factors contributing to this attention in logistics. Integration of the supply chain has become an important component to manufacturing to gain competitive benefit. As a result, the part of logistics providers is altering both in content and in difficulty. New organizations are entering the market and competing with the traditional transport and warehousing firms. As a developing country like Bangladesh TPL service providers are facing operational challenges relates to their businesslike as multimodal transportation, hinterland connectivity, port delivery, warehousing, supply chain network, less than container load (LCL) delivery and so on. This paper aims to classify the challenges of third-party logistics performance in Bangladesh and evaluate their effects on global trade competitiveness. The study also seeks to identify possible solutions for improving logistics performance for better competitiveness in overseas trade. A qualitative research was carried out to identify the use of third-party logistics services in Bangladesh. Results mainly based on secondary data. The finding of the paper is that, the quality of third-party logistics service in Bangladesh has increased over the years. As before it was only transportation based, but now it has spread its widthness. Yet, this development is not up to the mark comparing with our neighborhood countries. This study would be beneficial for third party logistics service provider specially freight forwards, logistics companies, charter, broker, ports, inland container depots (ICDs), and several maritime stake holders such as shippers, main line operators, cargo owners, transport operators and shipping agents because they would come to know about the real facts regarding TPL service. It would be helpful for the stated entities in a sense that they may set new strategies and tactics and moreover forecast their business from the findings of this research. Furthermore, the study would be relevant to researchers who might wish to conduct further studies into this and/or related subjects.

Keywords – Third Party Logistics Service, Service Providers, Role, Development.

INTRODUCTION

Globalization, logistic integration and the consequent expansion of the maritime industry have redefined the functional role of shipping and ports in global logistics and have generated a new pattern of freight distribution. As the world trade has increased rapidly in the past decade, has modernized the global maritime industry bringing about new progresses, deregulation, liberalization and increased competition. As a consequence, the business stability and sustainability of the industry is largely subject to how well it adapts to such dynamic environment. As the business procedures and business entities in worldwide trade are becoming more complex, it is becoming increasingly tough to accomplish all the activities on one’s own. On the other hand, third party logistics providers are qualified to manage certain areas of business operations. Therefore, the high quality of logistic services and the effective and efficient integration of transport, warehousing, inventory management, information system, packaging and other service offered by third party logistic service providers (i.e. Shipping company, Shippers, port / terminal operator, Freight forwarder Ship broker and chartering house) have become an important issue.

LITERATURE REVIEW

According to Langley and Sink, there seems to be no definition of third-party logistics definition that will satisfy all industry. He explained third party logistics as using an external supplier to perform some or all of a firm’s logistics. In support of Langley and Sink, Bhatnagar et al. also refer to third party logistics as the use of external companies to perform logistics activities either in part or full. Furthermore, Laarhoven et al. defines third party logistics as activities performed by a logistics service provider on behalf of a shipper and consisting of at least management and execution of transportation and warehousing. Other activities such as inventory management, information related activities, value added activities are also included. Moreover, according to Hertz and Alfredsson third party logistics is “an external provider who manages, controls, and delivers logistics activities on behalf of a shipper” and their relationship can be formal or informal. Bach and Virum referred to third party logistics as a logistics alliance that shows a close and long-term relationship between a customer and a provider in connection with the delivery of a wide range of logistics needs. In summary, all these definitions of third-party logistics all point to the fact that third party logistics is the
use of external logistics service providers or companies to perform some part or full integrated logistics activities. It is found that, there are some area by which the TPL operation are influenced, such as different mode of transport, customs clearance, Port performance, Hinterland connectivity, Container handling, Transit, transshipment, information flow system, service quality, service charge, customer service, Government policy, customs policy, less knowledge of international trade, multimodal transportation, cost minimization, just time delivery, economic order quantity, and other related activities. However, to date there has been no study reported in the literature that has comprehensive focused on third party logistics services in Bangladesh. Hence, it was considered important to carry out a specific survey on 3PL practices, the challenges and a possible way to mitigate this problem in Bangladesh.

DISCUSSION
There are about 837 freight forwarding company have been registered under Bangladesh Freight Forwarders Association (BAFFA). Due to frequent shipment of garment and leather product across the world, the industry is on increase. For example, from freight forwarding business point of view, MGH Group represents seven freight forwarding agencies and six shipping lines. In 2006 and 2007, MGH was set to make stronger its presence in Sri Lanka, China and Europe and has productively reached its goal. Since then, MGH pays attention on the European market to provide its quality services across the Pacific. MGH has 30 %(percent) volume share of export sea freight in Bangladesh and 55 % (percent) of European exports. MGH provides air freight, ocean freight, warehousing, trucking, import clearance, distribution and custom. Generally, the scope of services offered by third party providers in Bangladesh may range from a relatively limited set of services to a comprehensive, In Bangladesh most practicing scenario is three types service are provided by TPL service provider. These different firms have different core business. But they have mutual relationship with one another.

Figure 1: Types of firms In Bangladesh

Some TPL service core business is only transportation and may not have warehousing fully integrated set of logistics activities identified the following as third-party logistics services:

- Transportation
- Warehousing
- Freight consolidation and distribution
- Product marking, labelling, and packaging
- Inventory management
- Traffic management and fleet operations
- Freight payments and auditing
- Cross docking
- Product returns
- Order management
- Packaging
- Carrier selection
- Rate negotiation
- Logistics information systems

Opportunities and challenges of 3PL services in Bangladesh: Third party logistic service provider is the media between buyer and seller. In Bangladesh perspective, when business deal is done by buyer and seller, in maximum case a TPL service provider became the consignee, seller send the goods via TPL service provider. It is duty of TPL service provider to deliver the cargo to buyer door in terms of incoterm. In the process of cargo transportation TPL service provider have to faces many problems in Bangladesh.

Commitment of the supplier: It is a very common problem they have to face. Freight forwarder booked order to shipping line in a particular time. But sometime Shipper could not deliver the goods in time. Then it creates a lot of problems. Because the air or ship will leave in exact time and they will take demurrage from the supplier. Then the supplier has to go for air logistics which is very costly.

Unfair Competition: The business set up of freight forwarding depends on the country or state which the business is being undertaken. The market comprises of individual customs brokers, big and small firms which make the competition unfair due to difference in freight rates which is a very common problem in Bangladesh.

Lack of sound financial background: Many freight forwarders or business can’t be able to sustain and support huge projects because they lack fitness. The small firms and customs brokers don’t get enough return on investment (ROI) because the market is not always stable depending on season and freight rates variations.

Modern technological advancement: The world has become a small village where people are able to trade, interact and market their business. The introduction of E-commerce has deprived many freight forwarders and customs brokers business, whereby people can buy, sell or their services directly online without making a lot of consultations. Many freight forwarders in Bangladesh who are not able to embrace this technology because of lack of enough resources and lose business.

Inefficiency of port Infrastructure: Third party logistics service provider have to face a lot of problems in Chittagong port as most of the cargo handled in this port. The problem of cargo congestion at the Chittagong port is increasing day by day. There is a shortage of lighter vessels to transport containers from ocean-going vessels that must
offload at outer anchorage as the draft does not allow for these to berth at the port. Indeed, there is also a lack of enough berths for the vessels to dock. All in all, there is a situation that has built up a queue of vessels waiting to get berth. It has been announced that shipping liners must count steep demurrage for goods to be unloaded after berthing at docks. This has prompted shipping liners plying the Singapore-Chittagong route to raise price per container by USD 150 because of the congestion. Indeed, the traffic has cut down shipments by liners on this route to one shipment (as opposed to two earlier) per month. The problems of lack of infrastructure have been accruing over the years. Port infrastructure has simply not grown to handle extra volume and the plan to build a container terminal is now scheduled for 2019.

Table 1: Container Handling statistics of Chittagong port

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Import in TEUs</th>
<th>Export in TEUs</th>
<th>Total in TEUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>675,796</td>
<td>667,612</td>
<td>1,343,408</td>
</tr>
<tr>
<td>2012-2013</td>
<td>743,547</td>
<td>725,166</td>
<td>1,468,713</td>
</tr>
<tr>
<td>2013-2014</td>
<td>812,918</td>
<td>812,591</td>
<td>1,625,509</td>
</tr>
<tr>
<td>2014-2015</td>
<td>940,827</td>
<td>926,235</td>
<td>1,867,062</td>
</tr>
<tr>
<td>2015-2016</td>
<td>1,109,355</td>
<td>1,080,084</td>
<td>2,189,439</td>
</tr>
<tr>
<td>2016-2017</td>
<td>1,211,874</td>
<td>1,207,607</td>
<td>2,419,481</td>
</tr>
</tbody>
</table>

Source: http://cpa.gov.bd/container-handling-statistics-ctg

Delay at container freight station (CFS): LCL container are stuffed and unstuffed at CFS shed. Often Complexity arises n CFS shed where several parties’ cargos are stuffed to or unstuffed from the same container. this is also a cause of container congestion and makes delay. When truck get into the port and wait for the LCL cargo. Some time it happened that C&F agent could not find the cargo or find late. On the other hand, truck is waiting in front of the shed. And we know port is busiest place so it causes traffic problem inside the port. And for this reason, cargo could not delivery to factory in due time. Sometimes a single day is also an important day in garments factory. Moreover, forwarder have to pay demurrage to truck company for late.

Stake holder strike: Generally, Port is not closed for a single day. But stake holder outside the port can be a major factor of port congestion when they stop work for strike. It is uncertain related with political issues bye different associations. Association may be of several parties such as trailers operators, truckers, labors etc. for example, the transport owners and workers went on strike protesting entry fees at the port, on March 05, 2018. This kind of strike has become very regular in ctg. Port. But fact is that it makes container congestion in port. And then when strike withdrawn, all forwarder gives delivery order to C&F agent to deliver their cargo. And creates a horrible situation in ports. Truck freight rate goes high because shortage of truck in accordance with the demand. And also creates traffic congestion in port and Highway also.

Conclusion and Recommendations: The primary message of this study is to reveal the overview of third-party logistics sector of Bangladesh. From the foregoing analysis of TPL sector, it has been found that the TPL business is facing many challenges including port infrastructure, custom clearance, hinterland connectivity etc.

As TPL business is going very competitive, good quality service and lowering cost will help to increase the number of international customer as well as local customer. It is also important that the employees are involved in TPL business should be sincerer to their work and willingness to give good quality service to their customer. Most employees are not so committed to their duties. The result has been poor service, characterized by delays and small cargo damage. This has reduced cargo quality at delivery. “The problems associated with delays are many, ranging from damaged image of the forwarder to subsequent loss of employment.” No one wants to use a delaying forwarder as this brings a lot of inconvenience to both the consignee and consignor. Good Customer selection will also help them to keep away from unnecessary hectic. Mutual
understanding among TPL providers via joints venture or merging will help them to work efficiently in global coverage area. Good quality service will help to gain new customer and increase their capacity and competency. From it then becomes obvious that the success or failure of the TPL organization greatly affects the level of profit and success of the TPL business. Due to globalization and deregulation of the shipping industry, the core business of TPL service provider has been declining dramatically. Most of the TPL companies faced difficult situation due to the above reasons. Based on the results of the data analysis, it may be possible to conclude that high Price, low service reliability, contingency plan and low flexibility towards customers from TPL service provider are the main reasons why they lose customers. It can be said that higher freight charges another provider Causes lose customer as Bangladeshis are naturally price sensitive. Based on survey, many local customers informed that TPL service provider sometimes failed to maintain the schedule as promised due to carrier, port etc. problem, it is also responsible for losing local customers. In terms of profit and employment, the TPL business is a very important area, which must not be neglected. In considering the developing country like Bangladesh Import and export trade is increasing day by day. TPL business is a part and parcel of country trade. if the quality of service increase. That means most foreign investor will be interested to do business here. And the outcome is our industry will grow up along with the country economy.

REFERENCES
[4] The definition of 3pl by bachi and varum (1996), and liebetal. (1992) indicates that this type of collaborative inter-firm arrangement in a supply chain replaces either partial or entire logistics functions of supply chains with long-term contractual agreements.
Multimodal Transportation and International Trade Facilitation: Bangladesh Perspective

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Abstract – An efficient transport system is essential for an efficient supply chain to facilitate international trade. To utilize all cheaper resources, such as labor in Bangladesh, companies receive supplies from one country, produce the products in another country, and sell them in other countries. The transport filling the gaps among them. To perform the transport function a carrier may require the use of more than one mode, the so-called multimodal transport. Multimodal transport, an integrated systems approach, can be defined as the most cost- and time-effective way of moving goods from shipper to consignee. But in developing countries like us transport system is still operating in a conventional fragmented way where modal integration has not been achieved. This paper focuses on efficiency of multimodal transportation for international trade facilitation. The paper gives an overview of multimodal development in Bangladesh. The present attempt to fill this gap through an in-depth literature review of international freight transport of developed and developing countries and a qualitative study based on the survey. Data were collected from both the primary and secondary sources using field methods and document analysis respectively. Primary sources of data were from the various freight forwarding company, logistics company. The Secondary sources of data were published books and unpublished materials relevant to the study. This study describes the major issues behind the efficiency of multimodal transportation. It finds out the root causes of inefficiency in multimodal transportation. Identified causes are infrastructure problem, customs problem, policy problem. The study proffered some strategies like simplification of customs, use integrated transport system etc. At the end this study states some recommendations for the development of multimodal transportation. These includes - Infrastructure Development, standard customs clearance system, establishment of sufficient number of inland terminals, implement integrated transport policy.

Keywords – Multimodal transportation, international trade, integrated transport

I. INTRODUCTION

International trade plays an important role in economic development of any country and effective trade depends upon safe, smooth, efficient and cost-effectivetransportation system. Environmental safety has become the main agenda worldwide for the increasing of transportation since long before. At the era of globalization, the world has become a borderless community where every trading and finance is possible by the virtue of internet and developed communication system. For the globalization and the development of entire economy of the world: the trade, finance and transport are the major parameters. Globalization, supply chain, outsourcing have changed world gross economy significantly. For efficient trade a reliable, secured, freight transportation is necessary without any hesitation. Transportation is the movement of goods from one location to another location from source of production to buyers' door. There are normally five types of transportation viz water, rail, road, air and pipeline. All of them having some significant advantages and disadvantages. Road transportation mode can be used for a little amount of cargo and destination is flexible, secured but cost is moderately high. Rail transportation is safe, secure, cost effective but destination is limited. Water transport mode is very cost effective, secure but needed time to deliver and destination also limited. If it is bulk cargo the loading and unloading time can affect the supply chain. The air transportation system is safe, secure and fast but cost is so high and destination is also limited. Pipeline transportation system is used only for a limited destination and limited liquid cargo. So, for this there is a concept which has already emerged, called multimodal transportation system. Multimodal transportation is the system to transport goods from one place to another place by using the different modes of transportation in a systematic, harmonized way, so that goods can be delivered to the destination timely and securely. As the multimodal transportation follows only one contract, pre-fixed charge, it is easier and reliable for clients to transport their cargo. If the multimodal transportation can be run in Bangladesh, the country could attain greater competitiveness by reducing transportation cost as well as increasing safety, reliability and environmental efficiency and could manage to attract more share in the international market.

II. LITERATURE REVIEW

Dewan Mohammad Jahurul Islam identified the top factor for developing countries which is procedural barriers consisting of issues of outdated attitude under-the-counter payment, customs procedures and use of traditional INCOTERMS. The freight transport multimodal
development is restricted by the weak presence of modal transfer points due to unreliable port and terminal services, lack of port and terminal competition, longer ship turnaround time in port, and lack of sufficient number of inland terminals. There are some preconditions to standard system development including publication of freight rate, development of standard customs clearance system, and shorter inland transit time. He also suggests, the standard system developments should include issues of simplification of customs procedures, automated customs clearance systems and registration or licensing of transport operators. Also, there has to be a competitive freight market meaning no subsidy to commercial freight services, competitive inland freight market and sufficient volume of containerized cargo. Also, the multimodal transport operator will require commercial rail freight services, joint venture or partnership, with local skill and expertise and freight forwarders. On the other hand, the understanding and recognition (knowledge) of modern transport and logistics system is vital to success. He also said they need to be aware of the benefits of a multimodal transport system and be capable of distinguishing freight forwarder and shipping line. Academic and training institutions, industry leaders, and foreign partners and operators can play an important role in improving the users' knowledge. Akille Mulugeta concluded that transit costs, transit time, logistics infrastructures, and service reliability positively affect the multimodal transport effectiveness. The reasons behind are inefficiencies, lack in use of modern technology, integration of stakeholders and there are double costs.

Xu Gubin said that The World-wide containerization trend has turned out to be a major catalyst in utilizing multimodal transport to a greater extent. On the one hand, the concept of container transport has brought about technological and organizational possibilities for the employment of multimodal transport. It can hardly be conceived that multimodal transport would be widely used everywhere in the world without containerization of the carriage of goods. On the other hand, multimodal transport would furnish container transport with an effective tool, by which the advantages of container transport would fully be exploited. If the multimodal approach is not being fully utilized in the modern transport field, the significance of containerization revolution would be diminished to a considerable extent. Lastly, he expressed that the establishment of a smooth and successful multimodal transport mechanism would greatly depend on two important aspects: one is a well-functioning uniform legal regime governing multimodal transport, the other is the efficient performance of various multimodal transport operators. Author Joshua A.Odeleye says as multimodal transport operation is cost effective transportation system so it is very much important for every country to implement this transportation system. As trading and transportation are linked, so a safe efficient transportation is very much needed for any country. Rahman, M. and Hasan, K. R. (Journal of Traffic and Transportation Engineering 3 (2015) shown the real picture of Potential Multimodal

Transport in Bangladesh and Relative Obstacles. Lizzette Perez lespire says about the efficiency of multimodal transportation. Author Serdjo Kos (et al) says multimodal transportation plays important role in containerization development and help in performing port activities properly. In transportation goods as our main objectives to transport in safe and efficient way, the multimodal transportation system performs this activity properly. S.G.I. Tumpe Mwaijande emphasis the government role in multimodal development policy for the facilitation of international trade. As multimodal transportation has great contribution for economic development of the country, so the government should give importance for the economic development of the country through international trade by multimodal transportation. Banomyong and Beresford’s (2001) research on multimodal transport focuses on the various factors which are directly or indirectly involve in the total transportation process. Out of those, shipping is a key element and the role of shipping agent is significant. Although Laos is a landlocked country but they are exporting their garments to Europe by using multimodal transportation system through different routing alternatives. They are choosing the cheapest and less time consuming but efficient shipping company to send their cargoes. So we see that effective and efficient shipping company has the opportunity to grave the market. So the key issue that efficiency, effectiveness of shipping company and multimodal infrastructure helps to increase profitability.

From above literature review we understand that various issues are related with multimodal transportation. The present study aims to give the concept about multimodal transport and its effect broadly for the development of the economy of our country.

3. Major challenges in implementing multimodal transportation in Bangladesh:

a. Lack of infrastructure:

Infrastructure is the wheel of economics activities. There is a strong relation between infrastructure and economic development of a country. If the infrastructure is highly developed and well planned, the economic growth will be positive and will have a great contribution to the global trade and vice versa. Indeed, transport infrastructure is the central to all kinds of socio-economic development as it facilitates the movement of cargoes and passengers. Transport infrastructure development not only offer sort of time employment of people but also long-term access to market within or across countries. As Bangladesh is a developing country and having very poor infrastructures, there is a great impact on both domestic and international trade. There is no substitute to develop by a well planning for the economic growth of Bangladesh and to contribute in global trade. Rail, road transportation infrastructures must be rebuilt where necessary or making new plans as soon as possible. Government should make a panel board to research the problem with infrastructures and implement the suggestion to become a developed country from
developing country. Although Bangladesh has already taken some great initiatives such as Dhaka - Chittagong 4 lanes road, Padma multipurpose bridges, Jamuna multipurpose bridges (already completed) some new railways at various remote areas. But Bangladesh should pay attention more deeply to develop infrastructure for global and international trade.

Finally, the acquisition or set-up costs of new technology are very high and capital intensive for a freight transport system. To cope with containerization for international trade, developing countries need to equip their ports with appropriate terminals and equipment. Meanwhile the industrialized nations and big shipping lines are pushing towards the introduction of larger non-ISO containers, which will require new equipment and the expansion of locks and bridges.

b. Insufficient numbers of ICDs and ICTs:

There are three types of network in a transport chain: a collection network, a transport network and a distribution network. An efficient inland container terminal (ICT) or inland container depot (ICD) or logistics center is not only a prerequisite for the integration of a container port and hinterland network but also for the development of multimodal door-to-door transport and whereas in an origin-to-destination transport system a multimodal freight terminal takes over the central position. Another important aspect of this change of method is that a large share of cargo represents either small or less than truckload (LTL) shipments. Many shippers in developing countries produce small consignments and thus the need for such logistics centers, in the form of a hub, with such value adding activity as consolidation, packing, transshipment according to market needs etc. in developing countries, is even stronger than in developed countries. The lack of ICD restricts door-to-door services for these shippers. In contrast the concentration of high-volume trunk lines between ICD and major market centers allows deeper penetration of containers and introduces direct competition between not only transport operators but also between ICDs. Kamalapur ICD is only connected ICD via rail but present situation seems that it cannot attract the new opportunities due to various reasons. The government should take necessary initiative to modernize it and useful capacity of the ICD.

c. Problems in custom clearance procedures:

Though Bangladesh is a developing country its customs department are not automated or the partly automated which has a great impact over transportations in international trade. As the customs automation describes the application of information and communication technologies for accomplishing the mission of custom. It may support the entire clearance process from lodging, acceptance and processing of goods clearence for transit, export, import and the payment of applicable duties and taxes to release the cargoes from customs control. But at Bangladesh, the customs procedures likely to be a manual processing of paper-based cargo and goods declaration is very time consuming where there is a lack of sufficient number of well-trained staffs, such manual processing will not cope with the growing volume of international trade. Again, in non-automated customs procedures the payment of duties and cash often create opportunities for malpractice thus hampering the development and trade.

It is said that, the reason behind the port congestion in CPA is highly depends on the performance of the customs activity. Tend to be bureaucratic and lack transparency increasing cost and time for the interesting parties. It is still today manual or semi-manual procedure for customs clearance. So, that there is no substitution of automated customs procedures to facilitate international trade. Bangladesh has to pay more attention to establish automated customs procedures in port and terminals.

d. Lack of skilled man power:

Skilled manpower is essential to carry out any department activities smoothly and effectively. They also play a vital role for the systematic utilization of resources and help to conserve the resource as well. For the development and promotion of international trade, there must need skilled manpower at port and customs clearance department. Without skilled man power, they will fail to run out the procedures.

e. Inefficiency of transport operator:

To achieve the expected, the maximum target of transportation and to convey the goods from the seller to buyer timely, effectively, smoothly, for various modes of transportation the transport operator plays avital role. They are the main concerns to handle and to collaborate with shippers, buyers, drivers or the owner of the vehicles for transportation. Due to inefficiency of transport operator at Bangladesh, the whole transportation system is hampered and cannot be achieved the maximum expectations of efficient supply chain. So, there is an overall negative effects of inefficiency of the transport operators over international trade through the transportation.

f. Lack of modern information technology:

The need for EDI (electronic data interchange) or email is even more necessary in developing countries where the postal services is unreliable such as Bangladesh. The integration of the supplier, customer and service providers’ computer systems also strengthens the operational bond among them and thus increases the client's confidence. In the absence of an information gap it becomes difficult for either party to break off the relationship suddenly. Computing skill in the context of small firms, a common feature, is a special necessity of using information technology (Ndubisi and Jantan, 2003). Intermodal transfer points such as ports and terminals are important points of information flow and their success largely depends on the information system they have. But many developing countries have failed to connect their ports and customs and other related organizations with EDI.

g. Increase of turnaroundtime and idle hours:
Turnaround time of container vessels was recorded in 2008 and 2009 each year at 2.5 days which increased to 4.3 days in 2010. However, it was reduced to 3.2 days in 2011 and 2012. This could not be further decreased in the following years due to high idle hours. During the interview with the employee of SaifPowertec, private operator of CCT and NCT, it was gathered that, total idle hours at CCT was 62% while operational hours 38%.

**h. High transshipment cost:**

Transshipment Cost for the Bangladeshi feeder vessel in the Hub port is comparatively high. Because, port dues and warehousing cost is mainly value based. Value of the port depends on the location, port performance and other related services. Chittagong port serves as a feeder port; Shipping agents have to use Hub port for transshipment of containerized cargo

**i. Insufficient port’s back up facilities:**

As the port is a conventional port, the amount of land required for the storing facility and handling operation for container is inadequate comparing to the demand. The port is also facing shortage of various types of consonant equipment (e.g., chassis, yard cranes, ship to shore gantry cranes etc.) rational to the existing demand of container handling.

**j. Berth operator’s inefficiency:**

It is one of the main causes of container congestion at berth. Perhaps it happens for the inadequate experience of berth operating knowledge and lack of appropriate equipment. Different berths at Chittagong port are handled by different private operators. They also need appropriate level of cooperation and coordination. Where the general specification for productivity of a Ship to Shore (STS) gantry crane is 65-85 containers per hour, the productivity of STS of Chittagong Port is only 22-25 containers per hour.

**k. Inconsistent marine terminal productivity:**

Efficiency and loading and unloading plan of a marine terminal play vital role in container transportation. Otherwise congestion will be a common incident. Where the general specification for productivity of a Ship to Shore (STS) gantry crane is 65-85 containers per hour, the productivity of STS of Chittagong Port is only 22-25 containers per hour.

**l. Problems from shippers’ and truckers’ side:**

The time chosen by shippers or truckers to pick up their shipments sometimes mismatches with port and customs. For this it is not possible to transport the cargo timely.

**m. Problems from clearing and forwarding (CNF) agent:**

Many CNF agents work for the cargoowners. They have financial interest for every container when clearing and forwarding it. Therefore, they want to save customs and other port charges levied over every container. For that, most of the time they bargain with customs and port officials and make delay and thus contribute to congestion in the port and it delayed the whole transportation system.

**V. CONCLUSION**

Bangladesh is a developing country and its economic development depends on international trade. But the rate of progress comparing to other countries is negligible. The multimodal development of Bangladesh followed by the existing international transport services and the poor participation of national transport service providers. However, the freight transport system is not as poor as described by experts, stakeholders or in published works. As multimodal transport is a system approach rather than only a technical or physical development, the development needs to reach to the door of the user. This study tried to find out the present scenario of trade of the country and role of multimodal transport in international trade. The root issues behind the efficiency of multimodal transportation of Bangladesh has been sorted out. Infrastructure problem, paper-based documents procedure, lack of knowledge, lack of skilled manpower has been regarded as the challenges behind the efficiency of multimodal transportation of Bangladesh. This study also finds some challenges in the efficiency of multimodal transport operation. Those are infrastructure problem, customs related problem, information technology, use of old incoterm etc. The study also stated some implication like economic effects. If the multimodal transport is use significantly it help the development of the country. The remainder of this section discusses some recommendations for the Bangladeshi stakeholders.

**Recommendations:**

1. Development of existing infrastructure facilities.
2. Upgrating the exiting information technology.
3. Establishment of sufficient numbers of ICTs and ICDs.
4. Simplification in custom clearance procedures.
5. Reducing turnaround time and idle hours.
6. Establishment of institution for proper training of the personnel.

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Determinants of Employee Retention: A Research on Employees of Route to Market (RTM) International Limited

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Abstract – In this current era, each and every company looks for the competitive advantage in order to survive in the market. Even though the organizations focus on the technical aspects, the human asset also remains very crucial in order to determine the productivity of the organization. As a result, companies need to avoid employee turnover which can become a major barrier in the consistent performance of the company. It can be mentioned that companies having a reliable connection with the employees tend to be attractive for new talents as well. Therefore, the importance of employee retention is undoubtedly significant for a company. In order to know the degree of importance, the done research focuses on the influencing factors of employee retention and so the conducted survey shows a holistic view regarding the notion of employee retention. This research can be used to point out the responsible factors for employee retention so that the companies get the idea of the influential elements.

Keywords – Employee Retention, Employee Turnover, Satisfaction.

I. INTRODUCTION

In this competitive world the emphasis on labor market makes it a significant variable which focuses on the human assets of an organization because apart from all the fixed assets of a company, the human resources are the ones which have the capability to move. It is believed that the employees play an integral part when it comes down to executing the core operating activities of an organization. Hence, the investment in the human asset is much more important than it can be recognized in the first place, because there are certain direct and indirect costs related with the retention of the employees.

Since the arena of employee retention does not follow a fixed formula and it always goes through the changing phases which indicate that strategies must be developed from time to time following the trend regarding the elements of employee retention. In order to find out the strategies, there are certain factors which need to be emphasized. The degree of these factors varies from the organization based on their practiced cultures. Based on these variations, the cost and consequence of employee turnover become a matter of concern for the company because such cost incurred is not shown directly in the financial reports.

It is said that in near future, the workplace strategies can be dominated by those managers who can manage rapid changes in the best possible ways. Additionally it must be emphasized that when it comes to retaining the employees; it is very important that these employees are committed towards the changes. Being committed towards the changes in the organization affects the competence level of the employees. Hence, when the managers can make the alignment between the changes and the employees’ attitude- then the company can make progress in terms of retaining the employees in a better way.

II. METHODOLOGY

In order to find out the effects of the different elements regarding employee retention- a survey has been done on the employees of RTM (Route to Market International Limited). As part of the primary data collection, the research has been done based on few factors. These factors were supported by some secondary data and the literature review. As part of primary data, the sample size was 20 and these employees belonged to different departments of RTM. Therefore, the results retrieved from the survey covered the overall perceptions of employees who belonged to RTM and not just any particular department which could have made it more like one-sided and a biased one.

III. LITERATURE REVIEW

Employee Retention

Employee retention refers to the ability of holding on to the employees of a company. These employees are the most valuable assets of a company which makes it very important to retain the employees.

The average company loses approximately $1 million whenever more or less than 10 managers and professional employees leave the organization [1]. Such costs occur because a lot of investment is done whenever an employee is recruited. Starting from the job advertisement to the recruiting process, a lot of time and energy are invested in order to find the employees, who are best fit for the organization. Therefore, the leaving process of the employee and finding another suitable employee for the company is equally time consuming and somehow leads towards the extra expenditure as well. Following such, it becomes very important that the companies retain their employees no matter what. The stability in employee
retention plays an important part in case of the company’s growth, revenue and prosperity. Whenever it comes to build strategic decisions for a company, the mission statement, vision, goals, objectives are pre-determined. Afterwards, the strategies in case of employee retention are also ensured during these statements. With the orientation process, the employee retention procedures start because the employees can relate to the organization as per their requirement from the very beginning [2]. As time passes, the employee gets to know the organization in a better way. Therefore, the more he or she finds out that his or her purpose is aligned with the purpose of the organization, the more the decision is made to be permanent in the company. Therefore, this kind of alignment is very important to retain the employees.

**Employee Turnover**

Employee turnover is very costly for the organizations. Sometimes the employers do not understand the high expense of employee turnover. If it is calculated, the cost of job advertisements along with other administrative expenses, make the employee turnover factor an expensive one. Most employers especially the business leaders fail to understand the underlying factors responsible for employee turnover [3]. Sometimes, the small external factors are overlooked and hence the employee turnover takes place in a massive way. On the other hand, the internal factors are also responsible in case of employee turnover. The components of external and internal factors vary from industry to industry, organization to organization and most importantly, from individual to individual.

**Factors related with Employee Retention**

It is said that a diverse workforce portrays the employees’ needs and wants in the best possible way. Diversity is a colorful concept covering all the aspect of work place. This is not a mere black and white portrayal of the organizations’ culture [4]. Rather the diversity crosses more than just few variables like- age, gender, race etc. Hence, when these factors are considered and some prominent steps are taken- the problems of employee turnover are therefore addressed and proper measures are taken for employees’ retention.

On the other hand, skilled workforce is always important for a company’s growth because this skilled asset works getting more attached to the company rather than just working. Therefore, the special connection with the workplace allows the employees to stay in the organization for a longer period of time. The adaptation of unique traits and welcoming the new style of work also work as motivation for the employees. However, the diversity and skilled workforce are just two of the major elements which effect the retention of the employees because these two terms themselves focus on broader perspective which covers on a vast area.

**Factors related with Employee Turnover**

Individuals try to find the jobs according to their personality [5]. In general sense, it is never easy to measure what an employee wants from the organization. Therefore, it takes time for employees in order to actually find out the right fit of profession as per their personality. Hence, on some situations, the adequate facilities provided by the companies fall short as the employees’ look for more as per their personality. However, these scenarios are different from the normal factors. According to SHRM’s (2004) survey, most employees quit their jobs because of the lack of opportunities in the organization. Additionally, the lack of interest leads towards absenteeism and lack of productivity. Even the job stress which sometimes hampers the harmony of work-life balance is also responsible for the turnover. Therefore, it can be stated that, there is no particular formula through which the turnover of employees can be measured. However, it is quite prominent from the trend analysis that employee turnover mostly happens because of these mentioned factors.

**IV. RESULTS**

**Component 1: Salary**

According to Maslows’ Hierarchy of Needs, the salary or the wage is one of the important factors which influence the retention of employees because the salary gives the employees a feeling of security so that they can live their livelihood accordingly [6]. On an average, employees sometimes are partially satisfied and sometimes partially unsatisfied. As a result, if the employees find the proper pay structure- they tend to grow the interest of staying in the company for a longer period of time. Therefore, to measure the influence of salary- the employees were asked whether the company provides them a good salary structure compared to the competitors in the market. 7 out of 20 people were neutral about this statement which occupied 35% in terms of percentage. On the other hand, 5 of them did not agree with the fact that RTM provides more than the competitors operating in the same industry.

In order to elaborate more on the total compensation package- the second part focused on the standard overtime salary given to the permanent employees of RTM. In this case as well, 7 employees preferred to go for the neutral point of view which settled for 35% in the survey. On the other hand, 6 of them thought that the overtime pay was not standardized from their point of view.

Even though the overtime salary was not quite satisfactory for the employees, it was seen that 11 out of 20 employees (55%) agreed that the bonuses and incentives were adequate.
Component 2: Working environment

The working environment of a company determines whether an employee is getting the exposure of different circumstances which will influence the employees’ intention to stay in the company for a longer period of time. Such working environment can be determined through the mental and physical environment of the company. In order to know more about the influence of working environment, the employees were asked whether RTM had a comfortable environment or not. 11 out of 20 employees (55%) agreed that RTM provided a comfortable environment which enabled the employees to work with ease. On the other hand, 4 of the employees (20%) were neutral about the statement.

For the second phase in order to determine the working environment, the employees were asked whether they get the opportunity of two way communication or not. 12 out of the 20 people (60%) agreed that employees got the chance to communicate properly.

When asked about the existing friendly environment of RTM, 9 people (45%) agreed that the organization does have a friendly environment which allows them to work without any kind of unnecessary peer pressure. Among the rest, 5 people strongly agreed that there was definitely a friendly environment in the organization.

The mentioned questions deal with those factors which have an impact mentally. In order to cover the physical environment, the employees were asked about the facilities of proper light, space, technology and ventilation. 9 of them (45%) strongly agreed that the presence of these factors made the working place a better one. On the other hand, these same facilities were not enough for the 4 employees. They disagreed to the statement that there were proper facilities.

Component 3: Work-life balance

In order to ensure the productivity, effectiveness and efficiency of the employees, it is very important that there is a balance between work life and personal life. The more there is balance, the more an employee can focus on the given task rather than focusing on the compromises he has to make at that time. Therefore, a perfect balance of work-life is related to employee retention in a sense that, the less compromises made by the employee will allow him or her to stay in the organization for a longer time.

In case of the employees of RTM, they were asked whether the working schedule was suitable enough to maintain job and family simultaneously. 8 out of the 20 people (40%) were neutral about this question whereas, 6 of them (30%) agreed that RTM’s provided working schedule was quite balanced.

As part of work-life balance, the employees were asked whether RTM provided leave in case of marriage, maternal issue, being sick etc. 9 out of the 20 people (45%) agreed that RTM provided the required leaves on such situations. 6 of them (30%) were neutral when it came to express their opinions.

Component 4: Rewards and Recognition

In any case, it is important that the employees get an environment which ensures constructive criticism or feedback for their personal development. Such factors usually work as motivation for the employees and so, finding there are opportunities of learning in the organization, the employee decide to stay in the organization for a longer period of time.

In order to find out the prevailing situation in RTM, employees were asked whether RTM provides any reward after the completion of reaching a tough target. 8 people out of 20 (40%) agreed that RTM provided the necessary reward and recognition for achieving the target.

Additionally, 6 out of 20 people (30%) agreed that RTM had a fair promotion system which worked as a motivational factor in order to be judged by the employees’ performance, rather than being biased.

Component 5: Personal Growth and Learning Opportunities

For any individual being, the opportunities in a company are very important because everyone thinks about the personal development and reach the career goal. Therefore, the more a company provides the opportunities for personal growth, the more an employee learns. Seeing the enormous possibilities of success, an employee lasts longer in the organization.

In order to find out about the opportunities in RTM, the employees were asked whether there were adequate training programs in RTM. 9 out of 20 people (45%) were neutral about this statement. 5 among the rest (25%) disagreed about the adequacy of the training and development programs.

8 out of the 20 people (40%) agreed to the fact that employees were able to get adequate support from the seniors and supervisors which helped them to build their skills overtime. Even the strategy of job rotation helped them to explore the company and find out their potential working area as well.

V. RECOMMENDATION

By analyzing the 5 major components and their sub-components, it is quite visible that, in order to retain the employees for a longer period of time, it is very important that these factors meet employees’ satisfaction level. Because, the human assets are more valuable in order to
retain and avoid the extra costs of turnover for a company. Therefore, the recommended points will be:

- In order to retain employees, it is very important that employees get a lucrative pay structure as per their responsibilities and as per the prevailing system in the industry. When this will be assured, the employees will think about staying in the company rather than shifting frequently.
- When the employees seek for overtime salary structure to compensate their extra effort, RTM should address it properly because the overtime salary is indeed an important tool for recognizing the individual’s extra work.
- The attractive compensation packages and incentives sometimes add extra value for a company and therefore, the company can retain employees and attract employees in a greater scale. RTM’s benefit package should be altered from time to time so that it is updated with the prevailing needs and wants of the employees.
- RTM should focus more on the working environment since it is very important for the employees to concentrate properly in the workplace. Following that, the work-life balance in the company will enhance employees’ productivity along with the scope of retaining the talented employees.
- Similarly, the arrangements of training and development programs are equally important for the employees to go through the personal development process which will ultimately bring success for the company. Therefore, the training and development programs will make the employees capable enough to survive in the competitive market.

VI. DISCUSSION

In order to retain employees and save the costs because of employee turnover, each and every company must focus on the variables which are responsible for the success of the company. The alignment of each and every factor such as salary, working environment, work-life balance, giving recognition, personal growth opportunities will ensure a satisfied employee and therefore such arrangement will bring less turnover effect on the company [7].

It can be seen clearly that there is no one single factor responsible for the turnover or the retention of the employees [8]. These factors act more like composite one which can ensure a better image of the company in any industry. From the trend analysis- it can be understood that the companies which are more focused on the factors individually, tend to attract and retain more employees.

VII. CONCLUSION

The importance of employee retention can never be described in the confined factors [9]. Because of the rapid changes in the workplace, the factors also seem to change rapidly, hence the flexibility in following the strategies in case of retaining the employees remain undoubtedly important. This is where the companies adapt to the changes and whichever company understands its employee best, they get to retain the employees by cutting the costs of employee turnover [10]. This is what the done surveys shows- the more a company focuses on its employees by providing all the necessary facilities, the more the employees are willing to work for that company. And such satisfactory level is what ensures the stable human asset in the company.

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Challenges of Maritime Governance and Options for Bangladesh

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Abstract – The oceans are the very foundation of human life. They cover approximately 140 million square miles which is almost 71 per cent of the earth’s surface. Oceans are reservoirs of wealth providing protein, minerals, hydrocarbon, energy and many unknown elements. Human life is dependent on the oceans from time immemorial. With rapid development of science and technology both civil and military use of the oceans are creating new challenges which need regular attention by all stakeholders and authorities of nation states to make the earth safer and ensure sustainable use of resources. The concept of maritime governance is relatively new. But attempts have been made through the years to regulate the use of the oceans in a single convention that is acceptable to all nations. This effort finally culminated with the adoption of the 1982 United Nations Convention on the Law of the Sea, which has gained nearly universal acceptance since its entry into force on 16 November 1994. However, challenges across sea and oceans are appearing with new forms regularly. As we live on land, land-based issues always get a priority over others. Very often we ignore the existence and importance of challenges at ocean which directly or indirectly impact our life. ‘Sea blindness’ of many of the policy makers should take the brunt of the blame. But maritime issues should not persist long as they might gradually make the world cripple. So, governing of maritime zones including space is very important for strengthening economy and maintaining global peace, safety and security of mankind. This paper gives a broad pen picture of some important areas of maritime challenges around us and identifies some major issues of maritime domain of Bangladesh. Finally, it recommends measures which need to be adopted at the earliest.

Keywords – Maritime, Governance, Marine, Seafarers, Ocean Governance, Blue Economy.

I. INTRODUCTION

Nearly two-thirds of world’s people live within 160 Kilometres of the shores. Henrichsen, (1990). Almost 90 % of world’s trade pass over seas. The oceans produce approximately $3 trillion worth of goods and services each year and untold value for the Earth’s ecology. (The Economist, 24 Feb 2014). International ocean governance is about managing and using the world's oceans, seas and their resources in ways that would keep our gargantuan water reservoirs healthy, productive, safe, secure and resilient. Today, 60% of the oceans are outside the borders of national jurisdiction. This implies a shared international responsibility. Under the overarching UN Convention on the Laws of the Sea, states have been trying to establish jurisdictional rights, and set up institutions, and specific frameworks to organise the way humans use these waters. Side by side coastal states are in increased competition to make the best use of it. Bangladesh though a born maritime nation, has been very casual and slow in this aspect to reap the full potentials from sea due to absence of much awareness about importance of oceanic resources and lack of right leadership and skilled human resources on maritime matters.

Good governance for healthy oceans is essential for humankind. Oceans are also home to a rich, fragile, and largely unexplored biodiversity, which provides a variety of important ecosystem services. When there is insecurity or instability at sea due to say, natural or any other man-made reasons like piracy, terrorism, pollution, accidents, disasters, the urge for governance is more prominent. Governance is also required for the vast number of professionals who earn their living from maritime related activities. An endeavour has been made to identify and examine some of the major challenges being faced regularly at maritime sectors. How the challenges may trouble human activities in Bangladesh or elsewhere may also come out of the analysis. Whatever may be the challenge at sea or around the coastal areas, if not addressed properly, these may affect any community, state or region or may be the whole world. International and regional organizations/associations (including IMO, OECD, EU, IORA, ASEAN etc) have their laid down procedures on how to protect the interests of stakeholders at seas and also safeguard the oceanic resources against threats. The challenges faced by the maritime communities around the globe may influence any state or country of the world. Careful study of the ongoing challenges may provide valuable inputs to the maritime stakeholders in littoral countries like Bangladesh.

Bangladesh is the eighth populous country in the world (UN report on world population, 2018) and has 30 % of her population live near coastal region. Though Bangladesh has land boundary on three sides, 95 % of trade is conducted by sea route and almost hundred percent of the whole population would be affected if sea lanes of communication for trade gets disrupted. Recent delimitation of maritime boundaries with her neighbours has rendered Bangladesh it’s sovereign rights at Bay of Bengal over more than 118800 square kilometres of sea area along with further hope of getting rights over extended continental shelf and adjoining areas. This phenomenon has created new opportunity for the country to focus on blue economy where the stakeholders are yet to get fully involved to exploit the full benefits from the sea. Lack of
formulation of clear policies about effective and sustainable utilization of resources, insufficient coordination among stakeholders, responsibilities, inadequate skilled human resources and subsequent maritime governance issues are still persisting. Findings of this study would help in strengthening the arms of the stakeholders to formulate policies and implement the same for successful economic activities.

MARITIME GOVERNANCE

II. CONCEPT OF MARITIME MATTERS

The word maritime has several connotations. Generally, one would equate it with anything connected to the sea. If we commence from the coast of the sea, we might say rivers, coastal zones, living and nonliving resources in and around coast, people having their livelihood, associated infrastructure, transports, marine lives, sea water, living and nonliving resources at sea, resources at sea bed and under sea bed all have connections with the sea or ocean and may be covered under an umbrella named ‘Maritime’. Depending on the professionals who talk on the subject, the terminology takes its own forms. A scientist working on Marine Biotechnology or Chemical Oceanography may call it a matter of marine science. To some professions maritime would mean all sea borne trade, seafarer’s activities or naval affairs. Maritime governance must also include ocean governance. So, by ‘maritime’ for the purpose of this study it would mean all areas and activities on coasts, seas and oceans by the respective stakeholders.

III. METHODOLOGY

Methodology adopted for this paper has been study of secondary sources of reference materials, lessons from seminars, symposiums, focused group discussion, interview, and insight into the research findings of maritime practitioners. However, the researcher takes the responsibility of sharing some findings.

IV. LITERATURE REVIEW

Fundamental research works on maritime affairs including science and technology in Bangladesh are very less due to absence of appropriate institution for maritime higher education in Bangladesh. Majority of the research works on related fields have been conducted by countries of the European Union, China, Japan and some north Atlantic countries. This is because sea used to be an area of concern for a selected few nations who had been called the ancient sea faring nations for their prowess and courage. Now a almost every nation, whether coastal or land locked are concerned about the importance of sea, about maritime safety and security, and the increased interest they now entail (Fernando, 2013). But the requirements of safety and security differ significantly from state to state.

Governance has been defined by the analysts differently depending on the fields they took interest. It became a ‘buzzword’ as has been mentioned by several researchers like Finkelstein (1995), Heretier (2002), Kersbergen and Waarden (2004) and many others. Governance is the conduct of the policy, actions and affairs regarding the world's oceans. Within governance, it incorporates the influence of non-state actors, i.e. stakeholders, NGOs and so forth, therefore the state is not the only acting power in policy making. Most commonly, by governance it means any government's ability to make and enforce rules and to deliver services, regardless of whether that government is democratic or not. (Fukuyama, 2013) and Rhodes’ (1997, p.11) view have been quite pertinent to the subject as they related governance to self-organizing, interorganizational networks characterized by interdependence, rules of the game, resource sharing and significant autonomy from the state. The World Bank (200), outlined (Brooks and Cullinan 2007a, p10) that governance is traditions and institutions by which authority in a country is exercised for common good. This includes the capacity of the government to effectively manage its resources and implement sound policies. Many of the maritime governance challenges that exist worldwide have been most clearly manifested in the European Union. In the subcontinent there is dearth of gap between policy formulation and implementation level. Gibson and Donavan (2000) raised concern about the issues of maritime governance which may be a wakeup call for the leaders having sea blindness.

In Bangladesh, talks on blue economy commenced after settlement of disputes on maritime delimitation issues with Myanmar (2012) and India (2014), (Alam 2014). Hussain, M.G at al mentioned about an underdeveloped blue economy and felt the need of a strategic approach supported with a governance structure. But there is no mention about how the structure would look like. Issue of environment is widely discussed but strategic approach particularly for Bay of Bengal for governance is still missing. Hussain, (2001) has reflected the importance of a well-organized government structure with set of objectives to safeguard coastal and marine environment. Bennett (2000, p. 893) categorically blamed lack of responsibility and enforcement behind all forms of shipping problems which is so important for any maritime state in general. Accordingly, this issue has been examined in context of Bangladesh shipping policy. An effective Code of Conduct is very important for the coastal countries and this has been strongly suggested (Michael. M., 2014) while discussing policies of stakeholder countries on South-China sea. Activities need to be based on rule-based framework and this can be a lesson for every coastal state.

Marine spatial planning (MSP) has been recognized as a practical approach to manage, plan and organize optimum use of resources and manage conflicts and protect ecology and environment of the sea. China has been quite successful (Mi. J.K et al, 2017), and their lessons could be usefully utilized in Bangladesh. Area-based objective
management and objective-based process management are the keys to implement land sea overall strategy and achieve management as well as governance goals and objectives. This conceptual framework as proposed by the Chinese team can be a way out for maritime governance along the coast and sea. There is hardly any research on MSP related issues in Bangladesh. The newly formed university on Maritime arena, namely, Bangabandhu Sheikh Mujibur Rahman Maritime University, Bangladesh has recently taken some initiatives along with Shanghai and Dalian Maritime Universities, China to train some scientists on MSP.

Elements of ‘good governance’ are many and there are debates on the subject. Some of the elements shortlisted are: Rule of Law, Participatory, transparency, consensus-based decision making, accountability, equitable and inclusive, responsive and coherent. These elements are mutually reinforcing and cannot stand alone as has been shown by Yen-Chang (2012). (Figure-1).

Maritime (Ocean) governance is the conduct of the policy, actions and affairs regarding the world's oceans.

Figure-1: Characteristics of Good Governance (Source Designed by Yen-Chiang Chang)

ISSUES OF MARITIME GOVERNANCE

Broadly speaking the issues of maritime governance are intensely complex, overlapping and diverse. It involves different stakeholders (including public or private) who may be locals, national, regional or international. Following Figure-2 shows a conceptual framework of maritime (ocean) governance.

Problem of Maritime Governance are interrelated and needed to be considered as a whole where all nations should co-ordinate. Maritime governance is multidisciplinary in nature. This should look for a balance of the following items:
- Economic activity
- Social equity
- Environmental equality and sustainability
- Maritime safety and security.

There is no denying the fact that there have been a range of international agreements for norm-setting for ocean or maritime governance but at implementation level it suffers. Individual nations are often unable to cope with the issues of ocean/maritime governance. Traditional international and national mechanisms are strained in implementing maritime regimes. Cooperation between stakeholders is extremely essential. Some major issues by sector have been identified on maritime governance which are reflected in the following paragraphs:

Social: Our society is deeply dependent on the oceans for its resources and transit of goods. There have been unplanned developments in different service sectors. Uncontrolled port, tourism etc have the negative impact on environment and cultural heritage. For example, Bangladesh having the owner of world’s longest continuous sea beach, could hardly exploit even 5% of its tourism potentiality. This can be a billion-dollar industry...
in short period of time. It depends on how the politics and government takes this in front as a priority. Human perception on sea is also ambiguous and maritime education is problematic. Practical problems in governance are: Improper planning of the maritime space, identifying the stakeholders, engage them properly and maintaining dialogue. In Bangladesh right after its birth the father of the nation first realized the real need of the sea for its sustainable development and enacted the Territorial Waters and Maritime Zones Act 1974, Act No. XXVI of 1974. But our society had to wait another four decades to see further development on the subject till the delimitation issues were settled at international court with two neighbors recently by the government of Bangladesh. No appreciable progress has been made to develop skilled maritime professionals who would lead the maritime sector in future.

**Environmental:** Oceans have been the men’s biggest dumping ground of wastes. Disposal of industrial wastes, military debris, toxic pollutants on land- based sources are also responsible for 80% of the pollution. (Aggarwal V. K., 2010) (p-24). Just 10 rivers – eight of them in Asia – may be responsible for dumping almost four million tons of plastic into the seas every year. (Cosmos: 2017). Pollution of maritime zone starts from land. With an annual gross tonnage capacity of more than 8.8 million, the Bangladeshi ship recycling industry is one of the world’s most important, second only to neighboring India in terms of volume. Ship breaking industry is a major source of pollution for the sea if toxic items are not managed well. Bangladeshi parliament has passed a ship recycling bill 2018 as the country aims to improve working conditions in its shipbreaking yards. There are still ambiguities in controlling the affairs between the industry ministry and the shipping ministry.

**Economic Perspective:** Breaking down of economic boundaries, globalization and gap between rich and poor have impact on the overall maritime governance. Unbalanced trade, commerce, political control on price of oil, etc. have impact on the international shipping (Shipping Cycle). Finally shipping sector has huge impact on maritime economics. Shipbuilding industry has been a thrust sector in Bangladesh. But the shipbuilders are not fully focused on the subject to train and add value to huge number of cheap labor available within the country. Government’s concerned ministry has to be more aggressive to raise this important sector to a global standard. In the shipping sector Bangladesh has shown a negative growth in the state- owned shipping capacity. The volume of state-owned ship have been reduced 65% (scraped or sold) (Bangladesh Shipping Corporation Portal, 2018) over last three decades which has negative impact on the overall maritime economy of the country. The value of the global ocean-based economy is estimated between USD 3-6 trillion/year and more than 3 billion people rely on the oceans for their livelihoods. The Oceans economy which is also called blue economy, encompasses a sustainable economy for the ocean-based marine environment, related biodiversity, ecosystems, species and genetic resources including marine living organisms (from fish and algae to micro-organisms) and natural resources in the seabed.

**Technological Perspective:** Increased competition to explore sea resources, with advancement of science and technology has prompted developed countries to go deeper into the ocean. Not only that that there are chances of conflicts between states on territorial waters. Uncontrolled use of technical equipments, test of weapons and ammunition have impact both on marine environment as well as on living creatures under water.

**Security Perspective:** Over last two and a half decades major non-traditional maritime security challenges have been: transnational crime, drug, trafficking, piracy, illegal immigration and terrorism issues. These are beyond capacity of any individual state to tackle. International cooperation is essential to deny them access to sanctuaries, weaponry, finance and other resources.

**Political/ legal perspective:** The new law of the sea has increased the demand for uses of the ocean /seas. More than 1/3 of the world oceans fall within the EEZ of Coastal states. So ocean governance has become more complex by the increased number of nation states and their differing interpretations of the LOS. The South- China sea area has been one such hot spot of the region on this subject. Both land and marine space has complex legal regime. Some specific issues are: The legal framework works are evolving rapidly for marine spaces, no right of exclusive use or ownership of marine space.

### Human Perception and Knowledge About Global Common

How much do we know about oceans? Human knowledge on this vast area is still limited and there is ample opportunity to carry out research on this territory named ‘global blue’. Throughout history, the ocean has been a vital source of sustenance, transport, commerce, growth, and inspiration. Yet for all of our reliance on the ocean, 95 percent of this realm remains unexplored, unseen by human eyes. (NOAA, USA). Without knowing the full extent of the oceans we overlook many things which are constantly harming this gift of nature. Above all it is still an unknown territory which will continue to bring new opportunities and challenges. We need to overcome the challenges and exploit the opportunities of this huge gift of nature.

If adequate number of marine professionals, scientists are not created, sea blindness would persist and spread like a disease, which would a mental issue. It must be cleared through proper maritime education and teaching of concerned key personnel including politicians to safeguard interests at sea. Generally speaking sea is a distant place for many people in our society. It is like out of sight and out of mind sort of thing. These people consider sea or sea side only as a vacation destination. Many politicians failed to understand this. Question may arise how to address the issue. Dissemination of maritime correct education at
different levels of the community may find the answer. Maritime institutes need to be strengthened to educate and train people at different levels.

**Shipping and Shipping Related Matters**

International trade and commerce is by and large dependent on effective shipping around the globe. This shipping industry is quite a volatile and dynamic industry, and every year, new challenges are emerging. The rapid rise of technological development and growth of industrialization inevitably influence mechanics of trade and international shipping. Size of the ships are gradually increasing and making it difficult for the ports to accommodate. Increased automation is making the crew size smaller. New challenges are faced by different stakeholders, say builders, owners, agents, breakers, operators (Seafarers) and the business people who use/own them. The economic cycle and the shipping cycle (the micro economic side of both businesses) play a crucial role on the future of ports and shipping, as it has been in the past. Location, size and efficiency of the ports are also important. The stakeholders: mostly the investors, bankers, owners and politicians must have a broad understanding of the different stages in the shipping cycle i.e., Trough, Recovery, Peak and Collapse. Some people may call it a gambling business but it is mostly how best the available information are managed. Those who can do well normally survive. Regarding the latter, Figure: 2, shows the presence of the shipping (or maritime) cycle along the history of the shipping business.

Shipping is not a single industry or a simple activity; it serves and enables almost every other industry worldwide. This is part of a huge global supply chain. To survive it has had to be highly responsive, evolving, sophisticated, interconnected and scalable world markets covering every aspect from building, certifying, insuring and manning the ships to handling, moving and storing the cargo extremely cheaply, all integrated with other hubs and nodes in the global market. When there is a crisis in this shipping cycle, it affects a very large community who suffer financial loss. Along with shipping, maritime transportation from sea to shore is also important. Intermodal connectivity between supply and demand side needs to be smooth. This has been a major issue in Bangladesh. The problem needs to be seen from top and solved holistically through strategic planning. Again, regional connectivity in shipping is important and must be done ensuring states own interests intact.

Many of the maritime safety issues are overlooked at seas unless it is a grave in nature. International law requires that ships have to have a flag but in the case of open registries it often reveals little. Once at sea the ship’s behavior is progressively less regulated the further it is from land. By comparison with its aviation equivalent – ICAO, the IMO has a very light touch on what happens at sea. And that is a significant problem. If an airplane disappears the world knows within hours if not minutes. Ships can disappear undetected for years. If an aircraft bound for Singapore is hijacked to Moscow, it is front page news at once. Unless many passengers are involved a shipping casualty many a times is just a statistic.

**Maritime Seafarers**

The global financial crisis has been influencing various industries including shipping. The shipping industry, carrying most of world trade in volume, has also suffered heavily, due to its close relationship with and functions in the macro economy and international trade. For instance, the Baltic Dry Index (BDI), which reflects the trend of the world shipping freight, dropped down during last decade recession to about 600 within half year from 11,000 in June of 2008. (Y, Shicheng, 2009). Meanwhile, the freight for Brazil steel ores sharply went down from 120 USD/T to 12 USD/T. Generally speaking, for the shipping industry, sharp reduction of freight and hire, limited quantity of cargoes and difficulties in funding are the main problems arising out of the crisis. The crisis also did hit the seafaring labor market. Some possible reasons for the changes of the labor market are:
- Cancellation or delayed ship-building plans due to the world financial crisis;
- Aged and single-hull ships are being phased out due to IMO regulations, for which many seafarers had to be signed off, therefore, the market could then be seen as “ship-owner-oriented market” instead of “seafarer-oriented”. More and more seafarers, particularly the ratings, had to compete with others for a job onboard.

In Bangladesh seafarers have different kinds of problems. Local seafarers once at the fore-front with international seafarer had been on back foot in 2016-2017 due to wrong policies adopted by the regulatory bodies previously. As a result, they have been treated differentially in obtaining their visas. Many of the professionals have been frustrated and returned to shores with different kinds of jobs.

Flag States, Port States and UNCLOS

Under UNCLOS ‘flag States’ have primary responsibility for enforcement of international rules and exclusive jurisdiction over vessels flying their flag. Those States that do not exert effective control over ships flying their flag in accordance with UNCLOS are often referred to as ‘flag of non-compliance’ States. Some fishing vessels continue to change their flag State confirming that the use of ‘flags of convenience’ continues. The countries which register ships, together with their owners and operators, are responsible for ensuring their safety (including the safety of all those on board) and environmental performance. However, not all of them take their responsibilities seriously. Therefore, additional regional inspection regimes have been set in place around the world in order that high levels of control over safety and environmental matters can be applied in these areas. This process is called ‘port state control’ and operates on the basis that when ships call at ports in different countries, those countries have the right to inspect them to ensure that they are seaworthy. Grey areas exist in such activities.

In an ideal world, either all vessels visiting a port would be in compliance with the relevant port state regulations without the need of inspections or alternatively all visiting vessels would be inspected by the relevant port state control authority to determine compliance with the designated international treaties. Neither ideal is realistic. Therefore, a key component of regional port state control is to ensure that sufficient inspections are undertaken to provide a high degree of confidence that substandard vessels are being detected and to provide an impetus to ship-owners to voluntarily comply with the vessel standards. For example, the Paris Port State Control MoU deals with this by encouraging each state to inspect 25% of all vessels which enters its ports. (McDorman, T., 2000).

The 1982 UNCLOS forms the basis of the modern legal framework for ocean/maritime governance. The vast majority of the world’s nations have signed onto UNCLOS, which is known as the “constitution for the oceans.” The treaty provides guidelines for how nations use the world’s seas and their natural resources. UNCLOS has already resolved a number of critical age-old issues. Though some states have not become parties so far, the convention has changed political geography of the world. Despite having a legal framework for ocean governance but how states should act in the discharge of their responsibilities under the convention is still remains hazy.

In spite of UNCLOS, there are still threats to the public order at sea. (Rosen Mark E.2014). Firstly, the issue of continued proliferation of excessive maritime claims, mostly resource-based, with the China Sea as a well-known case between the Philippines and China. Several unilateral claims show lack of respect for UNCLOS as they are the starting points for other claims on Exclusive Economic Zone (EEZ) and continental shelf claims. Another problem is claims over unsustainable rocks or reefs in South China Sea or East China Sea that generate their own EEZs and continental shelves. Secondly, there are terrorist and piracy activities at sea that can find protection under a false flag state. False flags create safe havens for criminal activity. Illegal fishing causes instability in poor coastal nations who depend on fishery. The most controversial aspect of the convention was the regime for deep sea bed mining contained in Part XI and Annex III. Some industrialized states out rightly rejected it. The convention has been ratified by 168 parties, which includes 167 states (164 United Nations member states plus the UN Observer state Palestine, as well as the Cook Islands and Niue) and the European Union. Although the United States now recognizes the UNCLOS as a codification of customary international law, it has not ratified it. However, one of the important features of the convention is that it calls for cooperation between and among states in the implementation of its provisions. It is expected that future problems would be resolved through such cooperation. There is no doubt with due to rapidly developing technology new scientific research outcomes would bring new challenges. Pressures would come from increase demand for food, energy, growth in communication, trade and transportation and scarcity of other resources, illegal migration, eviction (Rohynga issues as in Myanmar) etc. Convention with all its instruments will play a vital role to settle future disputes.

Maritime Security

Maritime security is crucial to national as well as human security: drug traffickers, gun-runners and terrorists often use the established sea-routes of vulnerable illegal migrants on the journey to their destination to circumvent border controls. Security and clarity of law is also needed to protect vulnerable ocean habitats and the species within them.

The world’s oceans are home to a growing number of active and dormant territorial conflicts, from the East and South China Seas to the Arabian Gulf and the Mediterranean. Many of these involve conflicts over the delimitation over Exclusive Economic Zones (EEZ) and the ownership of contested islands. The opening of the Arctic, to which several emerging powers are drawn for trade and economic resource reasons, has added a new set
of issues. Though there is almost universal political agreement that the militarization of the Arctic should be avoided, the reality is that currently only militaries are capable of providing some of the services needed for commercial shipping. Moreover, given the weakness of the Convention on the Law of the Seas (UNCLOS), “claimants with the best-developed tools will be the most capable of exploiting the legal limbo in maritime disputes.”

Foreign fishing fleets, for example, are able to deplete the fish stocks of other countries, lacking these capabilities.

Second, the control and protection of critical sea-lanes and infrastructure has grown in importance for new emerging powers in line with their growing economic capacities and needs. Due to the rapid increase of carbon fuel prices and the growing demand for rare metals over the last decades, deep sea drilling and ocean floor exploitation have become financially more feasible. This has led to an increase in offshore prospecting and drilling in many parts of the world’s oceans and revived dormant conflicts over delimitation, as in the South China Sea. Just like critical sea-lanes, these oil platforms and pipelines, once constructed, require enhanced maritime security and protection from other actors.

The power to govern the sea is clearly more complex than a simple “command of the sea”. It is no longer concerned with winning the war against a would-be adversary and deterring future aggression. The old image of sea power—war fighting, deterrence and power projection—increasingly has to adapt to the power to govern the sea in the execution of good-order tasks that require interdependence and integration.

Maritime safety as the first step towards broader maritime security is one area of ocean governance with regional connotations that is considered as vital to the development and prosperity of any ocean region. Interdependence between nation-states is vital to enhancing management of ocean resources, maritime safety and security, as well as protecting the marine environment and preparing for disaster management. The example of maritime safety and security may serve to illustrate the importance of interdependence between nation-states. The Proliferation Security Initiative, Container Security Initiative, port state control, Suppression of Unlawful Acts Convention and the International Ship and Port Facility Security Code are some disparate arrangements that reflect the interdependence in strengthening the maritime safety and security regime at national, regional and international levels. In the implementation of these arrangements, integration of maritime resources within nation-states is fundamental to the development of an integrated balanced strategy.

Piracy is an old issue and its presence could not be stopped over the years.

• It is since the 1980s that the International Maritime Bureau (IMB) started collecting data regarding piracy systematically

• Two areas received special attention: West Africa and Singapore area

• Piracy at the Horn of Africa remained challenging for a long time; considered to be the hotspot of piracy (off-coast of Somalia)

• With the concerted efforts of the navies of the USA, EU, NATO and other states, it waned after 2011-12 (considered to be the peak of piracy); however, international maritime groups warned about the return of piracy from last year due to increased activities of illegal fishing in the region.

• Southeast Asia has replaced the Horn of Africa as the top hotspot for maritime piracy (ISIS in Marawi—southern Philippines)

• According to the IMB, there were 178 piracy attacks in 2015

• The Philippines, Malaysia and Indonesia have agreed to conduct naval security patrols in the region: led to 35% decrease in piracy in 2016 (from 3674 in 2015 to 2,283 in 2016 but from no death in 2015 to six deaths in 2016)

• However: global rate of piracy has decreased (443 attacks in 2010 and 2003)

Threat to Marine Environment

Pollution and Physical Damage

Some two-thirds of the world’s oceans are beyond national jurisdiction. So there is a general feeling like ‘Everybody’ responsibility is no body’s responsibility’. So monitoring the whole oceanic environment is a huge challenge for global community. Pollution and Physical Damage to oceans have always been subject to human activities. To a varying extent, these activities have adverse impacts on the state of the marine environment. Two types may broadly be distinguished: pollution and physical destruction.
### Sources of Pollution

<table>
<thead>
<tr>
<th>Pollutants Item</th>
<th>Categories</th>
<th>Sources</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbon (Mostly Petroleum Products)</td>
<td>Alkenes Napthenes Aromatics Halogenated Hydrocarbons, Polycyclic Aromatic hydrocarbons PHA (Carcinogens)</td>
<td>Vessels: accidentally or willingly, Offshore oil platforms</td>
<td>Toxicities of marine habitats. Toxicities of Marine Environment</td>
</tr>
<tr>
<td>Persistent Toxic Substances (PTS)</td>
<td>Perfluorooctyl</td>
<td>Used in treatment of fabric Electronic goods</td>
<td>Noxious Substance for human consumption</td>
</tr>
<tr>
<td>Heavy Metals (Sp gravity &gt;4)</td>
<td>Natural component of earth’s crust cobalt, zinc, copper, mercury lead, cadmium.</td>
<td>Polluted Water in estuaries, ports, break yard, Spoil from dredging channels.</td>
<td>Severe adverse effect on organisms.</td>
</tr>
<tr>
<td>Radioactive Materials</td>
<td>Potassium 40</td>
<td>Discharges from cooling water from nuclear power plants, waste from reprocessing plants military weapons testing.</td>
<td>Dumping of solid nuclear waste</td>
</tr>
<tr>
<td>Nutrients</td>
<td>High level Nitrogen &amp; Phosphorus Compounds (Eutrophication)</td>
<td>Severeely damaging effort on marine environment. Changes growth condition of phytoplankton.</td>
<td></td>
</tr>
</tbody>
</table>

### Maritime Spatial Planning

Increasing the number of population and subsequent competition for limited resources, natural and man-made hazards, lack of economic opportunities, important ecological hot spots, etc, calls for distinctive coastal management. Maritime Spatial Planning has been done very successfully in some of the European countries and China. The government of Bangladesh has recently given importance on the subject realizes this need, and special reference to coastal issues has been repeated made in government policies, strategies (including national strategies for poverty reduction) and planning documents. In Bangladesh there are particularly three reasons for initiating the Marine Spatial Planning (MSP):

- The coastal zone is lagging behind in socio-economic developments on many respects;
- Poor initiatives to cope with different disasters and gradual deterioration of the environment;
- The coast zone has the potential to contribute much in national development. No substantial planning has been done about the tourism potential of huge coastal areas of Bangladesh. Large scale raising of unplanned infrastructure in and around the Cox's bazaar, Kuakata, and other islands are matter of great concern which needs immediate attention to avoid further damage.

To strengthen Marine for Bangladesh Governance following need to be done:

- Adopt a holistic approach to all marine and maritime issues: the Integrated Maritime Policy;
- Marine spatial planning be given top priority so that marine areas are well demarcated and marine environment is secured without overlapping critical areas and
- Avoid duplication of efforts;
- Put in place a robust set of mandatory environmental rules to ensure maritime actors use marine resources sustainably, wherever they operate:
  - Develop level strategy to boost sustainable and inclusive blue growth, including blue economy considerations in external policies as regards natural resources, energy, trade, development and security;
  - Put in place national and local strategies to address common challenges and opportunities, collaborating closely with distant countries and stakeholders from all relevant sectors;

### Damage to Habitats and Animals

Even without causing pollution of the marine environment, ships can harm oceanic habitats and wildlife by direct physical impact. Physical impacts on habitats are caused by anchors and grounding of ships. Coral reefs are particularly at risk from groundings or anchoring. With respect to the latter, damage is caused either by the direct impact of anchors or from the dragging and swinging of large anchor cables and chains. In Bangladesh environmental specialists are great concerned about the ship-breaking industries. Unless the leaders of this industry do not comprehend the danger of toxic substances which might pollute the sea, there will be chances of polluting sea and ultimately will damage habitat and valuable fish resources.
Develop fund for higher education and research for marine and maritime education, improving cooperation and information-sharing, and making maritime data publicly accessible;

Engaged in international and cross-sectorial forums to address the common challenge of ensuring safe, secure, clean and productive seas and oceans worldwide.

Considerations for Successful Ocean Governance

- Requirement to take wide-ranging perspective in planning phase.
- Detailed knowledge and understanding of the specific areas of interests, natural process and dynamics of marine/coastal system.
- Careful consideration about future implications and effect on people around the target maritime zone.
- All stakeholders Participation is a must along with local administrative bodies.
- Use of appropriate instruments say research, education, technical solution, legal basis, economic supports agreements.
- Human capacity at all levels need to be improved up to any international level (benchmark) set through comprehensive maritime education, multidisciplinary training and research'.
- Use of appropriate digital technology for MIS and network.
- Inter disciplinary Research for outcome based development.
- Conflict resolution mechanism, public policy making.
- Coastal forums at national and regional level.
- Understanding Strategic Impact assessment.

Any regime who wants successful governance would have to acquire on the following attributes:

**First:** Political will to govern or control.

**Second:** Rule of law, set standard or principle.

**Third:** In possession of a maritime policy (constitutionally) for all affairs of the nation at sea.

**Fourth:** Some sort of Military command of the sea and regulatory proceedings when requested.

V. CONCLUSION

Challenges for Maritime or Ocean governance are numerous and each one is important. In order to govern activities at sea we need to set certain standards. We need to establish rule of law to govern activities by providing broad orders and create obligations and responsibility. This would aim to establish security, stability, order, peace and minimize injustice. 

Health of UNCLOS and other the legal framework is important. But there are areas of uncertainties and challenge to some particular elements of international law which need to be resolved. Best means to resolve issues over resources and their use are more and more interactions and negotiation. Arbitration, cooperation between stakeholders, MoU agreements, engagements between security practitioners and services are also important to build confidence. 

Maritime higher education and research are important to develop skilled human resources as would need for the different professions through well designed educational policies. Here regional and international cooperation would be required to share resources and information to boost the activities at seas.

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Skema, Interactive knowledge platform for transport


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Robert B. Clark, supra, note 110, p. 99 et seq. The atmospheric input pathway is more important for open ocean areas; heavy metal pollution in coastal areas originates mainly


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[23] Robert B. Clark, supra, note 110, p. 99 et seq. The atmospheric input pathway is more important for open ocean areas; heavy metal pollution in coastal areas originates mainly

[24] riverine inflow, see SRU, supra, note 137, p. 54.


Value Chain Management of Chili: An Empirical Study

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Abstract – The study evaluates the chili supply chain and finds opportunities and challenges of traditional practices, and analyses the value chain of chili from farm to market. The study also estimates the Benefit Cost Ratio (BCR) for chili farmers and examines the distribution of the added value among the value chain actors-farmers, traders and retailers. A value chain model was developed and confirmed by more than two hundred respondents comprises of all the value chain actors, including farmers, traders, retailers, consumers, and other stakeholders. Both primary and secondary data were used in this research, and a simple statistical techniques were used for analyzing the data. The study reveals that there was a huge potential for farmers in growing chili, while the post-harvest loss was found very high and a lots of middlemen were exist in the chain. The result of the value chain analysis shows, farmers’ share of the added value was the lowest, while the retailers were bagging the highest. The research outcomes need to be applied by the policy makers, researchers and the implementers for the betterment of the farmers and consumers.

Keywords – chili supply, market, value chain, BCR, Bangladesh

I. INTRODUCTION

Chili is one of the most important and the largest produced spice crops in Asia. The Chili is used as a spice in a variety of cousins all over the world in different forms as green chilies, dried red chilies as a whole or in the form of powder. The scientific name of the chili is Capsicum Sp. Chili is a widely cultivated spice and also one of the most important cash crops in Bangladesh.

There are more than 400 different varieties of Chili’s found all over the world. It contains large amounts of vitamin C, small amounts of carotene, vitamin B1, vitamin B2, vitamin C, potassium, magnesium, and iron (USDA Nutrient Database).

This paper attempts to review the existing spice supply chain, evaluate the prevailing practices and their mode of operations, and finding constraints and opportunities. The study also analyses value chain of the mostly used spice - chili in Bangladesh, identifies the financial Benefit Cost Ratio (BCR) for chili farmers, and analyses the distribution of the added value among the value chain actors, including farmers, traders and retailers.

II. LITERATURE REVIEW

Chili is a widely cultivated spice and also one of the most important cash crops in Asian Countries, including Bangladesh. It has become an essential ingredient in the meals of the Indian subcontinent. Most of our households always keep a stack of fresh hot green chilies at hand, and use them to flavor most curries and dry dishes. It is typically lightly fried with oil in the initial stages of preparation of the dish by using spices and chilies. It has diversified uses; the peoples of Bangladesh are usually used chilies in all curry preparation like meat, fish, bles, pulses etc for its typical colour, taste and flavor.

Source: BBS Year Book of Agricultural Statistics 2015

In 2013-14, Bangladesh produced around 110,000 tons of chilies in 222,000 acres of land. But the total cultivated land for chilies is being decreased every year since 2010-11.

Faridpur, Barisal, Comilla, Bogra, Dinjpur and Jessore are the most chili growing districts in Bangladesh (BBS, Year Book of Agriculture Statistics, 2015). The Government of Bangladesh has, therefore, provided priority to the agriculture sector to increase the production of chili by giving subsidies to the farmers on different inputs such as seeds, fertilizer, irrigation etc. to achieve self-sufficiency in chili production.

Global production of chilies is increasing over the years and it was approximately 31 million tons in 2013. Major chili growing countries are India, China, Peru, Thailand, Pakistan, Bangladesh, Myanmar, Ethiopia, Mexico, Vietnam, and Ghana. India is the top among all the world producers that produced 1.37 million metric tons of dry chilies in 2013-14. India is followed by China, Peru, Thailand and Pakistan. In 2013-14, China, Peru, Thailand and Pakistan produced 300,000 tons, 164,000 tons, 156,000 tons and 150,000 tons of dry chilies respectively (FAOSTAT 2015)
Asia is producing the highest quantity of dry chillies in the world. In 2013, Asian countries produced over 2.38 million tons of dry chillies, which comprised 68.7 percent of total dry chillies production in the world. Europe, America, and African countries produced world’s 3.3 percent, 7 percent and 20.9 percent of chillies in the year 2013.

Table 1.2: Dry Chili Production in the World (2013)

<table>
<thead>
<tr>
<th>Continents</th>
<th>Production (Tons)</th>
<th>% of World Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>2,383,837</td>
<td>68.7 %</td>
</tr>
<tr>
<td>Europe</td>
<td>115,743</td>
<td>3.3 %</td>
</tr>
<tr>
<td>Oceania</td>
<td>4</td>
<td>0.0 %</td>
</tr>
<tr>
<td>Africa</td>
<td>725,420</td>
<td>20.9 %</td>
</tr>
<tr>
<td>America</td>
<td>243,530</td>
<td>7.0 %</td>
</tr>
<tr>
<td>World</td>
<td>164,511</td>
<td>100 %</td>
</tr>
</tbody>
</table>

Chili is not only an important spice in Bangladesh but also an important commercial crop. Apart from using it in the kitchen on a daily basis, chilies are being used to make beverages and medicine. The demand for chilies is increasing over the years. But total cultivated land and total chili production in Bangladesh is decreasing over the last few years (BBS 2015). Therefore, Bangladesh had to import 13,177 MT, 21,878 MT and 28,863 MT of dry chillies in the year 2011, year 2012 and year 2013 respectively. On the other hand, Bangladesh also exported 174 MT, 227 MT and 312 MT of chilies in the year 2011, year 2012 and year 2013 (FAOSTAT, 2015). Prices of both green chili and dry chili were increased from BDT 2629/quintal and BDT 11,353/quintal in 2009 to BDT 4,648/quintal and BDT 13,850/quintal in 2013 (BBS 2015) respectively. In Bangladesh, the price of chili is varying in different seasons. Seasonal price variation showed that price of green chilies was minimum in the month of April because of the late harvesting period and supply of low qualities chili, and maximum in the month of August which...
might be due to non-availability of green chili (Hoq, M. S., 2015).

5.2.1 VALUE CHAIN ANALYSIS OF CHILI

The researcher conducted FGD (Focus Group Discussion), and interviewed a number of chili farmers, collectors, wholesalers, and retailers and collected data at different level starting from input through consumption. The value chain analysis of chili has been provided below:

![Value Chain Analysis of Chili](image)

**Fig. 1.3: Market price of Chillies 2009-13**

**Fig. 1.4: Import & Export of Chili 2009-13**

The data for value chain analysis were collected from three different areas. Then the average figures were selling price of green chili was Tk 50.00 per Kg, while the farmer’s cost of inputs for producing per Kg green chili Tk 43.85. Hence, farmer’s value addition was Tk 6.15 per Kg, and financial Benefit Cost Ratio (BCR) for the farmer was 1.14:1.

Out of total revenue of Tk 90.00, the retailers’ share was the highest at Tk 25.00, which is over 50% of the total added value from farmer to consumer. The next large
margin was Tk 15.00, made by traders, which was also over 30% of the total added value. Farmer added the least margin of Tk 6.15, which was only 13.33% of the total added value.

5.3 Harvesting of Chili

Chili harvesting should be done during early morning. Chili is generally harvested when ripe, but it also can be harvested at a green, immature stage (Kitinoja et al., 2003). Maturity of green chili can be based on size, firmness, and color. The majority of the farmers in Bangladesh harvested their chili both green & ripe stage. The percentage of the producers who harvested only ripe stage was insignificant. Fifteen percent (15%) of the chili producers mentioned that, they harvest the chili at green stage, and the majority (85%) of the farmer harvest chili both the green and ripe stage. All the farmers of the study areas harvested chili by hand (Hoq, 2015).

5.4 Post-Harvest Management of Chili

Post-harvest handling is the stage of crop production immediately following harvest. In the study areas, different post-harvest operations as well as marketing functions of chili were including, harvesting, cleaning, storing, grading, drying, packaging and transportation.

5.4.1 Cleaning

Chilies are cleaned in the field by gently rubbing the fruit to remove debris and soil particles. In case of washing, the water must be cleaned and sanitized with chlorine. After washing, the fruit should be dried properly to prevent decay. On an average 95 percent farmers in the study areas cleaned their chili by separating stem and leaf. Hundred percent farmers used their hands as cleaning tools. On the other hand cleaning practices were absent among the traders (Hoq, 2015).

5.4.2 Shorting and Grading

Grading is pre-requisite for development of the modern marketing system, even though there is no recognized grade standard for chili. In Bangladesh chilies are graded mostly by farmers on the basis of colour and size, before they are brought into the market. The damaged, discoloured and immature chilies are removed depending on market demand.

Hoq found, hundred percent farmers in the study areas sorted their chili on the basis of the ripe, green and disease infected. On the other hand, grading practices was more common among the intermediaries level (Hoq, 2015).

5.5 Processing of Chili

Apart from consuming green chili, it is being widely processed in Bangladesh. The processing of chili is presented below:

5.5.1 Drying of Chili

Sun drying is the most widely used method in the world. Traditionally chili has been drying immediately after harvesting without any special form of treatment. After harvesting of fresh fruits, they are heaped indoors for 2 or 3 days, so that the partially ripe fruits are ripen fully and whole produce develops a uniform red colour. The best temperature for ripening is 22-25°C. The drying fruits are heaped and covered by tarpaulins or gunny bags during nights and spread during day time. The drying procedure takes 5-15 days depending on prevailing weather. Out of 100 kg of fresh fruits, 25-35kg of dried fruits may be obtained. If the harvested fruits are not properly dried and protected from rain and pests, it will lose the color, glossiness and pungency. In Bangladesh Hoq found, drying were most common practices in farmers level. They dried ripe chili in the sunlight for storage. The company agent also dried chili and maintain a temperature as per requirement of the processing industry (Hoq, 2015).

5.5.2 Packaging of Chili

Packaging is an important function for every produce to protect the produce from any damage during storage, transportation and other marketing aspects. It is required at every stage of marketing from the producer to the consumer. In recent years, packaging plays an important role in marketing of produce. Good packaging of chili not only facilitates convenience in transportation and storage, but also attracts consumer to pay more. The packaging reduces the marketing cost and protects the quality.

Hoq (2015) identified, ninety eight percent farmers of the study areas packaged their chili. The most common type of packaging in the study area is gunny bag, plastic bag or polyethylene bag. On the other hand, packaging was more common among the intermediaries level. They also used the same packaging materials as farmers (Hoq, 2015). In Bangladesh, chilies are mostly packed in gunny bags and bamboo baskets. The capacity of gunny bags is generally 20-25 kgs. In case of basket packing the capacity is 20-30 kg. Chilies are also packed in polyethylene bags and the pack size varies from district to district.

5.5.3 Transportation of Chili

Chilies are mainly transported in gunny bags (old or new) and sometimes in bamboo baskets. Transport of Chilies is broadly divided into two phases i.e. (i) from farm to Assembling Market and (ii) from assembling market to consuming markets/places. In the first phase, the producers and village/ itinerant merchants are involved and in the second phase wholesalers and processors are involved.

Small producers carry the produce to the market on their heads. However, most of the farmers transport chilies from farm to market by carts. The rich farmers use trucks and tractor/ trolleys to carry chilies to the markets. In case of dispatches from the markets, use of tractors was very less
but trucks are the main transport vehicles. It is also noticed
that chilies are also being distributed by rail, bus and other
modes of transportation. However, commonly used mode
of transport was tractor or truck.

Hoq (2015) found, 61.5 percent farmers used vans as a
mode of transportation. They also used head and shoulder,
rickshaw, horse cart and van with a diesel engine to carry
chili to the market. 65 percent of the Bepari carried chili
from one market to another by truck and 10 percent Bepari
used boat as a mode of transportation. Sixty percent (60%)
of the Paiker used vans to carry their chili. Seventy percent
(70%) retailer carried chili by vans, 25 percent by rickshaw
and 5 percent on head and shoulder. The retailers did not
use the truck as a mode of transportation (Hoq, 2015).

5.5.4 Storage of Chili

Storage is a very important component of marketing which
has a direct impact on the prices. In Bangladesh chilies are
stored in markets with the commission agents in their shops
for 5 to 30 days. The farmers also stored chili in the houses
for about 5 to 15 days. The chilies are mostly stored in
gunny bags by the producers, wholesaler and exporters for
a period of 1 to 6 months depending upon the market
conditions. In some places, chilies are stored by producers
in earthen pots even for one year, while other places, chilies
are stored in Bamboo basket by the farmers in their own
house.

The farm level storage capacity among the chili growers is
not adequate in the country. Well maintained storage units
in the market yards with low and uniform storage charges
would encourage more farmers to store chilies in the
market places and improve their bargaining capacity.

Hoq (2015) identified, the percentage of the producers who
made the storage practices was very low. Some producers
kept their chili in the house only for one or two days before
selling it, this practice was not treated as storage. The
majority of the producers and also traders did not make
storage practices because they did not have enough
information about the storage facilities for green chili. The
producers and traders stored green chili at home following
traditional methods like open floor or jute and plastic bags
and dry chili at polyethylene bag wrapping with plastic or
jute bag.

5.6 Supply Chain of Chili

A supply chain represents the participants involved in the
flow of product from farm to market (including traders,
processors and exporters). The supply chain of chili in
Bangladesh is presented in Figure-7.6.

Figure-1.6: Chili Supply Chain
5.6.1 Agents of Chili Supply Chain

There are several agents involved in the marketing and distribution of chili. The agents involved in the chili supply chain are as follows:

**Faria**: Farias are small traders and they are dealing small scale business. They purchase chili and other vegetables from the producers in the village (farm gate) or in the local market, and sell to the Arathdar or Bepari. Sometimes they sell the produce directly to the rural retailers.

**Bepari**: Beparis purchase chili and other vegetables from the producers at the local market and bring them to Arathdars at the urban wholesale market for selling the produce to the Paikars and the retailers. Sometimes they buy chili from the Farias.

**Arathdar**: Arathdar are commission agents, who have fixed business setup, and operate in the wholesale market. They take commissions from both buyers and sellers.

**Paiker**: Paikers are wholesalers, who purchase vegetables from Beparis through Arathdar and sell those to the retailer or the consumer.

**Retailer**: Retailers buy chili from Arathdars or Paikers and sells these to the consumers.

**Importers**: Importers are big merchants, who are opening Letter of Credit (L/C) and importing chilies mostly from India and selling chilies to the processors.

5.6.2 Chili Marketing Channel

There are several marketing channels active in the chili supply chain. The farmers are either selling the produce to farm gate or local market or urban market. The major marketing channels have been presented in Figure 1.7.

**Figure 1.7**: Chili Marketing Channels (Farm to Market):
Channel 1: Farmers sell their chili to the contractors or farias in the village (farm gate). Then the chilies go to retailers through wholesalers. Sometimes the chilies go to the retailers from farias directly.

Channel 2: Farmers sell their chili to the commission agents (arathders). Retailers or processors collect the chilies from arathders for retailing or processing. Arathders receive commissions for their service.

Channel 3: Farmers sell their chilies to supply agents of processing companies or supermarkets. Sometimes processing companies procure chilies from farmers under contract farming arrangement between farmers and companies.

Channel 4: Farmers sell their chilies to the local traders in the local market. Sometimes farmers sell chili to the local retailers directly.

Channel 5: Importers sell their chilies to the processors. Then the processed chilies selling to consumers through retailers.

Channel 6: Farmers sell their chilies to the local traders in the local market. Then the chili goes to the wholesalers (Paikers) directly or through Arathders. Retailers purchase chili from wholesalers. Sometimes processors also purchase from wholesalers.

These are the major marketing channels of chili. Apart from these marketing channels, there are some short channels in some specific area, which not very widely operating in Bangladesh.

5.7 Opportunity and Constraints

The study revealed some opportunities as well as constraints in the chili value chain in Bangladesh. The major opportunities and constraints are presented below:

5.7.1 Opportunities:
1. The growing demand for chilies and shrinking allocated land for chilies in Bangladesh indicate more and more import of chilies in this country. The situation provides opportunities for chili farmers filling the gap and earning more.
2. Some parts of Bangladesh are famous for chilies in terms of productivity and the quality of the chilies. Promotion of mass production of chilies can reduce the huge dependency of our dry chili import.
3. Farmers are considering chili as a cash crop, which is commercially cultivated in few areas in Bangladesh.

5.7.2 Constraints:
1. Chili plants are highly sensitive to rain and other natural disaster. Therefore, farmers are losing their entire crops due to monsoon rain.
2. Farmers and traders lack knowledge of modern post-harvest activities like sorting, grading, processing, transportation and storage. Poor post-harvest handling incurs huge losses for both farmers and traders.
3. There is huge variation in price of green chili due to seasonality and glut production.
4. As the chili market is controlled by some dominant traders, farmers are not earning a fair return from their produce, and consumers are also paying higher price.

5.7.3 Suggested Intervention to Overcome the Constraints:

To overcome the constraints following interventions may be undertaken by Governmental agencies, donors, national and international development organizations:

1. Capacity building of farmers, especially on using modern production technology to avoid rain and other natural disaster and increasing productivity.
2. Providing training on modern harvesting and post-harvest management practices, and ensuring availability of modern transportation and storage facility (such as cold storage).
3. Organising farmers and linking them with the market directly in order to eliminate or reduce the intermediaries.

6. CONCLUSION

This study includes reviewing the existing supply chain chili and analysing value chain of chili in Bangladesh. The study reveals that there is a huge potential for farmers in growing chili in Bangladesh. In the existing supply chain, postharvest loss is very high (between 20% and 40%) and lots of middlemen are there. As farmers are not organized and there are dominating roles of the middlemen, fair price for farmers is uncertain. Hence, farmer’s income is low.

The result of the value chain analysis shows that the financial Benefit Cost Ratios (BCR) for chili farmers is 1.14:1. Only 13.33 percent of the total added value is taken by the chili framers, while 32.50 percent and 54.17 percent of the total added value are taken by traders and retailers respectively.
A Study on Human Resource Management of Brac University

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Abstract – HRM at Brac University deals with the process of recruitment and selection, on-boarding, placement, database management, employee relations management, training and development, performance appraisal, dispute and grievance settlement, retention, separation and termination. There are many success factors of BracU HR regarding its fair and smooth operation, establishing and maintain policy to the organization and making contribution for selecting retaining and deploying most potential manpower to achieve long term best strategy to gain competitive advantage.

Keywords – Human Resource Management, Talent Management, HR Policy

I. INTRODUCTION

Brac University bears a pristine history from the very beginning of its journey. University started its journey in 2001 and successfully acquired notable reputation to its personalized service to the stakeholders. It is completely a non-profit higher educational institution in Bangladesh. Setting up a new standard in the history of education sector especially among private universities, it acquired no one position in QS Asian University ranking, 2018. In providing education to the students it follows liberal arts approach which endures and encourages fresh, creative and innovative ideas. To meet the rising demand of high quality education Brac University provides comparatively better quality of education to its students. It aims to make students highly capable of meeting market demand in any sector of the world. University ensures world class environment and technology for the students. BracU has an enrollment of over 9,000 degree candidates, including undergraduate and graduate students and has more than 8,800 alumni around the world. It provides and ensures every development facility to its students, teaching and non-teaching staffs.¹⁹

II. LITERATURE REVIEW

The Human Resources Department (HRD) is highly committed to the talent management process that is to attract, encourage, develop, and retain potential and high quality workforce that support the University’s common shared goals “Inspiring Excellence”. HRD works for attaining university’s objective to make it as a center of excellence. The HR department abiding by UGC guidelines to the every stages of HR process that starts from the recruitment to separation. BracU HR established human resource policies for teaching and non-teaching staff. The policy include all the rules and regulations, compensation and benefits, arrears and deduction etc. which pertinent to human resource management at BracU. HR maintains and provides a code of conduct on sexual harassment to every employees on their starting day of job tenure and employees are bound to follow the code of conduct as it is. HRD at BracU manages biometric attendance system for the administrative staff. Employees can see their attendance and profile information anytime from anywhere through web access to their profile.

The main objective of the paper is to provide a brief idea about the overall process of BracU HRD which includes Recruitment and Talent Management, HR Operations, Training and Organizational Development. In this paper the author attempts to endorse all the Human Resource activities, Functions and policies maintained by BracU, find their error which are drawing them back and give them some recommendation which may help them to make their situation better.

2.1 HRM

HRM is a comprehensive and systematic approach to the organization including all its functions and the functions working as a whole to achieve organizations goals. It is a practice that each and every organization maintains and follows in managing planned and actual performance of the employees, enhancement and development of organization, safety and wellness of the existing employees, leading and motivating them to achieve organizational goals. It is also a strategic approach far more than personal management takes up every steps to manage stakeholders, external and internal environment and the culture. HRM study deals with the process of recruitment and selection, on-boarding, placement, database management, employee relations management, training and development, performance appraisal, dispute and grievance settlement, retention, separation and termination. The aim of strategic HRM is to manage and develops the organization’s employees to be capable in an effective and efficient way.

Human resource management deals with hiring, motivating and maintaining workforce in an organization. It ensures employees satisfaction and maximum contribution to the goal of company’s
objectives. According to (Armstrong, 2006) (1), Human Resource Management can be defined as “a strategic approach to acquire, develop, manage, motivate and obtain the shared goal and objective—the people who work in and for it.” HRM has undergone many changes over the last twenty years, giving it an even more essential role in today’s organization. In the past, HRM meant to process payroll, ending birthday gifts to employees, arranging company outings in other words more of an administrative role. The main functional area of HRM are Job analysis, design, recruitment, Selection, Training and development, performance management, pay structure, incentive, benefits, and labor/employee relations (5).

Human Resource Management is a function within an organization which focuses mainly on the recruitment of, management of, and providing guidelines to the manpower in a company (2). It is a function of the company or organization which deals with concerns that are related to the staff of the company in terms of hiring, compensation, performance, safety, wellness, benefits, motivation and training. Human Resource Management is also a premeditated approach to manage people and the work culture. An efficient human resource management enables the workforce of an organization to contribute efficiently and effectively towards the overall achievement of a company’s goals and objectives. (4)

2.2 Classification of HRM in an Organization

The traditional method of human resource management involved planned exploitation of staffs. This new function of human resource management involves HRM Metrics and measurements and strategic direction to display value. Under the influence of giving away the traditional method, HRM has got a new terminology called Talent Management. (6) Human Resource Management functions can be of three types like Operative, Managerial, and advisory. Operative functions are- Recruitment, Training and Development, Professional Development, Compensation and Benefits, Performance Appraisal, Ensuring Legal Compliance. Managerial Functions are- Planning, Organizing, Directing and Controlling. Advisory Functions are- Top Management Advice and Departmental Head advice.

2.3 HRM at BracU

Human Resource department are the core part of each and every institution to get competitive and potential man power for achieving advantage over the competitors. It is the frameworks for helping employees widen their personal and organizational, knowledge, skills and abilities. There are many functions are followed globally to manage their employees. The goal of development and training is to make employees even better at what they do. This function helps to improve their personnel to make more commitment, efficient and reliability to the institution. (9) BracU believes that all the employees whether the teaching and non-teaching employees are the most valuable capital of the University. HRD recruits the highest potential and caliber through a competitive selection process based on criteria of UGC and the demands of the departments of the University. It is the hiring of the “right” people that foster learning, developing, growing and striving institution and hence, the University actively pursues hiring of the “best fit” according to need and respecting organizational values through proper human resource planning, using effective assessment methodology, ensuring efficient process and establishing & maintaining a strong University brand. (8) The University offers attractive and competitive compensation & benefits package and facilitate equal opportunity for the career growth and development to all teaching and non-teaching employees. To support the ongoing growth, to sustain it to move forward and to strengthen the commitment of the management of taking the university to the no. one ranked position, HR division has recruited around 400 regular non-academic staffs, 530 faculty members including contractual employees in various grades and in doing so qualitatively HR Division periodically selected on its vacant position some 200 job applicants throughout the years. The HRD structure at BracU are as follows:
BracU recruits, hires, and promotes employees and prospective employees on the basis of individual merit and without regard to age, sex, ancestry / caste, color, disability, gender identity, marital status, ethnic origin, parental status, race, religion, sexual orientation, physical ability and health, HIV/AIDS, culture, beliefs or social background. The policy includes BracU’s commitment to maintain a workplace free from sexual harassment or illegal discrimination of any nature. Recruitment process is transparent and fair and it is done through formal selection team /interview board. In order to increase efficiency in hiring and retention and to ensure consistency and compliance in the recruitment and selection process, the following steps: (HR) Planning, Sourcing and Selection, Offer and Appointment, Induction, placement & follow up process to the end of job tenure. For recruitment of faculty, Brac University has a Faculty Recruitment Committee. The committee includes: Vice Chancellor, who will be the Chairman, Pro-Vice Chancellor, Three educationalists, nominated by Board of Trustees, Two specialists of related subjects, nominated by Syndicate body, Relevant and respective Dean, Relevant and respective Head of the Department or Institution, not below the rank of the Professor. The process of Recruitment is made on the basis of vacancy. Vacancy may occur for some following reasons: such as- Creation of new position in any unit or departments, transfer, or promotion, death, resignation or separation of the employees.

2.6 HRIS at BracU

HRIS is basically used for database management which includes data entry, track, record and payroll management. An efficient HRIS is designed for providing customized data proficiency and management. For facilitating HR department to systematic, synchronize, coordinate and record relevant database management HRIS utilizes. BracU HRD uses their own software’s for employee database management and payroll system management. Using HRIS Reports are: UGC Report, Higher Education Management Information System, Ranking Board related report, Annual Staff Position Report, Audit Report, Employee Joining and resigning Report, Turnover Report, Salary Report- UGC & NBR, NBR Report, Security Agency Report-Govt. and other day to day operational reports as required.

2.7 Employment Classifications

BracU clarify the employment classification so that they can well understand their job status and compensation planning, Sourcing and Selection, Offer and Appointment, Induction, placement & follow up process to the end of job tenure. For recruitment of faculty, Brac University has a Faculty Recruitment Committee. The committee includes: Vice Chancellor, who will be the Chairman, Pro-Vice Chancellor, Three educationalists, nominated by Board of Trustees, Two specialists of related subjects, nominated by Syndicate body, Relevant and respective Dean, Relevant and respective Head of the Department or Institution, not below the rank of the Professor. The process of Recruitment is made on the basis of vacancy. Vacancy may occur for some following reasons: such as- Creation of new position in any unit or departments, transfer, or promotion, death, resignation or separation of the employees.

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2.7 Compensation Guidelines

Compensation and benefits is the most essential element of employment and also the most critical factor of an organization. BracU structured and designed its employee compensation and benefit packages on the basis of its levels. The benefits also may vary from level to level. University provides the most attractive and competitive pay package to its employees. Employees facilitate with all the financial and non-financial packages as per Bangladesh labor law and BracU rules.
2.8 The Leave Management System

The leave management system describes various types of leaves in different level of the organization and also prescribes the process and guidelines for taking leaves for the organization. BracU follows every guidelines of Government for private and public universities in terms of leave management. To calculate leaves it uses its own mechanisms and software. Employees are not allowed to avail leaves over exceeding the rules set by the management. Non-teaching staff can avail earned leave, sick leave, special leave, medical leave, quarantine leave, study leave, extra-ordinary leave, maternity & paternity leave and teaching staff also avails all the mentioned leaves but they also can avail sabbatical leave and duty leave.

2.9 The performance management process

Employee performance management process in the measurement process of employees’ actual performance which is preset by the management that support organization’s goal attainment toward success. It ensures that the workforce is utilizing the resources well for getting best output. High performing employees are the assets to the organization. They holds positives attitudes, use their potential and intelligence, dedicated to work, satisfied with pay packages and committed to the organization. BracU practices Annual Performance Appraisal (APA) system for appraising its teaching, non-teaching and service staff. It is the key tool by which BracU measure the actual performance of an individual and identify the deficiencies/gaps and plan the future pathways for them. The measurement process is done by HR in a systematic way. It has a process for every category of employment. The process is as follows:

2.10 Employee Development & Career Growth

Employee development and growth is one of the most important factor of an organization because employees are the pillars of an organization. If pillars will strong the organization will grow faster. There are many practices are worldwide for employees growth and development. The growth of BracU depends on the success and performance of its employees. BracU therefore offers a variety of educational and training programs to help employees increase their job efficiency and value to the University. The main objective of training and development in BracU is to help develop key competencies which enable individuals to perform current or future jobs successfully. To strengthen the job skills/knowledge of employees, Improve efficiency and productivity, develop the potentiality of employees for maximizing mutual benefit to individuals and BracU. BracU has established Professional Development Training Center (PDC), the center provides extra ordinary training and workshops for the teaching and non-teaching staff. There is a unit established named counseling unit which also provides counseling facilities to the students and staff.
2.11 Separation System

The types of separation recognized under Bangladesh law and practice are: voluntary termination, involuntary termination without cause, Discharge (termination due to physical or mental incapacity, or continued ill health), Retrenchment (redundancy), Dismissal (involuntary termination with cause), Retirement, and Death.

2.12 General Policies of practice

Workplace Health and Wellness Program, Tobacco - Free Workplace Policy, Consumption of Alcohol and Drugs, Health & Safety Policy, Dress Code, Gift Giving and Receiving, Moonlighting, Speculation in Stocks, Notice Board, Business use of email and Internet access, Unauthorized copying of computer software, Use of Service Facilities, Corporate Name and Letterhead, Damage to personal property, Personal Loans & Personal Guarantee, Legal Aid to the Employees, Intellectual Property & Security, Conversation Language, Telephone Etiquette Policy, Quality Customer Service, Visitors, Closed Circuit Television (CCTV) Policy, Staff to get Staff program.

2.13 Code of Good Governance

Harassment Policy, Complaints Handling Policy (CHP), Code of Ethics, Proper Employee Conduct Workplace Violence, Diversity, Staff Discipline, BYOD Controls, Media Interaction and Public Appearances, Use of BracU Name, Facilities or Relationships, In-house Environment Management, Virus Control, System Security, Internet Security, Social Media Policy, Email Management, Employee Liability, Integrity and Business Ethics, Code of Conduct, Personal relationships between staff and students policy, Plagiarism Policy.

III. METHODOLOGY

There are two types of data used in this paper- Primary and Secondary. The source of primary data is, Observation, Information from supervisors, Discussions with internal employees, Open ended questions. The source of secondary data is, Website browsing, annual report of BracU, Different manual and synopsis, Different books and periodicals related public and private University sector.

IV. DISCUSSION

The growth of BracU depends on the success and performance of its employees. BracU therefore offers a variety of educational and training programs to help employees increase their job efficiency that can add the value to the University. BracU views the teaching and non-teaching employees are the most valuable capital of the University. HR Division of BracU recruits staff members of the highest caliber through a competitive selection process based on criteria determined by the needs of the University and the requirements of the position, paying due regard to the importance of recruiting staff on a diverse basis. It is the hiring of the “right” people that foster learning, developing, growing and striving institution and hence, the University actively pursues hiring of the “best fit” according to need and respecting organizational values through proper human resource planning, using effective assessment methodology, ensuring efficient process and establishing & maintaining a strong University brand. BracU is the top ranked university is Bangladesh as per QS Rankings. Its organization structure, Management, Operations are more stable and strong than any other top ranked universities in Bangladesh. In this paper author attempts to highlights all the significant areas of HR functions of BracU. No other top ranked university operating HR centrally as like as BracU, HR implications and practices are there is every instance of the university. Top ranked universities in Australia, Malaysia, Canada, USA, UK have their strong established HRD for the smooth HR process of the teaching and non-teaching staffs. BracU follows their rules, regulations and structures so that in Bangladesh students and staffs can have the top most flavor of a world class educational institution. BracU HRD almost performs all the core functions of HR and follows Bangladesh Labor Law in every aspect. Though there are some constraints over the functioning like budget constraints, building capacity, suitable record room for archiving data, better HRIS System etc. HR operations are operating its day to day functions using a traditional software which is not very up to date and many critical operations HR personal have to done by manually input system using excel or other Microsoft software’s. Though author demonstrated HRM system of BracU HR however it could be applied or compare with the other private as well as public universities in locally and globally. This study unlocks the further frontiers for the prospective research in the field of HRM system in academia.

V. CONCLUSION

In this paper author tries to demonstrate the whole HRM system of Brac University. The history and growth of Brac University is remarkable over the years. The manpower including teaching and non-teaching staffs are very much potential and they always thrive to attain the University goal together. HRD at Brac University is contributing to ensure selecting, retaining and deploying staffs so that University operations can run smoothly. The whole HRM system works by using its own software developed by BITS but still there are some limitations of it but the authority is taking continuous initiative to make it better for further development. The main focus is to serve the stakeholders at its best and acquire the highest ranked university nationally and take place among the best universities globally.
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Abstract – Online recruitment is set to change the way in which companies recruit their workers. Online recruitment, as a fundamental business process, is the removal of complex and unnecessary paper works, and the introduction of streamlined workflow systems, reliable database applications, and efficient communication channels between job seekers and managers. At a relatively low cost, the Internet offers employers and job searchers access to detailed and up-to-date information about job searchers and job vacancies in different locations around the world. In this manner, companies can commit themselves to equal opportunities as job providers and can attract new and qualified candidates. Online Recruitment in the process of searching for prospective employee and stimulating them to apply for jobs in the organization. It is an important function of staffing. If employer chosen the right people for the right job gives them assurance for the success of organization and management is able to achieve its target. It leads to good productivity, morale, and goodwill. The organization makes vacancies known to a larger number of people to the organization through advertisement and publicity and make the larger number of people to apply is called recruitment. The aim of recruitment is to attract qualified job candidates. The organization and employee must understand the required qualification for the job. Recruitment of employee done by the organization after taking at most care if it is not taken properly the organization may face the different problem in future. It requires the details study of manpower planning and if planning is done very carefully it may take to the organization to achieve its target in a shorter period of time. Recruiting is the process of generating a pool of qualified applicants for organizational jobs. Recruitment shows the path for an organization for success and achievement. Recruitment is a process if done carefully may clear way for selection, orientation, induction, and retention. Recruitment is the first step of Staffing. The vacancy arises due to promotion, demotion, transfer, sometimes the organization recruits its older or earlier employee for better performance.

I. INTRODUCTION

In the current marketplace, and with the growth of global competition, organizations are forced to innovate to survive. Technological advancement is considered one of the most influential driving forces, not only reshaping the work fields. Out of the recruitment process is one that has changed a lot of colors in their systematic approaches. The computer-based recruitment system is to replace manual operations of the recruitment process. Firms use an online recruitment system to improve sales and recruiter productivity and manage the entire recruitment and applicant tracking process from a single, easy-to-use interface.

Online recruitment systems automate a firm's staffing and recruiting operations, providing a central repository for candidate data including resumes and applications. With the majority of staffing firms relying on an online recruitment system to track candidates and client’s activities and this is the preferred solution for recruiting high-quality candidates both quickly and cost-effectively.

II. LITERATURE REVIEW

E-recruitment is a new method of recruitment candidate provides all the details and as per the best suitable candidate chooses the best candidate. Before recruitment of an employee the organization must check, employee’s criminal record, education, credit card reports, employment history. If an employee is resigning from the previous organization what was the reason. If the job of employee required driving the organization must check the previous driving record. If an employee is selected on recommendation existing employee, the existing employee should have a very good record in the organization. The employee should ready to take any selection procedure and ready to attend training and development. Outsourcing is a new phenomenon which contains all organization much organization instead of recruiting people to outsource the required task to any other agency. The most immediately apparent benefit of online recruitment is the vastly improved degree of recruitment process management this approach offers. Throughout the entire process of the recruitment process, an online system facilitates a much more streamlined, standardized approach than traditional, paper-based recruitment. Many once-manual tasks, such as sorting, coding, filing, and routing application materials, can now be performed automatically. Some experts estimate that the average recruitment cycle is one-third to one-half as long as it was in the pre-Internet era. This enhanced process efficiency contributes significantly to another major benefit of online recruitment,
its cost-effectiveness. Although the costs of developing and implementing a full-scale recruitment system on a firm's corporate website are often not insensible, recent studies and industry surveys indicate that most firms' recruitment costs have decreased sharply after the shift toward online systems. Some leading-edge online recruitment tools hold the promise of extending the efficiency of this approach even further. Applications like qualification quizzes, instant 'fit' assessments, skill-based evaluations, and other metrics can be administered instantly to candidates over the Internet, thus further winnowing down the number of resumes that must be hand-coded by HR personnel. Although not yet widely used, industry experts see this trend as an important component of online recruitment future. Conversely, even as new and emerging tools can help firms weed out unsuitable applicants automatically, the shift toward online recruitment has also improved the 21st-century job search by allowing employers to cast the broadest net possible in the search for qualified candidates. By using the Internet as a recruitment platform, companies have eliminated many of the geographical, cultural, and time-zone constraints that once narrowed the candidate pool. This benefit is particularly well-suited to today's workplace, in which team diversity is appreciated as a way to gain the competitive advantage in the global marketplace. Experts have also noted that when properly managed, online recruitment's positive impact can transcend the realm of HR and enhance the firm in other ways, as well. In an era in which image is everything, online recruitment can form an important component of an overarching brand management strategy. Whether or not a candidate opts to apply for an open position, the marketing collateral that's packed into a carefully-crafted online job posting can help enhance brand awareness, an intangible but vital variable in today's cut-throat competitive landscape.

Since online recruitment shifts, the recruiting activity forms traditional paper-based into web-based, applicants using the application online probably become the first time gaining the impression of an organization's culture or HR policies. It is crucial for every corporate to have a better image in the applicants' mind which is closely associated with the reputation. Fortunately, there are some works currently regarding internet recruiting shows that online recruiting does not result in lower applicant satisfaction when compared to the traditional recruiting method. In contrary, an analysis of applicants' reaction to online recruitment shows that applicants, who apply for a vacancy by internet recruiting, are likely to proceed with positive reactions. The reason is that applicants can obviously view a wide volume of jobs on websites and it improves the quality of information. It is therefore crucial that organizations introduce the new web-based method into the recruiting system by carefully designing an appropriate website.

The recruitment functions including attractive and qualified applicants, screening potential profiles, rationalizing the applications and selecting process through the internet are known as an online recruitment. It makes the process of finding candidates and new business opportunities quicker, cheaper and more efficient. Online recruitment has enabled corporate bodies and job seekers to become more sophisticated and interactive. It enhances the effectiveness of the recruitment process. To sum up, the general advantages of online recruitment include shorter recruiting cycle time, attract the passive job-seeker, provide global coverage at a constant basis, provide opportunity to address specific labor markets, reach a wider range of applicants, give the company a more up-to-date image, give better quality of response low cost, make easier to apply for jobs, reduce unqualified candidates, give more opportunities for smaller companies, less intrusive, educated and computer literate, thereby, showing some interest in the recruitment company.

But sometimes online recruitment has some disadvantages:
- It discriminates between the internet and non-internet user.
- It creates a contrasting impact on ethnic minority groups leading to a limited demographic scope.
- Sometimes it is confusing for both the employee and the organization to judge whether one is the right choice or not.

### 2.1 Definition

A recruitment management system (RMS), also known as an e-recruitment or online recruitment system, is a multi-component software tool designed to automate and facilitate the processes involved in finding, attracting, assessing, interviewing and hiring new personnel. E-HRM has different names, for example, digital HRM and web-based HRM on the worldwide. E-HRM has been defined as a way of implementing HR strategies, policies, and practices in organizations through a conscious and directed support with the full use of web-technology-based channels.

### 2.2 Objective

In this study, there are two basic objectives in this study.

#### 2.2.1 Primary Objective:

The report aims to provide information on the procedures of recruitment and selection techniques followed by the organizations through HR department.

#### 2.2.2 Secondary Objective:

In this study is an attempt to highlight for local and multinationals are performing on-line recruitment and selection in Bangladesh. This study is strongly informed of how these local and multinational companies conduct the aptitude and psychometric for a candidate and how these help them to get objective, reliable and relevant information of candidates. These organizations always try to add variety to life. They have created an environment where people with energy, creativity, and commitment work together to fulfill
ambitious goals. This report helps us to know how the online selection process of a candidate leads him to become a leader.
1) Online practice recruitment in Bangladesh.
2) To identify the problems involved in online recruitment and selection in Bangladesh.
3) To suggest measures to make online recruitment effective.

III. RESEARCH METHODOLOGY

Both primary and secondary data will be used to make this study. This study will be limited to organizations located in Dhaka city. The proposed study will include testing the theory through observation and data. Purposive and self-selection sampling will be performed. Projects must be around 6 months in length.

3.1 Sources of Data

This is basically a qualitative study that uses both primary and secondary data. The primary data has been collected from a pilot study on some selected industries. Secondary data has been collected from comprehensive literature and other published materials, i.e. Books, journals, research papers and newspaper articles (internet based) to develop a solid theoretical foundation based on empirical evidence.

3.2 Sampling Method and Sample Size

A pilot study was conducted in the form of an individual interview with 15 members from 5 industries. The sampling was purposive with an aim to get an insightful response. Respondents were holding key positions in the HR departments of their respective organizations. 5 different industries were chosen to make the study more representative and informative.

Demographics of respondents in the pilot study

<table>
<thead>
<tr>
<th>S N o.</th>
<th>Name of the organization</th>
<th>Type of Industry</th>
<th>No.of Respondents</th>
<th>Designation/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Meghna Group</td>
<td>Group of industry</td>
<td>04</td>
<td>HR Executive, Sr. HR Executive</td>
</tr>
<tr>
<td>2.</td>
<td>Gramme Phone</td>
<td>Telecommunication Industry</td>
<td>02</td>
<td>Sr.Executive HR, HR officer</td>
</tr>
</tbody>
</table>

IV. CONCLUSION

The results of this study shows that the way of practicing online recruitment is growing up in our country. Most of the Bangladeshi organizations follow online recruitment because it is time-consuming and low-cost process. Thus it is a challenge for Bangladeshi organization to develop the recruiting process as well as competitive advantages for the organizations. This study offers plenty of scope for future HR Managers or various organization to understand the online recruitment process

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An Implementation of Balanced Scorecard on Supply Chain Performance Measurement in Manufacturing Industry

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Abstract - Over the past few decades, business dynamics have been revolutionized that put the arm on the legislative requirements to measure the performance management for manufacturing industry where companies have been observing to find the tools that can evaluate the supply chain management performance commendable. Organizations have witnessed a rapid transformation in their performance measurement system in the last few decades, among the most widespread tools adopted and implemented is the Balanced Scorecard (BSC). Since its emergence, the mainstream of the Fortune 500 corporations was implementing the BSC. Despite the widespread adoption, a growing body of supply chain management authoritarians and practitioners uncovers constraints in the BSC, particularly in its model, execution, and practice. The same group of advocates opposes; these constraints could either undermine the practicality of the BSC or trigger companies to refrain the BSC altogether for better performance measurement alternatives. Hence, the principal objective of this paper is to appraise the BSC as a performance measurement instrument and discuss whether the BSC is, in fact, an undisputed resolution as a corporate performance measurement model.

Keywords – Supply chain performance measurement system (SCPMS), Balanced score card (BSC), buyer-supplier partnership

I. INTRODUCTION

Balanced scorecard was conceptualized in 1992 by Kaplan and Norton with a goal to resolve the inadequacies of the conventional financial-based performance measurement tool that was eventually endorsed by the majority of the fortune 500 corporations and implemented as well [1]. Since then, organizations have been adopting the BSC model to encounter the conventional performance measurement methods which emphasize the financial metrics on isolation. Besides, BSC stresses three performance metrics (learning and growth, internal process and customer) to provide a comprehensive performance perspective [2]; [3]. Despite its huge acceptability and recognition within the organizations, on several occasions, there are unsuccessful incidents discovered in BSC [4]. A group of research scholars uncovers multi-dimensional limitations in the BSC, particularly in its thoughts execution and usage [5]; [6]. The same group of research scholar’s resists, these limitations could either undermine the effectiveness of the BSC or trigger businesses to modify the BSC for improved and comprehensive performance measurement substitutes. Hence, encouraged by the above, this critique delivers a methodical assessment of the execution, usage, benefits, and limitations of the model and practice of BSC that finally recommends a substitute performance measurement model [7].

II. BALANCED SCORECARD (BSC)

Two distinguished Professors Dr. Robert S. Kaplan and Dr. David P. Norton of Harvard Business School back in 1992 first developed the concept of Balanced scorecard to address some of the flaws and ambiguity of previous management approaches [8]. It conveys some precise guidelines as to what companies should measure to align its vision, mission and strategy etc. to assimilate performance across the organization that channels through company objectives and measures all the business units. Subsequently, it aligns all the members within an organization when fully implemented so that, all members of the organization to understand how and what they can do to support the strategy. The BSC model advocates to evaluate an organizational performance measurement through four main perspectives: (I.) financial, (II.) customer, (III.) internal business process, and (IV.) learning and growth.

Figure 1: Kaplan and Norton’s Balanced Scorecard framework [8]

General Electric, back in 1950 conducted a project to develop performance measures for GE’s dispersed business units. The project team recommended that divisional performance could be measured by one financial and seven nonfinancial metrics are as follows [8]:

...
• Profitability (measured by surplus income)
• Productivity
• Market share
• Public responsibility (legal & ethical behavior, responsibility to all stakeholders including shareholders)
• Product leadership
• Employee attitudes
• Personnel development
• Balance between short-range and long-range objectives

The origin of Balanced Scorecard could be apprehended through these eight objectives. Presented by the GE metric based financial aspects, productivity, market share, public responsibility, product leadership, employee attitude, personal development, and the 8th metric captures the essence of the Balance Scorecard between short range and long range objectives etc. have been placed in respective order. Regrettably, the project didn’t get embedded into the management performance appraisal and incentive structure of GE’s business units due to priorities for short-term profits, compromise with long-term visions as well as corporate obligations. At the same time, Carnegie Institute of Technology (later Carnegie-Mellon University) classified several commitments of accounting information in organizations. Some accounting academics recommended procedures through which business expenditure can produce intangible assets that might be capitalized and positioned as an asset in the corporate balance sheet. The importance of human accounting exploded in the 1970s and subsequently, Baruch Lev and his doctoral students and colleagues propositioned that financial reporting might be significant if corporations capitalize their expenses on intangible assets or discover other approaches by which these assets could be positioned on corporate balance sheet [8]

A. Case review of Balanced Scorecard implementation

Initially, the application of the BSC model was found appropriate for organizations using intangible assets to create value but the model eventually has been adopted irrespective of the size of a company and the industry over the past few decades—from manufacturing to services that span from the public to the private sectors. The continual modification of the model amplified its application. Hence, the researcher highlights the application of the BSC model in three distinctive organizations – Foster’s Brewing Group as a strategic management instrument, London Heathrow Airport Terminal 5 Project as a project management instrument and in a small-scale family business. The then Foster’s Brewing Group in Melbourne which has been acquired by the SABMiller Plc. The top management of Foster’s Brewing Group decided to adopt the BSC model as a strategic management instrument in order to obtain and improve intellectual capital and retain old markets while seizing new ones as the group was undergoing a decline in performance. The idea was to invest in intellectual capital to enhance innovation in products, to improve and sustain the brewing firm’s value, to bring competitive advantages and the successful implementation of BSC model upturned the company’s performance by improving the market value. However, in different phases BSC model implementation had uphill challenges as it greatly emphasized on their senior management top-down approach and the departure of some senior management stalled implementation process. Moreover, change of the business dynamics – new competitors, customer tastes induced the BSC models for multiple revisions. The final constraint of the BSC was for the meta-change initiative, which necessities high costs of maintenance and dedicated leadership, either of which could potentially stall the maintenance of the BSC [9]; [10]; [11]; [12]

Ref. [13] investigated the expansion project of Heathrow Airport Terminal 5 and the application of the BSC. It requires the involvement of multiple stakeholders and due to the flexibility in the BSC model, it was implemented as Terminal 5 project so that managers could identify, customize and review performance metrics as per project objective. Finally, the BSC was implemented but it uncovered many critical issues about its applicability in project management, as the success of a project greatly depends on suppliers, the neighboring communities and the government and environment. To implement the model successfully, BSC required significant modifications, altering several indicators from learning and growth to “benchmarks agreed” (includes some financial measures), and “verification planned and work supervised” (includes supervisor training). The lagging indicators were altered from customer to “handover agreed and work complete” and “inspected & protected” and “compliance assured” (include financial measures).

Ref [13] also reviewed the application of BSC in a small-scale organization in order to examine its applicability, its impact on improving the success of a small-scale organization. While adopting the BSC to a small-scale family-owned business, two limitations appeared. The customer perspective was inadequate since the farm business puts equal emphasis on the customer and supplier. The customer perspective was necessary renaming to supply chain perspective. The second constraint was to resolve which perspective was more suitable to address family expectations such as educating kids, vacations etc. which are part of business expenditures since the family is both proprietors as well as employee. To accommodate family expectations, the financial perspective required alternation to include shareholder (family) interests and renaming financial/shareholder perspective.
B. Strengths of Balanced scorecard

Ref. [14] noted that the foremost objective of BSC was to support corporations to develop effective business strategies. Despite a group of researchers who were skeptical to understand the straightforward relationship between the BSC and business performance, the majority of practitioners recommend that its use is beneficial, whether perceived or real, thousands of corporations that have implemented the model. Ref. [15] noted that BSC has an overall positive impact on the performance of an organization but it also reveals that BSC is not favorable in all circumstances. In some aspects or uses, the BSC assist to improve the performance, whereas in many other aspects it hinders performance. However, the model is still emerging and researchers and the practitioners should appreciate considering that BSC is not yet a mature concept and its interpretation and usage vary across researchers and practitioners respectively. The researcher also confirmed that BSC has three common benefits to management. First, the BSC assists managers to focus on strategy, structure, and vision. The focus is important for management to understand and to guide strategy implementation. Second, the BSC assimilates financial and non-financial-based metrics to support managers, emphasis on business process and confirm current business activities and events that provides customer values and long-term organizational strategy. Third, the model helps business professionals to oversee the implementation of a strategy by representing cause-and-effect relationships between employee activities and strategy implementation.

C. Limitations of Balanced Scorecard (BSC) implementing in the manufacturing industry

Ref [16] noted that BSC recommends traditional financial performance measurement tool such as return on investment, net present value, internal rate of return, payback period etc. has two major limitations. First, financial performance contemplates past performance and uses the outcome to inform future business strategies, which does not reflect current changes in the business environment and risk a firm overlooking potentially lucrative emerging opportunities. Second, financial measures are periodic performance measures since they are measured quarterly, semiannually, or annually. Periodic measures mean an organization has to wait for a certain period to evaluate or to develop strategies to improve performance. Since the present business dynamics shifts from time to time; therefore, periodic measures become less effective in evaluating and remedying performance.

Ref [17] noted that BSC performs for the interests of the shareholders while overlooks the benefits of other key stakeholders such as suppliers, the government and the environment. BSC fails to acknowledge the engagement with the employee in its definition, objectives, and measures. And in its internal process and learning & growth performance metrics tough it involves employees, but it does not include employee support at all, the BSC is also unfamiliar to the employees.

Ref [18] noted that the performance measurement system should be appropriately focused on short and long-term results, different types of performances (e.g. cost, quality, delivery, flexibility, and dependability), various perspectives (e.g. the customer, the shareholder, the competitor, the internal and the innovative perspective) and various organizational levels (e.g. global and local performance). The researcher emphasized that BSC failed to focus on green organizations, sustainability, resilient supply chain due to increased uncertainties and risks, agility in the supply chain due to increased competition and short product life and quality improvement initiatives etc.

Ref [19] noted that for better results on implementation of supply chain performance measurement (SCPM), top management should emphasis on improving the high-driving power enablers such as awareness of performance measurement system (PMS) in supply chain (SC), commitment by the top management, consistency with strategic goals, funding for PMS implementation and effective information systems. Enablers of supply chain performance measurement implementation as suggested are: (i). effective information system; (ii). employee commitment; (iii). dynamic, inter-connectable, cross-functional and usable SCPM; (vi). partnership with dealers, distributors, and retailers; (v). appropriate performance metrics; (vi). overcoming mistrust; (vii). funds for PMS implementation; (viii). commitment by top management; (ix). awareness about PMS in SC; and (x). consistent with strategic goals.

Ref [20] noted that strategy, leadership, culture, and capability are the four critical factors to implement SCPM. Each of these factors is interconnected with each other and simultaneously exercise the influence on the implementation of the suggested frameworks.

Ref [21] recommends several reasons for the failure of SCPM’s, such as lack of attention on supply network and strategy. In reality, the concept of the supply chain is not merely a supply chain on isolation rather it is a chain of supply networks. In this networking process, building rapport are sometimes difficult to describe. Incapability of many organizations to make SC visible due to technical and system problem, the unstable association between marketing and supply network activities, lack of managerial awareness to engage the organization’s performance measurement system as a vehicle for organizational change etc.

III. RESEARCH METHODOLOGY

Comprehensive overview on supply chain performance measurement (SCPM) practice is investigated through reviewing widespread research papers and conference papers have been appraised from international journals such as PROQUEST, EMERALD, EBSCO.
IEEE, ACM, ISTOR etc. Meanwhile few interviews were conducted amongst senior executives to understand their experience and the challenge faced while implementing the BSC model.

IV. DISCUSSIONS
The following limitations are observed on the Balanced Scorecard are as follows [22;23;24]

- BSC did not consider leadership and capacity building in its model and performance measurement.
- BSC is devised as a monitoring and controlling tool rather than an improvement tool which gives direction for strategic level instead of tactical or operational level.
- It delivers little guidance on how the appropriate measures can be identified, introduced and ultimately used to manage the business.
- It does not reflect the market competition perspective.
- It does not stipulate any mathematical logical relationships among the individual’s scorecard criteria.
- It is challenging to construct comparisons within and across firms.
- It is not effective for small and medium-sized organizations, because it requires a lot of skill and expertise of the management, time and expenditure of money.
- It does not take into account the relationship of cause and effect over time and provides a mechanism for selecting the best measures of performance.
- BSC particularly refers to the internal corporate perspective. External factors such as risk issues, government regulations, uncertainty, collaborations, sustainability are not considered.
- It does not also consider a continuous improvement.
- BSC does not consider environmental and social factors. It also overlooks sustainability factors.
- BSC model completely fails to identify buyer and supplier relationships, supplier network and strategy factors.
- BSC model also failed to address employee motivation, employee engagement, team building etc.
- BSC model also overlooked agility factors in dynamic environment.
- BSC model also fails to address resilience factors, future business opportunities etc.

Supply Chain Performance Measurement Model

This exploratory study classifies a model where SCOR, input-process, and output model are deep-rooted with strategic, planning and operational level decisions into each stage of supplier relationship management (SRM), international supply chain management (ISCM) and customer relationship management (CRM). In addition to that, the six drivers of the supply chain beefed-up with decision alternatives be it responsive supply chain or be it an efficient supply chain, discussed in the literature review have been penetrated and glued into the whole decision-making process in order to shadow the comprehensibility [25; 26]

![Figure: 2 Supply Chain Performance Measurement Model – Phase 01 [25]](image)

Supplier Relationship Management (SRM) and Supplied Inputs

In the conceptual model, the researcher classified supplier relationship management (SRM) where the focus was on supplier as well as supplier’s supplier in order the supplier to supply all types of materials such as raw, packaging, semi-finished or finished component materials which are considered as supplied inputs. Supplied inputs will be transported through inbound logistics services at the factory premises.

Internal Supply Chain Management (ISCM) and Core Process

In the conceptual model, the researcher classified internal supply chain management (ISCM) which are considered as a core process, where the focus is on the internal purchase, production, and distribution of goods from inbound logistics to outbound logistics. The purchase function focuses on the internal procurement which is seamlessly connected through the factory production as well as the distribution in order to ensure the raw materials to bring in time to the manufacturing site and to bring out the finished goods from the manufacturing site to the end customers. The commercial activities such as clearing & forwarding (C&F), freight forwarding (FF), customs, port terminal, inbound and outbound logistics are closely knitted through this process.

Customer Relationship Management (CRM) and Supplied Outputs

In the conceptual model, the researcher identified customer relationship management (CRM) which are considered as a customer as well as customer’s customer who will
consume the finished goods deals with supplied outputs for different customers internally as well as externally.

Supply Chain Performance Measurement Model
This exploratory study classifies a model where the balanced scorecard (BSC) model is amalgamated where financial, process, learning & development; and finally, customer-centric issues are to be considered along with the model at phase 02.

![Figure: 3 Supply Chain Performance Measurement Model Phase 02 [25]](image)

A. Future research
Future study is recommended to design a comprehensive model and performance measurement attributes to overcome the constrains and limitations where BSC completely failed to address in order to bridge the constraints in the academic as well as in the industry.

B. Contribution
This study unlocks the frontier, particularly model development for the perspective researches in the area of supply chain performance measurement.

I. CONCLUSION
In the past two decades since the commencement of the BSC model, it is now broadly acknowledged across all industrial sectors, from manufacturing to service industries, from large to small businesses and from the public to private projects. The strengths of the BSC model is integrating three non-financial metrics – customer, internal process, and learning and growth – with the traditional financial metrics. The common practices of the BSC are performance measurement, strategic management, and project management. The benefits of the BSC include overcoming inadequacies of the traditional financial-based performance measurement tools, providing a holistic performance outlook, transforming strategy into tangible performance measures, aligning organizational activities to strategy and providing a deeper insight into business operations and ways of creating value. Simultaneously, a handful of companies have been gone through uphill challenges and required extensive modifications in order to implement it in their operations. The BSC model could not distinctly explain the correlation with organizational performance and the objectives, the description of measures also eliminate key stakeholders, the definition of key success factors that necessary in order to identify KPIs is also not elaborated and the four categories of the BSC restricts the view of the organization perception as well. In practice, the BSC concentrates its resource to attain its objectives towards optimizing organizational potential beyond the targets of the BSC; it also ignores inter-organizational innovation; perceives an organization has already hierarchical structures, job responsibilities are also defined and the organization has one-way linear cause-and-effect relationships. These constraints hinder the effectiveness of the BSC and fuels the organizations to reevaluate the ultimate use and gives a second thought whether to abandon the BSC altogether for better alternatives [26]; [27]

REFERENCE


A Goal Programming Approach for Balancing and Scheduling in Extended Manufacturing Environment

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Abstract – In this fiercely competitive era of industrial globalization, to contend and sustain, the manufacturers have no option other than working collaboratively in Extended Manufacturing Environments (EMEs). The EMEs are usually comprised of a single focal company and a numbers of local company having shared and parallel resources. As a consequence, to attain the smooth and balanced flow within EME, the scheduling and line balancing tasks have to be performed simultaneously. But, a de-synchronization can be realized in framing this simultaneous approach i.e. the balancing approaches intended to enhance efficiency by reducing idle time whereas scheduling may increase ideal time within workstations while reducing makespan. In this regard, goal programming models can offer a good solution, available models restrict the incorporation of resource paralleling concept. Therefore, in this research a goal programming model is proposed, by incorporating the concept of resource paralleling, for simultaneous balancing and scheduling the jobs in EME.

Keywords – Goal Programming, EME, Balancing and Scheduling

I. INTRODUCTION

In today’s age of globalization, characterizing by the multitude of customer choices and continual development of improved technology at a faster pace, a complex and competitive operational environment is observed in all over the business sectors. To cope with such situations, the business organizations, irrespective of whether it is of service or manufacturing, have to work collaboratively [1]. As a consequence, nowadays the concept of extended enterprise is getting much priority and wider acceptance in manufacturing and service industries. Generically, the concept of Extended Manufacturing Environment (EME) goes beyond the traditional definition of the organizations as it builds a well-defined alliance and/or the manufacturing networks among the geographically dispersed manufacturing companies, suppliers, business partners, former competitors and customers [2]. In other words, instead of being a large conglomerate, this concept will bind the manufacturers to develop a global competing group [3]. However, managing such an EME is deemed to be a much more intricate task compared to the traditional one [4]. As, for launching new or same products on time, the EME has to ensure the optimal distribution of workloads, sequence of tasks, standard working methods and effective logistic support among its geographically distributed aliases. Whereas, these optimal management of operations demands for exploiting any of the possible scope of improvement at any operational activities at any levels of its focal company or aliases. In fact, nowadays this urge of improvement has become so severe and/or frequent that the management cannot overlook the need of a readily available production planning tools and techniques, which can re-adjust the production system capacities, redistribute the workloads, rearrange the working methods and even re-sequence the tasks [5].

Line balancing is such kind of a classical technique that improves the efficiency of production system by optimal job assignment and reduction of idle time. More specifically, the term “line balancing” refers to a decision problem that help in allocating the tasks to different workstations and/or resources by maintaining the predefined precedence relationship, the number of workstations and/or cycle times to satisfy the customer demand on time [6]. From last century, the line balancing technique is widely adopted in academia and industries for the optimal management of assembly and/or production system [7]. For instance, by characterizing the assembly line balancing problem, the first mathematical model to assign the tasks within their corresponding workstations was formulated by Salveson (1955) [8]. Meanwhile another extraordinary attempt was made by Bowmen (1960) in solving the assembly line balancing problems by means of his proposed linear programming approaches [9]. In his work, depending on the cycle time, workloads and the precedence relations, the elementary tasks were assigned to the corresponding workstations. Whereas, with the aim of enhancing the productivity, Klein & Scholl (1996) also attempted to minimize the cycle time by means of a model [10]. In 1997, for balancing a mixed model assembly line Gökcen and Erel (1997) proposed a goal programming model by featuring assignment, precedence, cycle time, station and assignment restriction constraints [11]. However, the concept of station paralleling was omitted in their proposed model. Besides, to solve a realistic line balancing problem, Ağpak & Gökçen (2005) formulated a mathematical model by featuring the resources [12]. In their work, to balance the
flow line the researchers were focused on the availability and utilization of the resources. In 2006, for balancing a U-line, Gökcen and Agpák (2006) proposed a goal programming model by featuring assignment, precedence, cycle time, station and task load constraints [13]. However, the concept of station parallelism was omitted in their proposed model. In 2010, Scholl, Fliedner, & Boysen (2010) introduces four different assignment restrictions i.e. task restriction, resource restrictions, work station restrictions and the distance restrictions, within the proposed line balancing model [14]. Among these four assignment restrictions, the task restriction which is also known as zoning constraint is used to assign a group of tasks in particular workstations as well as to restrict the assignment of incompatible tasks together.

Meanwhile, by incorporating the concept of workstation parallelism together with assignment restrictions, Tunçel & Topaloglu (2013) proposed a mathematical model to enhance the production rate, line efficiency and the worker utilization of an assembly line [15]. Generically, within a production line, the parallel workstations are used to accommodate the extra-long tasks i.e. the tasks having processing times greater than the cycle or takt time in a particular stage. And thereby, the entire line throughput can be increased up to a certain limits [16]. In 2014, Akpinar & Baykasoglu (2014) also incorporates the concepts of workstation parallelism, assignment restriction together with the sequence dependent setup in their proposed assembly line balancing model [17]. Interestingly, though it is realized that the line balancing techniques directly helps the manufacturer to gratify the on time customer demand, the productivity and resource utilization can be enhanced further by the integration of scheduling concepts along with balancing [18, 19]. But, only few of the researchers have attempted to apply the integrated concept of balancing and scheduling in practice. For instance, by featuring the need of balancing and scheduling, in 2002 Sawik (2002) proposed two different mathematical models. Among which, the first model was formulated to balance and schedule simultaneously whereas the second model performed it sequential manner [18]. Interestingly in 2014, by featuring the balancing and scheduling problems of EMEs, Santos et al. (2014) have presented a case representing three different scenario has considered [20]. For all these three cases, the researchers adopted the longest processing time and Released Longest Processing Time rules for assigning the jobs to the geographically distributed resources and the Johnson Algorithm for scheduling. However, it is believed that the autonomous consideration of the balancing and scheduling problems reduce the quality of the solutions [1]. Meanwhile, to fill this research gap, in 2016, Emrul Kays et al. (2016) proposed an integer programming model for solving the simultaneous balancing and scheduling problem of the extended and/or distributed manufacturing environment [1]. But a de-synchronization can be realized in framing this simultaneous balancing and scheduling i.e. the balancing approaches intended to enhance efficiency by reducing idle time whereas scheduling may increase ideal time within workstations while reducing makespan. In this regards, by featuring the capabilities of optimizing the conflicting objectives at the same time, the goal programming model could offer the best solution. But, as best of our knowledge, most of the goal programming models proposed in literature restrict the incorporation of the concept of workstation parallelism. In response to this issue, to incorporate the concept of workstation parallelism, a goal programming model is formulated and proposed in this research for simultaneous balancing and scheduling in the extended manufacturing environment. The rest of the paper is organized as follows: in section 2, problem definition along with a brief overview of extended manufacturing environment are given. In section 3, the formulated Goal programming model along with necessary elaboration are described. Lastly, concluding remarks are made in section 4.

II. PROBLEM DEFINITION

In this research, an Extend Manufacturing Environment (EME) is considered where a focal company integrate itself and/or perform the manufacturing activities at three geographically distributed local manufacturer to gratify the customer demand. Within this extended environment the focal company is responsible for making the decisions about the assignment of the jobs as well as defining the optimal processing sequence. The following Figure 1, articulate a test case of the extended manufacturing environment graphically.

Fig.1: A typical extended and/or distributed manufacturing environment

In this typical EME as shown in Figure 1, the focal company assign it’s i=12 jobs to resource r=6 of Local company-1, 2, 3. The precedence relation of jobs i can be described as i=1 succeeds i=7, i=2 succeeds i=8, i=3 succeeds i=9, i=4 succeeds i=10, i=5 succeeds i=1, and i=6 succeeds i=12. Since, the focal company has direct interaction with customer, by analyzing the demand it quantifies the cycle time C for each of the local company. It is noteworthy that each of the three local company having resource r =2 is capable to process any of these job i. Moreover, depending on the demand and job processing time, these local companies are also capable to
incorporate the parallel resources. Besides, due to the technical restriction, Job $i=1$ and $i=3$ cannot be assigned in the same local factory. For such an intricate scenario, the focal company has to provide the decisions of Job assignment as well as their processing sequence for the local company. And thereby, the focal company can gratify its customer demand on time by reducing the idle and completion time for each of the local companies.

III. PROPOSED APPROACH

The problem definition as described in the earlier section has exhibited the necessity of formulating a mathematical model for the focal company to balance and schedule the tasks among the local company simultaneously. But, a de-synchronization can be realized among objectives of balancing and scheduling i.e. the primary goal of the balancing is to enhance the line efficiency by reducing the idle time whereas the scheduling may increase the ideal time within the workstations by reducing the make span, which might decrease the solution quality of simultaneous balancing and scheduling. In response to this problem, by featuring the capabilities of optimizing the conflicting goals at the same time, a goal programming model has proposed in this research endeavor for simultaneous balancing and scheduling in the extended manufacturing environment. The notations that are used in this mathematical model are given as follows:


d – Number of resource usages.
\( s_i \) – Number of resource usages.
\( r \) – Number of jobs, \( i=1, \ldots, N \)
\( p \) – Number of parallel resources, \( p=1, \ldots, P \)
\( f \) – Number of local company, \( f=1, \ldots, F \)
\( v \) – Processing time of Job \( i \)
\( C_r \) – Cycle time of each of the local company
\( W_r \) – Subset of tasks that can be assigned to \( r \)
\( ||W_r|| \) – Number of tasks in set \( W_r \)
\( A_r \) – 1 if job \( i \) is assigned to resource \( r \); 0 otherwise
\( Z_{pr} \) – 1 if parallel resource \( p \) is used along with \( r \); 0 otherwise
\( X_r \) – 1 if resource \( r \) is utilized; 0 otherwise
\( R_{rf} \) – 1 if resource \( r \) is utilized in \( f \); 0 otherwise

A. GOAL PROGRAMMING MODEL

Objective Function,

\[ Z = \text{Minimize} \ (d^+_r, d^-_r, d^+_{inc}, d^-_{comp}, d^+_{comp}) \]

Subject to

\[ \sum_{r=1}^{N} A_{irf} = 1, i = 1, \ldots, N \]  \hfill (1)

\[ \sum_{r=1}^{N} r \cdot A_{arf} - \sum_{r=1}^{N} r \cdot A_{brf} \leq 0 \]  \hfill (2)

\[ \sum_{i=1}^{N} t_i \cdot A_{irf} + \sum_{i=1}^{N} t_i \cdot A_{i(r+1)f} + d^-_r - d^+_r \]

\[ \leq C_f + \sum_{p=1}^{P} Z_{pr} \cdot C_f \]  \hfill (3)

\[ \sum_{r=1}^{N} r \cdot A_{arf} - \sum_{r=1}^{N} r \cdot A_{brf} + d^-_{inc} - d^+_{inc} = 1 \]  \hfill (4)

\[ \sum_{r=1}^{N} r \cdot A_{arf} - \sum_{r=1}^{N} r \cdot A_{brf} + d^-_{comp} - d^+_{comp} = 0 \]  \hfill (5)

\[ \sum_{i=1}^{N} A_{irf} - (||W_r|| \cdot X_r + ||W_r|| \cdot X_{r+1}) \leq 0 \]  \hfill (6)

\[ \sum_{r=1}^{n} R_{rf} + d^-_r - d^+_r = R \]  \hfill (7)

The constraint (1) ensures that each of the jobs are assigned to at most one resource at any of the local companies. Whereas the precedence constraints are represented by Eq. (2). In this equation, \( b \) is considered as a job that follows job-a immediately. The Eq. (3) represents the cycle time constraint having the positive and negative deviational variables. The deviational variable \( d^+_r \) denotes a scenario where the completion time of the jobs exceed the cycle time. The reduction of \( d^-_r \) will minimize the cycle time. The deviational variable \( d^-_r \) denotes idle time in resource \( r \). The minimization of \( d^-_r \) will minimize the total idle time. Besides, this constraint also ensures the parallel assignment of tasks having processing time greater than the cycle time. The zoning constraint for the incompatible tasks are represented by equation (4). In this constraint, the negative deviational variable \( d^-_{inc} \) restrict the probability of assignment of the incompatible tasks in the same resource. In other words, the negative deviational variable represents a scenario where task \( b \) is assigned in resource next to task \( a \). Whereas the positive deviational variable represents a scenario where task \( b \) is assigned in resource before task \( a \). Eq. (5) represents the zoning constraint for compatible tasks. In this Eq. (5) if the deviational variables \( d^-_{comp} \) and \( d^+_{comp} \) are driven to zero, the compatible tsk will be assigned to the same station. The resource constraint is represented by Eq. (6) which ensures the engagement of resource allocation along with the task assignment. The restriction on the usage of resources are imposed by Eq. (7). By minimizing the \( d^+_r \) as represented in this equation 6, it is possible reduce the number of resource usages.

B. Elaboration of proposed mathematical models

The elaboration of the proposed goal programming model from the context of test case are summarized under the following subsections.
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Elaboration of Assignment constraint
Since in the presented test case, three local company have
considered and each of which is capable of processing any
of the jobs by r=2 resources, the assignment constraints can
be elaborated for job i=1,…, 12, as follows
A111+ A121+ A112+ A122+ A113+ A123=1
A211+ A221+ A212+ A222+ A213+ A223=1
A311+ A321+ A312+ A322+ A313+ A323=1
A411+ A421+ A412+ A422+ A413+ A423=1
A511+ A521+ A512+ A522+ A513+ A523=1
A611+ A621+ A612+ A622+ A613+ A623=1
A711+ A721+ A712+ A722+ A713+ A723=1
A811+ A821+ A812+ A822+ A813+ A823=1
A911+ A921+ A912+ A922+ A913+ A923=1
A1011+ A1021+ A1012+ A1022+ A1013+ A1023=1
A1111+ A1121+ A1112+ A1122+ A1113+ A1123=1
A1211+ A1221+ A1212+ A1222+ A1213+ A1223=1
Elaboration of Precedence constraint
In the presented test case, it is considered that the Job i=1
succeeds i=7, i=2 succeeds i=8, i=3 succeeds i=9, i=4
succeeds i=10, i=5 succeeds i=11, and i=6 succeeds i=12,
therefore the precedence constraints can be elaborated for
the test case as follows.
(A111+ 2A121+ A112+ 2A122+ A113+2 A123) – (A711+ 2A721+
A712+ 2A722+ A713+ 2A723) ≤0
(A211+ 2A221+ A212+ 2A222+ A213+ 2A223) – (A811+ 2A821+
A812+ 2A822+ A813+2 A823) ≤0
(A311+ 2A321+ A312+ 2A322+ A313+ 2A323) – (A911+ 2A921+
A912+ 2A922+ A913+ 2A923) ≤0
(A411+ 2A421+ A412+2 A422+ A413+2 A423) – (A1011+ 2A1021+
A1012+2A1022+ A1013+2A1023) ≤0
(A511+ 2A521+ A512+ 2A522+ A513+ 2A523) – (A1111+ 2A1121+
A1112+ 2A1122+ A1113+2A1123) ≤0
(A611+ 2A621+ A612+ 2A622+ A613+ 2A623) – (A1211+ 2A1221+
A1212+ 2A1222+ A1213+ 2A1223) ≤0
Elaboration of Cycle time constraint
To satisfy the customer demand on time the cycle time
constraint is introduced in the proposed model. As in the
presented test case three geographically distributed local
factories are considered having resources r=2 for satisfying
the customer demand, the cycle time constraint for each of
which can be elaborated as follows.
t1 * A111+ t1 * A121+ t2 *A211+ t2 * A221+ t3 * A311+ t3 *A321+
t4 * A411+ t4 * A421+ t5 * A511+ t5 *A521+ t6 *A611+ t6 *A621+
t7 * A711+ t7 * A721+ t8 * A811+ t8 *A821+ t9 *A911+ t9 *A921+
t10 * A1011+ t10 * A1021+ t11 *A1111+ t11 * A1121+ t12 *A1211+ t12
* A1221+𝑑𝐶− − 𝑑𝐶+ ≤ C1+Z11*C1+ Z12*C1
t1 * A112+ t1 * A122+ t2 *A212+ t2 * A222+ t3 * A312+ t3 *A322+
t4 * A412+ t4 * A422+ t5 * A512+ t5 *A522+ t6 *A612+ t6 *A622+

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t7 * A712+ t7 * A722+ t8 * A812+ t8 *A822+ t9 *A912+ t9 *A922+
t10 * A1012+ t10 * A10212+ t11 *A1112+ t11 * A1122+ t12 *A1212+
t12 * A1222+𝑑𝐶− − 𝑑𝐶+ ≤ C2+Z11*C2+ Z12*C2
t1 * A113+ t1 * A123+ t2 *A213+ t2 * A223+ t3 * A313+ t3 *A323+
t4 * A413+ t4 * A423+ t5 * A513+ t5 *A523+ t6 *A613+ t6 *A623+
t7 * A713+ t7 * A723+ t8 * A813+ t8 *A823+ t9 *A913+ t9 *A923+
t10 * A1013+ t10 * A10213+ t11 *A1113+ t11 * A1123+ t12 *A1213+
t12 * A1223+𝑑𝐶− − 𝑑𝐶+ ≤ C2+Z11*C2+ Z12*C2
Elaboration of Zoning constraint
From the test case, it is realized that due to the technical
restriction, Job i=1 and i=3 cannot be assigned in same
local factory. To impose this assignment restriction, the
positive zoning constraint is incorporated in the model and
can be elaborated as
−
+
(A111+2A121) – (A311+2A321) + 𝑑𝑖𝑛𝑐
− 𝑑𝑖𝑛𝑐
=1
−
+
(A112+2A122) – (A312+2A322) + 𝑑𝑖𝑛𝑐 − 𝑑𝑖𝑛𝑐
=1
−
+
(A113+2A123) – (A313+2A323) + 𝑑𝑖𝑛𝑐
− 𝑑𝑖𝑛𝑐
=1

Besides, as in the test case the precedence relations of jobs
have described as i=1 succeeds i=7, i=2 succeeds i=8, i=3
succeeds i=9, i=4 succeeds i=10, i=5 succeeds i=1, and i=6
succeeds i=12, the zoning constraint for the compatible
tasks can be written as
−
+
(A111+ 2A121) – (A711+ 2A721) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A211+ 2A221) – (A811+ 2A821) +𝑑𝑐𝑜𝑚𝑝 − 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A311+ 2A321) – (A911+ 2A921) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A411+ 2A421) – (A1011+ 2A1021) +𝑑𝑐𝑜𝑚𝑝 − 𝑑𝑐𝑜𝑚𝑝 =0
−
+
(A511+ 2A521) – (A1111+ 2A1121) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A611+ 2A621) – (A1211+ 2A1221) +𝑑𝑐𝑜𝑚𝑝 − 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A112+ 2A122) – (A712+ 2A722) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A212+ 2A222) – (A812+ 2A822) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A312+ 2A322) – (A912+ 2A922) +𝑑𝑐𝑜𝑚𝑝 − 𝑑𝑐𝑜𝑚𝑝 =0
−
+
(A412+ 2A422) – (A1012+ 2A1022) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A512+ 2A522) – (A1112+ 2A1122) +𝑑𝑐𝑜𝑚𝑝 − 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A612+ 2A622) – (A1212+ 2A1222) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A113+ 2A123) – (A713+ 2A723) +𝑑𝑐𝑜𝑚𝑝 − 𝑑𝑐𝑜𝑚𝑝 =0
−
+
(A213+ 2A223) – (A813+ 2A823) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A313+ 2A323) – (A913+ 2A923) +𝑑𝑐𝑜𝑚𝑝 − 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A413+ 2A423) – (A1013+ 2A1023) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A513+ 2A523) – (A1113+ 2A1123) +𝑑𝑐𝑜𝑚𝑝
− 𝑑𝑐𝑜𝑚𝑝
=0
−
+
(A613+ 2A623) – (A1213+ 2A1223) +𝑑𝑐𝑜𝑚𝑝 − 𝑑𝑐𝑜𝑚𝑝 =0

Elaboration of Resource constraint
The resource constraint are incorporated in the proposed
model to ensure the minimum number of resource
allocation along with the task assignment at various
factories. The resource constraints for the considered case
of extended manufacturing environment can be elaborated
as follows
(A111+ A121+ A211+ A221+A311+ A321+ A411+ A421+ A511+
A521+ A611+ A621+ A711+ A721+ A811+ A821+ A911+ A921+
A1011+ A1021+ A1111+ A1121+ A1211+ A1221) – (2*X1 + 2* X2)
≤0

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(A_{112} + A_{122} + A_{212} + A_{222} + A_{312} + A_{322} + A_{412} + A_{422} + A_{512} + A_{522} + A_{622} + A_{712} + A_{722} + A_{812} + A_{822} + A_{912} + A_{922} + A_{1012} + A_{1022} + A_{1112} + A_{1122} + A_{1212} + A_{1222}) - (2* X_1 + 2* X_2) \leq 0

(A_{113} + A_{123} + A_{213} + A_{223} + A_{313} + A_{323} + A_{413} + A_{423} + A_{513} + A_{523} + A_{623} + A_{713} + A_{723} + A_{813} + A_{823} + A_{913} + A_{923} + A_{1013} + A_{1023} + A_{1113} + A_{1123} + A_{1213} + A_{1223}) - (2* X_3 + 2* X_2) \leq 0

R_{ij} + R_{ij} + R_{ij} + R_{ij} + R_{ij} + d_i^P - d_i^P = R

However, all these elaborated constraint exhibit the mathematical interpretation of the test case representing a typical extended manufacturing environment. The solution of this mathematical model is anticipated to provide a good quality decision for the focal company to balance schedule the jobs in an optimal manner.

IV. DISCUSSION & CONCLUSION

Addressing issues relating to balancing and scheduling problems of the EME in autonomous manner has drawn the attention of significant number of researchers for the last few decades. The current trend is to develop and apply the approaches for simultaneous balancing and scheduling of real life EME. But, for this kind of simultaneous approach, a de-synchronization can be realized among the goals of balancing and scheduling i.e. the primary goal of the balancing is to enhance the line efficiency by reducing the idle time whereas the scheduling may increase the ideal time within the workstations by reducing the make span. In response to this issue, the goal programming models could be adopted to derive the good quality solution. But, most of the available goal programming models proposed in the literature restrict the usage of parallel resources as well as omit the consideration of extra-long jobs. Therefore, by characterizing the urge of incorporating parallel resources, in this research endeavor a goal programming model is formulated and proposed for simultaneous balancing and scheduling in extended manufacturing environment. In future, a solver and/or the heuristic or meta-heuristic models can be developed and/or formulated for validating as well as attaining the optimal solutions of the proposed model.

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Advertisement - Over the Internet VS Traditional Media

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Abstract – A quick and issue free access to data is exceptionally great in the contemporary business enterprise. Over a traverse of ongoing years, the web has turned out to be one of the most impactful platforms as far as advertising is concerned for both large and small organizations. The principle objective of the article is to introduce the different types of viability of web-based promotions and determine the impact of online advertisements through analysis of various findings by conducting surveys. This research is conducted using the SPSS method where different variables were analyzed with respect to views of our sample. The paper contains theory that proves or disproves the fact that online advertisement is a viable platform for publicizing in the field of business and whether the business organizations should integrate this with its existing form of advertisements or not. The theories have been adopted based on previous literatures as well as exploratory research and primary data collected from necessary field work.

Keywords – comparison, Facebook, means of advertisement, media, promotions

I. GENERALITIES TO THE STUDY

1.1 INTRODUCTION:
Advertising influence the way consumers view themselves and the products or services they buy as a lot of necessity in the consumers are generated through how the goods are marketed to them. The message conveyed through advertising appeals and influences the purchasing decisions of consumers. A key to social media is that the consumer-generated content and consumer-fortified content can also influence how people perceive things. The viral nature of brand-relevant communication is why social media is both an opportunity and a threat for advertisers. For determining the relative influence and nature of that influence on a brand, an individual needs to consider the content of the sources, the relative authority of that source, which includes the content itself.

The most common websites such as Facebook, Instagram, Twitter, and YouTube have close to five million visitors daily and thus have to be considered as a very important hub for marketing. For the promotion of a business, these sites serve as very attractive business proposition due to the vast amount of steady traffic every day. In the present situation technological advancement have made social networking to be extremely successful compared to the past and social media marketing is a very important segment in a business, as maximum number of people access these sites regularly.

Even more, there are a vast number of social media sites that could be used for advertising; however the social media chosen for this study is Facebook. The reason for this is that Facebook is the most popular social media website on the Internet. The followers that Facebook has accumulated in South Africa are the highest from all the Social Media mediums available around the globe. Facebook was launched in February 2004. As of 2010, Facebook had over 500 million users (Social Bakers, 2011).

1.2 RESEARCH OBJECTIVE:

There are three objectives that have been identified:
- To know if digital advertising is the best form of advertising and suggest alternatives if there is any.
- To explore the differences between online advertising and traditional forms of advertisements in terms of consumer behavior.
- To understand the demography by analyzing behavioral pattern in terms of preference to a certain form of advertisement.

1.3 STATEMENT OF PROBLEMS:

There are many statistics that are applicable and available for the use of advertising in the Facebook space. Various statistics like number of unique visitors, page views, and frequency of visits, average visit length, and clicks through rates are either totally unsuitable or irrelevant. This reflects a basic failure to capture proper information about the effectiveness and efficiency of the Facebook advertisement. These statistics are merely a count of impressions, visitors, friends, posts and players. This calculation and analysis does not capture the essence of the interaction consumers had with the brand, the degree of engagement felt during and after the interaction, or the effects of the interaction, exposure to brand messages, and brand engagement on measures like brand likability, brand image, brand awareness, brand loyalty, brand affiliation, congruency, and purchase intent. For measuring the effectiveness of social media advertising, a proper balance between quantitative statistics with qualitative insights needs to be maintained so that it cannot be gained from simple statistics that are on offer.
1.4 SCOPE OF RESEARCH:
With the introduction of internet in daily life it has become a necessity that cannot be avoided. People use internet for everyday tasks. Internet is now no longer just a medium of getting information for people rather it has now taken shape of the most powerful medium of communication, entertainment and shopping for people. Each and every day, several new websites are being introduced covering different sections like news, e-commerce information, communication or entertainment. Hence these websites are a perfect place to advertise products and services as many people visit these sites every day from different parts of the world. Another important place for advertisement of the brand name, products or services can be online communities, forums, social networking sites or affiliate marketing websites. All in all, they provide immense popularity to the website representing the business or brand name.

1.5 LIMITATION OF THE RESEARCH:
The main limitation of the study was time constraint. Apart from this there are a few other constraints adding to the limitations. The sample size is limited to internet users and hence the result of the study cannot be taken as universal. Findings of the survey are based on the assumption that the respondents have given correct information. Some of the respondents were reluctant to answer. During the research, some problems were faced in getting proper and timely responses. Sample results may have been biased. Lack of experience was also a factor in terms of carrying out professional research. Being student researchers, it was difficult to directly pick out the key problems from the respondents.

1.6 SIGNIFICANCE OF THE STUDY:
The study would help benefit the future prospective researchers when doing further research on this topic. Moreover, it would attribute to the society and real life of effectiveness of online advertisements.

II. LITERATURE REVIEW
The literature review was conducted via the effective evaluation of selected journals and articles on effective advertising in the social media area based on critical analysis. This review forms an essential part of the research. There are some reasons for which it can be said that advertising on the internet is more effective than other kinds of advertisements. To begin with, people have access to the internet almost anywhere. By marketing the products and services online, the business can reach a global audience. On the contrary in traditional advertising campaign, reach is limited to local populations. Moreover, people in this 21st century are more accustomed to using advanced mobile devices for example smart phones, laptops etc. Hence it is no longer required for an individual to go in front of the computer and go online rather they can browse the internet through multiple devices. Apart from that online advertising provides a measurable result and is cost effective than traditional advertisement. The literature review produces the background for the study. The evaluation of the literature logically leads to the answers required. The literature review served as a precursor to the research, and was a critical and in depth evaluation of previous research. The models used to formulate the hypothesis are discussed in more detail. According to Erin Norman in her article, “Is Social Media Marketing Worth the Investment?” social media and other digital advertising could be useful for the investment. Moreover, it can be an incredibly effective and efficient tool to get in touch with the consumers and also for engaging with them. But at some point it is also vital that brands needs to understand the target consumers, to know whether that particular audience is worth speaking to and what channels are most likely to engage them. Even more from other sources it was found that traditional consumer segmentations in the first step is a good way to start the advertising. But for understanding and detecting the potential customers and ways to reach and locate them, deeper research is required. This will likely be even more critical as today’s teenagers fully enter the marketplace having grown up with a seemingly endless number of media channels at their fingertips and developed a keen ability to filter advertising out. Finally, from the analysis of all the sources and previous researches, the authors found out the following aspects which will help everyone understand the paper:

a) Creating a media usage or engagement segmentation that can be overlaid on a consumer segment to understand exactly where most valuable consumers are available.

b) Turn to values-based research to understand the emotional triggers that engage the target audience. This gives advertisers the information, emotional pulls, key words and phrases they need to make digital content stand out in a crowded space.

c) Use journey research to uncover exactly which points in the purchase process can be influenced by digital media and what else it is competing against.

III. RESEARCH HYPOTHESIS
The research hypotheses will emanate from possible factors that contribute to the effectiveness of Facebook advertising.
To test the effectiveness we will have to measure:
Customer engagement, Brand reputation and Products or services offered to the customer
1. There is a sole factor that has an effect on the advertisement.
2. There is a correlation between two factors that has an effect on the advertisement.
3. There are various numbers of factors that have an effect on the advertisement.

IV. PRESENTATION OF DATA AND CRITICAL DISCUSSION OF RESULTS
In this part, we tried to incorporate primary data we collected from the survey and used that to find some results. There are some methods available out there to do statistical analysis such as SPSS, AMOS, LISREL etc. among which we used SPSS to analyze our data. Following is the analysis of few questions among the 21 questions we had based on the survey conducted on 67 respondents.

4.1 DESCRIPTIVE ANALYSIS FOR DEMOGRAPHIC FACTORS

Descriptive Statistics:

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which of the following age groups are you in?</td>
<td>67</td>
<td>1</td>
<td>3</td>
<td>2.49</td>
<td>.612</td>
<td>.375</td>
</tr>
<tr>
<td>How much influence do you feel advertisements have over your buying behavior?</td>
<td>67</td>
<td>1</td>
<td>3</td>
<td>2.22</td>
<td>.647</td>
<td>.419</td>
</tr>
</tbody>
</table>

Frequencies

Statistics:

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Valid</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which of the following age groups are you in?</td>
<td>67</td>
<td>67</td>
<td>0</td>
</tr>
<tr>
<td>How much influence do you feel advertisements have over your buying behavior?</td>
<td>67</td>
<td>67</td>
<td>0</td>
</tr>
<tr>
<td>Your overall feeling or experience about Online Advertisers</td>
<td>67</td>
<td>67</td>
<td>0</td>
</tr>
</tbody>
</table>

Frequency Table
Which of the following age groups do you belong to?

Pie chart
Which of the following age groups are you in?

Around 94.03% samples are between 18-27 age groups.

How much influence do you feel advertisements have over your buying behavior?

Around 65.67% peoples buying behavior is high-medium influenced through advertisement.

29.9% people are somehow had a good & 26.8% people had bad experience about online advertisement.
According to most of the people (58.2%), online advertisement has the most impact on their buying behavior.

79.1% people agreed somehow on the statement that the number of online advertisements have increased gradually.

V. SUMMARY, CONCLUSION, AND RECOMMENDATION

5.1 SUMMARY OF FINDINGS:
The survey was conducted on the demography we selected, where there were a lot of interesting findings. The survey that was conducted suggests that most of the people in the sample, 62 to be precise among 67, are between the age group 18-27. This means that young people are more likely to get influenced through online advertising. However, almost around 42 people out of 67 samples tend to click on an online advertisement when it grabs their attention. Furthermore, 40.3% people thinks that they mainly focus on the product itself rather than other headline or something else but to some samples, 26.9% to be exact the visual design of the advertisement is more important while grabbing their attention. On the other hand, 55 samples out of 67 are strongly dislike the large pop-up advertisement that covers the entire page, but people are quite interested nowadays on the advertisements that appears in the news feed of social media (Facebook). Even 59.7% of the total sample agreed on the point that ‘Online advertisement has become increasingly invasive’ and according to 79.1% sample, there are a lot more online adverts than there used to be. Moreover, 65.7% sample is being influenced (medium to high) through advertisements on their buying behavior. Eventually, 58.2% sample agreed that online advertisements (mostly through facebook-70.1%) are most influential over their allover buying behavior. Among all, 55.2% sample is mostly interested to get discount offers in their home page. However, overall 55.2% sample think online advertisement has a positive impact on their online browsing experience.

5.2 CONCLUSION:
According to the survey most of the people (62.8%) often click on various online advertisements whenever they find it interesting. However, an advertisement can draw most of the people’s attention by the main product and the visual design of that advertisement. Still then, there are people who never tend to buy anything from online shop as they are so frustrated of being tricked to see an advertisement while browsing the internet. Even many of them have decided not to buy from that company from which advertisement they have been tricked. In spite of everything, most people still think that there is a positive impact of online advertisement on their buying behavior. The marketers and advertisers know this truth that even the upcoming years will be dominated by online advertisements where most of the buying decisions of people will come from how the goods are portrayed in the online media. This is where intelligent advertisers can come into play by adapting to the growing need of advertisements through internet. However, it has been proven in this research that they need to be careful and understand that there is a thin line between being competitive and being over aggressive in advertising which can lead to downfall for them in the long run.

5.3 RECOMMENDATIONS:
While developing an online advertisement, one should pay more attention on the visual design of the advertisement as people become more interested depending on the first impression. Moreover, as the samples have stated that they are much more interested on the advertisements they get in social media, more specifically in Facebook timeline. So this sector can be a good place to grab their attention through customized advertisement. Organizations should start considering the online platform more while giving any advertisements. This platform can be used for reaching more people in very short time which can be very beneficial for them. However, advertisers need to be aware of some unethical advertisement practices that have become a part of each components of internet, be it browsers, multimedia websites and even educational sites which can result in misleading people and thus can hamper the prime goal of this form of advertisement.
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Supply Chain & Online Product Promotion for Organizations: A Case Study in Bangladesh

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Abstract – Organizations play an important role for a development of a country. Every organization has its own supply chain and that works from retailer to consumer. Though, the organization supply chain is managing the operation and promotion activity. However, web recommender system for organization industry could change supply chain promotion, integrated recommender system and develop online product promotion. The organization needs further improvements for online recommender system to enhance the product marketing.

Keywords – Organization supply chain, product promotion, recommender system

I. INTRODUCTION

Promotion is one of the key of the four Ps in the marketing mix and as such to play in market success. The internet’s potential to provide an efficient channel for marketing communications is overwhelming. Product promotion is very important for business initiative. Product promotion is an important role for an organization. The modern technology promotion goes through internet media. Promotion in website via recommendation system change the product promotion dramatically. Spending on product promotion is significant. In 1946, U.S. for product promotion spending was slightly more than $3 billion. By 2010, it was more than $200 billion. An increase in the use of websites for promotion of consumer products by organizations is expected. Organizations encourage visits to their websites using integrated marketing communication and product recommendation system.

II. BACKGROUND AND SCOPE OF THE RESEARCH

Prior search to the need of a promotional website has led us to discover promote product. We wish to take the challenge to help any company to expand the existing product promotion sector by transforming the promotional effort to be in line with the phenomenal demand of contemporary business initiatives [12]. A drastic effort is in need to drive the evolution of product promotion for mutual benefit, through which the proposed website could play the subtle role of agent of change hoping for a remarkable return in preparing for the company.

Hence, developing a web recommended system focusing on various important aspects of product promotion the company is the scope of this research. The proposed website could be linked to the main company portal. The recommended system added value highlighting more potential for economic growth through product promotion.

III. RESEARCH QUESTIONS

Highlighting the research questions here:
1. To what extent that the product promotion as business initiatives?
2. Are the company to take the product recommendation opportunity?
3. How do we investigate and make visible the effect of product recommendation system to the company business initiative?
4. How has the product recommendation system impacted the company?
5. What are the criteria for a successful product promotion?

IV. RESEARCH OBJECTIVES

The research embarks on the following objectives:
1. To determine the aim of the existence of the organization and its operationalization.
2. To investigate the status of organization product promotion.
3. To identify important elements deemed necessary from the perspective of the web recommender system (WRS).
4. To develop a website or content management system in supporting the business initiative of the organization.
5. To examine the impact of online product promotion and performance.

V. PROBLEM STATEMENT
To help organization for promote their product through usage of technology especially the online recommendation, it is crucial that the current status of its awareness and usage are investigated. It is important to know to what extent is the online product for business initiatives? In exploring the inquiry, it may lead us to other related inquiries like, what is the aim of the existence of the organization promotion? The need for this query is highly important since it can shed some light to the understanding of why product promotion for organization. Eventually, most of the organization promotes the product for increasing overall selling. After many years have passed by, it is inquisitively motivated to investigate if the original novel aim is still being hold on to. In relation to that, we could explore to gain understanding to what extent that the organization product promotion operated as business initiatives? And, are the organization operators prepared to take the e-commerce opportunity? Hence, how do we go about to investigate and make visible the effect of product promotion such as product recommendation system. How has the online and recommendation system impacted the organization product promotion?

**I. Product Promotion and Product Recommendation System**

In an age of information overload, the importance of product recommendation systems for online products and services is rapidly growing. Such systems allow buyers to find what they want without wasting their time and enable sellers to provide buyers with the items they are likely to purchase, thereby furnishing benefits to both parties. As a result of this growing importance, fundamental knowledge and techniques for developing recommendation systems have been studied, including content-based filtering (CBF) [1], [2], [3], collaborative filtering (CF) association rule or sequential pattern analysis [11], and hybrid approaches [5]. Product promotion and recommendation system work together to recommend the product to user.

A recommendation system supports users to find information, products, or services (such as books, movies, music, digital products, Web sites, and TV programs, to name a few) by aggregating and analyzing suggestions from other users, reviews from various authorities, and user attributes [6]. Content management system (CMS) is known to be a successful recommendation technique. It makes recommendations to users based on other users’ ratings on contents, putting more weights on those from similar users (i.e., other users having similar personal attributes or product preferences). But to date, recommendation systems have focused mainly on recommending items to individuals rather than groups of people intending to participate in a group activity [7]. In recommendation domains such as shopping and asset investment, it is not a limitation because users in general behave individually and only their personal interests should be considered. In other domains such as movies, trips, book clubs, and restaurants, however, existing recommendation systems have difficulty in aggregating individual users’ tastes into a group's preference properly [13].

**II. Description of Methodology:**

The methodology in this research will involve several different types of method, which implements a mixed-method of appropriate qualitative and quantitative approaches in exploring the problem of organization product promotion. The methodology phases are as follow:

- **Phase 1 - Establishing conditions and technology awareness from existing literature and from interviews with stakeholders**
- **Phase 2 – Developing a set of questionnaires and carrying out investigation**
- **Phase 3 – Developing the web recommender system and organization product promotion system**

  ➢ Carrying out the requirement analysis and design based on information gathered from key people in this research.
  ➢ Developing a prototype for the web recommender system (WRS) which in this case is a website that captures all information and data as being generated by the respective community.
  ➢ Carrying out testing and validating the system for final use.

- **Phase 4 – Examining the impact of online product promotion**

Content Management System Development

As a consequent, in this research we attempt to explore the potential of a web recommender system (WRS) as an organization marketing and development tool for their business initiatives. This effort is partly to answer some of the research questions as posted above. The tool is technically classified under Web 2.0 technology which most of the electronic activities and transactions take place today. By leveraging Google Apps into CMS which will leap into exploration mode.

Cloud computing can be generally defined as a new client-server concept that has grown exponentially over the past few years because of the increase in wireless technology, network speed and devices. It’s basically the same concept as an old office scenario, but instead of files and applications being stored on a hard drive or the server, they are all “in the cloud”, or in a big server farm. The basic requirements are internet connection and...
browser software to access cloud computing application such as Google Apps. To be more specifically, cloud computing providers such as Google and Amazon deliver applications like word processing or image editing, via the internet, which are accessed from a Web browser, while the business software and data are stored on servers at a remote location. In the context of organization, cloud computing offers wide variety of applications to foster efficient knowledge sharing and process efficiency to promote product to the world.

Cloud computing apps such as Google Sites, Google Apps, Google Drive, Picasa, etc. can be conceptually modeled into a cloud of applications as illustrates in Figure 1. The figure shows that cloud software can be supported across different platform and device. Thus, the development of CMS for organization product promotion (OPP) by using cloud computing apps is promising to be adopted due to its simplicity, availability and cost effectiveness of the program.

![Figure 1 The concept of Cloud Computing](image)

Eventually, the proposed WRS will link to various important websites related to this OPP initiative. Each proposed organization website will be developed based on how each of the organization operators would want it to be portrayed to potential customer across the globe. Other than basic information regarding the organization. The WRS WEB 2.0 will be a venture into emerging and potentially transformative research ideas through integration of unique qualitative research process and innovative internet technology and application.

In developing a software project such as the WRS, much research has shown that many large software projects fail because of inadequate requirements [10]. These projects were found to have insufficient software specifications. Software specification can be referred to as a formulation in terms of objects manipulated by the software, in a vocabulary accessible to programmers. They need to capture required relations between each input and output of the software objects. In that sense, Requirement Engineering (RE) is very much necessary for development of any software. RE is concerned with the identification of the goals to be achieved by the envisioned system, the operationalization of such goals into services and constraints, and the assignment of responsibilities for the resulting requirements to agents such as humans, devices, and software [10].

Successful RE involves understanding the needs of users, customers, and other stakeholders; understanding the contexts in which the to-be-developed software will be used; modelling, analyzing, negotiating and documenting the stakeholder’s requirements; validating that the documented requirements match the negotiated requirements and managing requirement evolution [8]. From these definitions, it is obvious that the quality of software requires a step-by-step or structured process of software development. Therefore, a framework of RE process is presented in Figure 2 as a guide for our proposed CMS for the OPP.
By addressing issues pertaining to the design and development of a WRS, this research is anticipated to follow the research paradigm in Information System (IS). There are two research paradigms in IS, i.e. the behavioral Science and Design Science [9]. Broadly speaking, behavioral science researchers search for the truth, while design science researchers seek for utility or to improve the current practice. It is deemed that Design Science is suitable to be adopted and explored in the development of our WRS as it involves an iterative build and evaluates activities [10]. Design science can also be considered as a problem-solving approach by improving the current state of a system. Driven by the motivation and research objectives, design science research methodology (DSRM) is proposed and utilized in this phase of the research which includes those activities.

VI. CONCLUSION

Web based product promotion have made significant progress over the last decade. However, despite these developments, the current cohort of WBR system plotted in this paper still needs further developments to lead product promotion in national and international organization.

REFERENCES


Blockchain Technology in Transport Industries in Malaysia

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Abstract – The study aims to benefit both the industry and the academic community. Creating an industry-specific configuration (sales chain) and extending it to a more general configuration can be useful for companies that want to use the block network in the future or want to understand better block chain technology. In areas other than computer science and finance, there is little scientific study in block technology. Expanding the study area is key to understanding this new technology trend and supply chain management is a key technology development in the coming years. This study is based on a survey of the strategic fit of Malaysian transport management chains. In addition, the key findings of the specific strategic adjustment are to find indicators on the type of supply chains with blocking technology that can have positive strategic implications. Despite the fact that the block pipeline revolutionises business and redefines logistics, existing study is limited in order to categorise the application possibilities of the framework and its consequences. Based on academic and literary knowledge, we classify the possible applications for adoption and provide a framework for identifying the blocking potential of the logistics sector, helping systematically evaluate managers, and begin developing organisational capabilities for successful adaptation and deployment of technology.

Keywords – Blockchain, Strategic Fit plan, Malaysian Transport management chain.

I. INTRODUCTION

With the accelerated pace of innovation, many industries have breaks that can disrupt the emerging business models. Adaptation to a constantly changing competitive environment can have serious consequences. At a faster rate of innovation in 2018, the challenge does not make it easier for companies. It is an important challenge for companies to predict that disruptive technologies have an impact on their industry and what is the consequence of interruptions [1]. On the other hand, early adoption of technological change can give companies a strong competitive edge, as evidenced by companies like Walmart. Walmart has stated that low purchase and low inventory levels are required in order to offer its customers low prices that are famous for. Walmart has already established its own satellite communications system since 1983, which coordinates the supply chain management of a huge network of distribution centres and transport areas. Walmart quickly identified the value of sharing information on demand and stock levels directly with its suppliers, and in the 1990s nearly 90% of suppliers were connected to the Walmart information system, the Transport Link. This has led Walmart to deal directly with its suppliers, without intermediaries, but at the same time in its most popular products, the VMI maintains lower stock levels and at the same time maintains a lower inventory level [2].

INSPIRATION

Blockchain technology first appeared in 2008 through the Nakamoto (2008) technical document, Bitcoin, based on a digital currency based on principles such as encryption and decentralization. In recent years, blockchain technology is already underway to get the only flipchart to other applications. It is thought that supply chains are among the next big beneficiaries, using technology to increase consumer confidence and quality assurance, including through greater traceability. The supply chain management was also a major focus on industry and academia. For industrial operators, in particular due to increased global trade and competition [3], costs related to the supply chain are an important part of overall costs. This has led to more scientific work in the supply chain strategy and process optimisation [4].

STUDY QUESTION

With the supply chain management theory[5], along with supply chain management, along with the theory of innovation, the following study questions.

RQ1: Why is blockchain technology helpful for transport supply chains?
RQ1.1: How is it beneficial?
RQ1.2: Does the outcomes indicate profits for other supply chains?

STUDY OBJECTIVE

Study on strategic alignment of block chain technology in the Malaysian transport chains. When evaluating this, the aim of the dissertation is to provide an easy way for supply chain managers to assess whether there is a strategic
adjustment between supply chain and supply chain technology as a supply chain management tool [6].

Blockchain technology and the theory of innovation Blockchain technology is an emerging technology and potential uses are still being investigated. As a result, a detailed explanation of the central concepts is key to understanding the mechanisms that make this technology unique. When Nakamoto (2008) picked up the concept of the chain of blocks, it was about peer-to-peer financial transactions [7]. The problem that the proposed concept tried to solve was to have an expensive and sometimes unreliable third party to check and execute transactions. Prior to Blockchains, there was no transaction without intermediaries without the sender noticing that the sender did not spend his money in two places at one time, so one of the beneficiaries did not have the money. This is a so-called "double issue problem" and the solution to this problem is one of the unique features that block technology offers [8].

SCOPE

The purpose of this study is to guide the supply chain of logistics producers in Malaysia. This sector of the industry has shown enormous growth since the 1980s and has become a strong presence in the industrial environment of Malaysia.

UTMOST LITERATURE REVIEWED

There are several topics in the paper, each of them having the same emphasis. Appropriate assessment of the purpose of the study requires solid knowledge about the operation and management of the supply chain. In addition, it is important to examine specialised literature on specialized supply chains, primarily supply chains, but also food supply chains in general. Of course, this is the block technology technology [9]. In addition, the role of information technology in literature in the supply chain management is important for the study-related work.

Literary studies not only provide information on specific topics but provide a general overview of the researcher about the depth of the previous research field and whether the subject and the study questions are being examined [10]. It should be noted that, although supply chain management generally has a large volume of publications generally and in particular in the supply chains, there is still a shortage of block length technology in the literature as a tool for managing the supply chain. This is a disadvantage for lack of information in scientific literature, but highlights the need for a new study on the subject. The strategy to address the problem of lack of information on technology blockchain has been collaborated with IBM, which is one of the companies more competitive in the field and exploits the available documentation of projects with an open blockchain along with an overview of available resources [11]. It should also be noted that the number of published articles blockchain has increased as the supply chain is a question during the study period of this study.

MAKING A CONTROL MODEL

The control model is abstraction of logistics and production processes in the company, or a TAL-like state (the system is currently) or TO-BE (what will be the system in the future specific changes have taken place) [12]. By exploring the effects that technology can have on block chain supply chains in Malaysia, it can be useful to understand the situation since the modifications are implemented beforehand. To do this, we build an AS-IS model based on the methodology of the Strandhagen Control [13]. Empirical data can be obtained from sources used as those that are in 2.1, then it may be that a control sample is representative of ASIS, which can be more thoroughly evaluated to find model-BE control [14]. Notice that in this study, AS-IS and TO-BE models should be generic representations of transport supply chains in Malaysia. As a result, control models show material flow and information in a way that any logistic Malaysian manufacturer has to provide an illustrative image of the technology block chain to improve information flow in the supply chain. In addition, the control models focus on the flow of information flow in the supply chain. For this reason, in some respects, the way it is and TO-BE is left out because the work in this study is not considered as important [15].

II. METHODOLOGY

The study methodology is a systematic approach to having this problem (in the form of study questions and study goals) as well as work to solve this problem [19]. After defining the problem to be solved, this systematic approach is basically the process of gathering information and data, analyzing information and collecting data and ultimately the proposed solution to the problem.

Quantitative studies construct theories based on quantifiable measurements by numbers [19], the results of many experiments in a controlled environment. Qualitative study is appropriate when evaluating quantifiable study problems. Quantitative study is quantitative and convincing, though not descriptive. Quality studies are explorative and descriptive and help the studier to answer why and how, but quantitatively, where and when [19].

For this study, a quality approach is considered the most appropriate. The subject of the study is the applicability of block chain technology in Bangladesh’s transport chains. One of the arguments in the qualitative methods of quantitative methods is that there is no significant use of technology block chain in the industry and therefore it is difficult to quantify the consequences of using technology.
In addition, the lack of real-world examples of use cases makes it interesting to evaluate qualitatively that in some cases, use or planned use cases in the near future may provide some indication of different industries. This means that before quantifying potential improvements, a technology block chain may be a string type of specific supply, there is no need to evaluate why technology can be useful in managing the supply chain and the benefits of supply chain technology.

III. DISCUSSION

Due to the features presented, there are many reasons why block chain technology can be useful in managing the supply chain. With the relative advantage of AS-IS solutions, the most important objectives of supply chain management can be improved. Benefits are characterized by quality, cost, sustainability, speed, and reliability, in the downward trend of the benefits of technology. Keep in mind that this list does not include flexibility, as improving your goals is not as obvious as the above [16]. In this chapter, debugging technology will be discussed in the Malaysian logistics supply chains, in addition to the more general statements about the strategic adaptation of block chain technologies to different business chains.

TO-BE CONTROL MODEL

Based on the AS-IS control model we adapt the TO-BE control model. Note that in this control model, each arrow indicates that the flow of information flows in both directions (excluding the final consumer from the POS and the block net to the final consumer) with a block channel that serves as an information center for all supply chains. In the central information center, stakeholders in the licensing chain can send products and demand and material data to the center and obtain them if needed [17]. To illustrate this, final consumers will have access to the block network to check where and where shipments are, while suppliers can view demand data directly to better plan their own production.

THE STRATEGIC FIT OF BLOCKCHAIN TECHNOLOGY IN MALAYSIAN TRANSPORT SUPPLY CHAINS

It was established that the benefits of block chain technology for supply chain management are primarily concerned with quality, cost and sustainability. Block length technology is expected to increase detail in supply chain supply flow control [18]. This property of blockchain technology is one of the main reasons why it can increase process quality and product quality and lower costs. If supply chain managers have access to a higher level of control and review, the filtering of lower products will be easier.

IV. LIMITATIONS AND CHALLENGES

The most important limitation in technology is no need for more players in the supply chain to cooperate. To get the most out of the technology blockchain, each player in the supply chain must use the same protocol blockchain information to store the product dropped. There is still a possibility that an actor in the supply chain blockchain takes advantage of the technology, but the most out of the product, information at every point of the supply chain is needed. Bringing together all stakeholders involved in the supply chain can be a challenge. Everledger CEO, the company that has created a blockchain based on digital certificates for rough diamonds record, said it took for about 18 months to negotiate the relationships that need to be created, which is a fully functioning system of origin [17]. In addition, blockchain technology requires a high degree of computerization. Many service providers have functional products such as food, small farmers or growers in developing or less developed countries. This can be a challenge for such actors involved in the production chain to register the product [18]. If the information at this point in the supply chain is not recorded, the value of the origin of the other supply chains will be significantly reduced.

V. CONCLUSIONS

The purpose of the study is to evaluate the strategic adaptation of block chain technology to the supply chain of logistics suppliers in Malaysia. As we have indicated, technology and the Malaysian logistics producers are under the supply chains. This adjustment leads in the first instance to the improvement of quality and sustainability, as well as the contribution of block-length technology. As cost cutting and quality improvement is a central issue in maintaining high efficiency, it is clear that block network technology is adapting to supply chain management. [15] As a result, it can be assumed that the block network technology is highly useful for the Malaysian logistics supply chains, as instead of flexibility, it focuses more on efficiency, in the form of functional products for the delivery of downstream economies.
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The Influence of Personal Norms on Consumers’ Halal Purchase Behavior: Consumer Attitude as a Mediator

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Abstract – This paper aimed to find out the factors influencing Bangladeshi consumers halal purchase behavior. The researchers, for this purpose, surveyed 137 consumers of Dhaka city. A structured questionnaire was used to collect data about consumer attitude, personal norms, and halal purchase behavior. The Structural Equation Modeling technique was employed for data analysis using Smart PLS software. The results of this study pointed out that consumer personal norms and attitude influenced Bangladeshi consumers halal purchase behavior. Moreover, the relationship between consumer personal norms and consumer halal purchase behavior was mediated by consumer attitude. Therefore, managers should strengthen consumers personal norms that ultimately influence consumer attitude and halal purchase behavior. The limitations of this study invite future researchers to validate the research model with a large sample size in cross country perspective.

Keywords – Purchase Behavior, Attitude, Personal Norms, Structural Equation Modeling

I. INTRODUCTION

Halal is the dietary standard for Muslim prescribed in the Holy Quran [1] which is permitted or lawful according to the Islamic code of conduct for Muslim [2]. Anything other than halal is called haram which is prohibited for Muslim. As a branding tool, halal branding is used to ensure safety and quality assurance. Due to quality assurance and better value, halal products have an unprecedented demand to non-Muslim besides Muslim.

Halal consumer market is lucrative and fast-growing [1]. The global halal market is worth about to US$ 580 billion in a year and the growth of halal food industry is 7 percent annually [5]. Moreover, more than two million Muslim populations are spread over 112 countries in different regions such as in Africa 300 million, Europe 18 million, Asia 805 million, Middle East 210 million (www. Mida.gov.my). Therefore, there is a large untapped market for halal products and services with increasing values, diversity and demographic trends which has been growing steadily.

However, halal products acceptance is not as same as expected. The growth of halal products is mainly in Muslim and non-Muslim developed countries e.g. the USA, UK, and Middle-East. There are many Muslim majority countries e.g. Bangladesh, Indonesia, Malaysia, where non-halal products are leading the markets. Even after applying traditional marketing and promotional activities, halal products and services cannot acquire their desired place. For example, In Bangladesh, Muslim majority country where 85 percent people are following Islam as their religion [6], consumer market are mainly dominated by non-halal products and services. Halal products are available different product categories such as in cosmetics, food and others, nonetheless, they are not well accepted by the consumers. Therefore, it is essential to identify the factors that influence Muslim consumers purchase behavior for halal products and services. The study focusing on this aspect is dearth in academic arena. Few studies [7-9] have been conducted on halal purchase behavior which are mainly focused on developed countries perspective. However, studies from developing country such as from Bangladesh perspective is scare. This study, therefore, focuses on identifying the mechanism of strengthening the halal purchase behavior of consumers.

Various factors are caused to consumer purchase behavior as pointed out in previous studies. Consumers’ purchase behavior, as stated in previous psychological researches, is influenced by various factors such as knowledge, attitude and norms (e.g., [10-12]. Consumer knowledge as a predictor of consumer behavior is widely studied. From halal purchase behavior, few studies have considered the role of consumer norms. These studies
(e.g. [13-15] considered consumers subjective norms which are different from personal norms. As halal purchase behavior is related to consumer moral standards and obligations, personal norms are more pertinent influencing factor of consumer halal purchase behavior which has been overlooked in previous studies. The present study has considered personal norms of consumers as the predictor variable of consumer halal purchase behavior. Likewise, consumer attitude is widely accepted as the predictor of consumer purchase behavior. However, attitude as a mediator between consumer personal norms and halal purchase behavior is unexplored. Consumer attitude also developed from consumer personal norms. Therefore, to fill the gap, the present study has explored the role of consumer attitude as a mediator between consumer personal norms and halal purchase behavior.

II. RESEARCH MODEL AND HYPOTHESES

The research model of this study was developed based on the previous literature. According to psychological research, the significant factor of predicting consumer behavior are consumer norms and attitude (e.g., [10-12]. Consumer personal norms stimulate consumers to purchase halal products and services rather than non-halal product and services. Based on consumer personal norms consumer attitude also formed. Therefore, it is postulated that attitude and personal norms have a direct relationship with halal purchase behavior of the consumers. Moreover, as consumer attitude influence consumer purchase behavior and consumer personal norms influence consumer attitude, consumer attitude also mediates the relationship between consumer personal norms and consumer halal purchase behavior. Personal norm is the moral standards and obligations of individuals to engage an individual in the concerned behavior [16]. Previous studies (e.g., [17, 18] showed that the personal norm was a strong motivator of consumer behavior. Prakash and Pathak (2017) showed a significant relationship between personal norms and consumer purchase intention. Moreover, Personal values are playing important role in determining Danish consumers environmentally friendly behavior [19]. Personal norms are considered an important predictor of consumer behavior; therefore, the researchers postulate the following hypothesis.

**H1:** Personal norms has positive influences on consumer halal purchase behavior.

Cherian and Jacob [20] stated that consumer attitude, favorable or unfavorable characteristics towards an individual or object, predicted consumer behavior because attitude influences consumers perceptions. It was supported by [21]Spruty (2007) as he showed consumer behavior was dependent on consumer attitude. It is considered that the more favorable the attitude the greater the individual’s intention to perform the behavior [1]. Therefore, consumer purchase decisions are based on their attitude [22] because it is rooted in the concept of a person’s self and the extent a person perceives himself (Zelezny & Schultz, 2000). However, the relative significance of attitude varies across behavior and situations [23]. Attitude is formed from personal belief, obligations, standards of life and knowledge. From this consideration, personal norms influence consumer attitude toward product and services. The stronger the norms the stronger the consumers’ attitude toward a particular product and services. As a result, consumer personal norms directly influence consumer attitude. Moreover, attitude toward a behavior is determined by personal norms and the total set of accessible behavioral beliefs that produces the behavioral outcome. Attitude, therefore, indirectly
influence consumer behavior. From these considerations, the following hypotheses were postulated:

H2: Consumer attitude has positive influences on consumer halal purchase behavior.

H3: Personal norms have positive influences on consumer attitude.

H4: Consumer attitude mediates the relationship between personal norms and consumer halal purchase behavior.

III. RESEARCH METHODOLOGY

A. Measures: The researchers adapted established measures developed by other researchers to measure the construct of the present study. Personal norm was measured by adapting three items from [24] whereas consumer attitude towards halal products was measured by adapting three items from [25]. Consumer halal purchase behavior was measured by adapting the items of [26]. All these items of the respective construct were measured 5-point Likert scale ranging from 1 “strongly disagree” to 5 “Strongly Agree”.

B. Data Collection and Analysis: The study was cross-sectional since the data were collected from a single respondent only once [27]. The data were collected from the respondents using a structured questionnaire. Non-probability convenient sampling technique was employed since it was an appropriate sampling technique in the case of time, cost and convenience constrain [27].

Table 1: Psychometric Analysis

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
<th>Loadings</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>Attd1</td>
<td>0.825</td>
<td>0.858</td>
<td>0.669</td>
</tr>
<tr>
<td></td>
<td>Attd2</td>
<td>0.851</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attd3</td>
<td>0.775</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Halal Purchase Behavior</td>
<td>HPB2</td>
<td>0.757</td>
<td>0.810</td>
<td>0.587</td>
</tr>
<tr>
<td></td>
<td>HPB3</td>
<td>0.798</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HPB4</td>
<td>0.743</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Norms</td>
<td>Nrms1</td>
<td>0.882</td>
<td>0.823</td>
<td>0.611</td>
</tr>
<tr>
<td></td>
<td>Nrms2</td>
<td>0.791</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nrms3</td>
<td>0.655</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Two filtering questions, e.g. (i) whether the respondent was from other faith rather than Muslim (ii) whether their age below 18, were asked before interviewing respondents to get the appropriate respondents. If a particular consumer fell any one of these two categories that questionnaire was excluded from the study. A total of 193 respondents were contacted from which 137 questionnaires were retained for final analysis. The effective response rate was 71 percent. Majority of the respondents (69 percent) was male. Most of the respondents were from the age group of 35 to 45 years of age and majority of the respondents were in the income group of TK. 35000-45000. Data were analyzed using SPSS and SmartPLS-3.

IV. ANALYSIS AND FINDINGS

Measurement Model: In PLS based analysis measurement model ensures the consistency, reliability and validity of the model. The loading of the items (Table-1) was above the threshold values 0.7. The item 1 of halal purchase behavior was deleted since its value was below the threshold value, however, the item 3 of personal norms was retained, though its value was 0.655, since average variance extracted (AVE) was above the threshold value 0.5. The most reliable measure of the reliability of the construct in structural equation modeling is composite reliability (CR) of PLS-SEM. The values of AVE of the present study were above the cut-off values 0.50 (Attitude 0.669, Halal Purchase Behavior 0.587 and Personal Norms 0.611). For discriminant validity Fornell and Larcker criteria is widely used. According to Fornell and Larker criteria the

Table 2: Fornell-Larcker Criterion

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Attitude</th>
<th>Halal Purchase Behavior</th>
<th>Personal Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>0.818</td>
<td>0.463</td>
<td>0.484</td>
</tr>
<tr>
<td>Halal Purchase Behavior</td>
<td>0.766</td>
<td>0.564</td>
<td>0.781</td>
</tr>
<tr>
<td>Personal Norms</td>
<td>0.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The discriminant validity of the constructs was achieved since the diagonal values of the constructs were higher than the correlations between the constructs. Another criterion of measuring discriminant validity is the Heterotrait-Monotrait (HTMT) ratio. The HTMT criterion was also met up since the values were less than 0.85 \[29\].

### Table 3: Heterotrait-Monotrait Ratio (HTMT)

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Halal Purchase Behavior</th>
<th>Personal Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Halal Purchase Behavior</td>
<td>0.638</td>
<td></td>
</tr>
<tr>
<td>Personal Norms</td>
<td></td>
<td>0.635</td>
</tr>
</tbody>
</table>

### Structural Model: The structural model indicates the relationship between the construct [28]. The direct relationship between consumer personal norms and halal purchase behavior was found significant since \(t = 5.992\) and \(p = 0.000\). Similar results were found for the other two direct relationships. The relationship between personal norms and consumer attitude was significant (\(t = 7.824\) and \(p = 0.000\)) and the relationship between consumer attitude and halal purchase behavior also significant (\(t = 3.358\) and \(p = 0.001\)). All these indicate hypotheses 1, 2 & 3 was supported. Moreover, the mediating relationship between consumer personal norms and consumer halal purchase behavior was also significant since \(t = 2.961\) and \(p = 0.003\). Therefore, hypothesis 4 also supported.

### Table 4: Path Relationship

<table>
<thead>
<tr>
<th>Path Relationship</th>
<th>Beta Values</th>
<th>Standard Deviation</th>
<th>T Statistics</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude -&gt; Halal Purchase Behavior</td>
<td>0.248</td>
<td>0.074</td>
<td>3.358</td>
<td>0.001</td>
</tr>
<tr>
<td>Personal Norms -&gt; Attitude</td>
<td>0.484</td>
<td>0.062</td>
<td>7.824</td>
<td>0.000</td>
</tr>
<tr>
<td>Personal Norms -&gt; Halal Purchase Behavior</td>
<td>0.444</td>
<td>0.074</td>
<td>5.992</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Table 5: Mediating relationship

<table>
<thead>
<tr>
<th>Mediating Relationship</th>
<th>Beta Value</th>
<th>Standard Deviation</th>
<th>T Statistics</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Norms -&gt; Attitude -&gt; Halal Purchase Behavior</td>
<td>0.120</td>
<td>0.041</td>
<td>2.961</td>
<td>0.003</td>
</tr>
</tbody>
</table>
V. DISCUSSION AND CONCLUSION

Consumer purchase behavior depends on consumer norms and attitude. From managerial perspective this study has a significant contribution. This study also revealed that consumer personal norm is significant predictor of consumer halal purchase behavior. Therefore, highlighting and strengthening consumers personal norms become crucial for marketers. As a predetermine factor of consumer purchase behavior, personal norms guide consumer halal product purchase behavior. This was also supported in the study of [30]. Similarly, strong interpersonal norms not only a predictor of consumer halal purchase behavior but it also influences consumer attitude. Positive and favorable consumer attitude is also a reason for consumer halal purchase behavior. Significant role of personal norms on consumer attitude identified in the study of [2]. Marketing activities that strengthen consumer personal norms also strengthens consumer attitude towards halal purchase and attitude also directly influences consumers halal purchase behavior. Moreover, besides its direct influences, consumer attitude also influences consumer halal purchase behavior indirectly. The relationship between consumer personal norms and halal purchase behavior was mediated by consumer attitude. Therefore, marketers should concentrate more on forming positive consumer attitude towards halal purchase behavior because halal purchase attitude not only directly influences consumers halal purchase behavior directly but also it also indirectly influences the relationship between consumer personal norms and halal purchase behavior.

The present study is significant from a theoretical perspective. Previous studies mainly focused on consumer subjective norms. As halal purchase behavior is a religious obligation for Muslim consumers, personal norms are more important which has been ignored in previous studies. The present has shown the significance of personal norms in influencing consumer halal purchase behavior. Besides, consumer attitude as a predictor of consumer purchase behavior is well-established. However, this study established the role consumer attitude as a mediator which has been caused for an indirect relationship between consumer personal norms and halal purchase behavior.

This study could have been taint-free conducting on larger sample size. Future researchers can carry on the researcher incorporating larger sample size from more than one country. The present study has established direct and indirect relationship between the constructs, but any established relationship is influenced by some other variables. Consumers personal norms and consumer halal purchase behavior has both direct and indirect relationship; however, consumer income is a significant determinant of consumer behavior. Therefore, future researchers are suggested to incorporate income as a moderator in the present model.

The present study has included only personal norms as a predictor of consumer halal purchase behavior. However, the present study failed to test the role of other predictors on consumer halal purchase behavior. Hence, future researchers could test the role of consumer knowledge and religiosity on consumer halal purchase behavior.

REFERENCES


Are the Pharmaceutical Stores in Bangladesh Conducting Unethical practices?

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Abstract – Pharmaceuticals Industry is one of the leading industries in our country. Over 250 companies operating their business in our country. Unfortunately, The Pharmaceuticals stores have been corrupted and practicing unethical proceedings for years. Many lives suffered due to the unethical proceedings and many reputed companies were defamed because of this. There are 1,03,451(approx.) retail drug shops in Bangladesh but unfortunately equal number of unlicensed drug shops also exist in this business. Lack of Lab experts/pharmacists, Salesman & Dispensers with no proper training. Lack of transparency, adulterated drugs, corruption in the retail stores have defamed the industry. Sample size for the survey was 100 respondents. Online survey was conducted among 100 people 21-50 years old residing in Bangladesh. The main purpose of this study is to find out the factors & reasons that determine the unethical practices in Pharmaceuticals retails stores in Bangladesh.

I. INTRODUCTION

Pharmaceuticals Business has been one of the booming businesses in Bangladesh. There are 257(approx.) licensed manufacturers who have been doing business in Bangladesh. BDT 187,566 million is the market value of the Pharmaceutical Industry. GDP Growth Rate 7.11 & 7.28% were achieved correspondingly because of Pharmaceutical Industry. Most of the local pharmaceuticals company cover the market. In addition, the industry presently meets Ninety Eight percent of the country’s demand and exports medicines and basic materials to over 150 countries [9]. Unfortunately, Unethical proceedings have been found and practiced in the pharmaceuticals retail stores. In 2009, 28 children died because of acute renal failure because of adulterated paracetamols made by a local pharmaceuticals company [10]. These sorts of news discovered that falsified medicines are spreading everywhere in Bangladesh which is an alarming issue for the pharmaceutical industry in Bangladesh.

II. METHODOLOGY

This is a qualitative research based on consumer-based survey. After reviewing different literatures from scholars articles the variables are identified for further data collection. Then, a survey was conducted among 100 respondents through structured questionnaires. Among them, around 60% respondents are Brac University's understudies and around 40% are untouchables who go to neighborhood pharmaceutical stores in normal premise. Here, the target population indicates to the people who buys medicine from pharmaceutical stores in regular basis and has clear idea about products. The reason is that those people have knowledge and better idea about pharmaceutical stores locally are mostly, people who have experience in buying medicine quite frequently or in a daily or weekly basis; we have selected them as our respondents. In this report, it is basically about “who have an idea about pharmaceutical store and their methods of providing quality products and services. Two types of criteria were involved while conducting the survey. First one was Conducting survey in online platform. Participants were sent a Google Doc through Gmail and Facebook Account. The participants have given proper information and relevant data for conducting a transparent & Insightful Survey. Moreover, convenient sampling is done where the targeted participants of the survey were regular consumer of medicines and aged from 20 to 50 years old residing in Bangladesh. Alongside that, we have utilized a few scales like Likert scale, nominal and ordinal scale which incorporates yes or no and concur or differ and different alternatives identified with the poll. So that, it is sufficiently simpler for the respondents to comprehend and to react. Moreover, we have used all these scales for having better reviews because we want to get the result of data within a very short time. The participants have provided with proper information and relevant data for conducting a transparent & Insightful research.

After the submission of the survey information by the participants, the depth analysis created by Google Doc technology & Google spreadsheets was referred and used as well. Moreover, we went through some news from newspapers and the news were referred as well.

III. LITERATURE REVIEW

Although progress was made in drug manufacturing, irrational drug use including inappropriate drug prescribing and inadequate access to essential drugs and uncontrollable price deteriorates the overall health care system. Almost all medicines are available without prescription and self-medication is a common practice in Bangladesh. Medicine market of Bangladesh is inundated with counterfeit medicines. Additionally, polypharmacy is a common practice especially in rural areas with widely prescribed antibiotics and vitamins [12]. However, Interaction has been increased between doctors and pharmaceutical companies over the years which
facilitates the financial gain of both parties [18]. Drug Promotional Literature (DPL) is an essential marketing strategy which influences a physician in terms of prescribing variety of medicines from a company [19].

Moreover, Private retail drug stores of Bangladesh are highly unregulated and unaccountable, operated by salesperson with no formal training whereas according to the law the person dispensing at the drug store requires grade ‘c’ pharmacist certificate at least [6]. According to WHO, the International Pharmacy federation and many other organizations including government and individual practitioners thinks that local pharmacies are not contributing to the welfare of the society as much as they should have as they are quite under used [15]. Furthermore, Drug Companies give endowments and different impetuses to doctors and different experts which is a genuine break of set of principles. In any case, it is likewise evident that there are moral doctors who keep on recommending prescriptions that are most gainful and affordable to their patients despite being feeling the squeeze from therapeutic delegates of medication organizations. [20]

On the off chance that if an endorsed medication isn’t accessible, the shopkeeper regularly substitutes another brand, some of the time without educating the customer. The customers have nothing to do with this since they are uninformed about the nature of a specific brand[1].

IV. RESULTS

The research and the analysis on our primary & secondary data suggest that, most of the people have been aware of unethical proceedings in pharmaceuticals retail stores & industry but hardly they upraise their voice against this. Moreover, most of the retail stores in Bangladesh don’t follow the proper rules and regulations because majority of the drug stores are operated by the salesperson who unfortunately do not have any formal & legal training through apprenticeship. Furthermore, most of the pharmacy stores in Bangladesh have lack of at least a C grade pharmacist or a Lab Expert. This is one of the major reasons to understand the scenario where customers can not ensure the purchase of exact & actual medicines and as a result the consumers suffer a lot. In addition, most of the stores do not provide bills or money receipts for which even if consumers find any falsified or fake medicines they can no take necessary actions because of lack of enough evidences. However, there are 1,03,451(approx.) retail drug shops exist in Bangladesh but unfortunately equal number of unlicensed drug shops also exist in this business (SIAPS. 2015). In addition, only 20-25 out of companies out of 250+ (approximately)pharmaceutical organizations make medications of standard quality. The pharmaceuticals organization who have been producing medicines maintains very low quality and their agents/salesperson reportedly bribing and giving gifts to the doctors to suggest their products (Islam.2008).
Interestingly, 60% of the respondents said they hardly find a Pharmacists/Lab Expert/Chemist in a Pharmacy store.

Furthermore, the survey result indicates that, 36 respondents agree, and 32 respondents strongly agree to the issue that pharmaceuticals stores don't provide bills or cash receipts. When the respondents were asked "Do you take bills or receipts from pharmaceuticals stores?" 19 respondents said they take receipts regularly. Then again, 39 respondents never take bills and 42 respondents “sometimes” take bills/receipts.

V. DISCUSSION

The study mainly focuses on the process and the unethical proceedings while purchasing drugs from pharmaceutical stores. There is a huge shortage of Lab Expert in pharmacy store. Reluctance to proof, reluctance to protest retail stores. People usually don’t suggestions from expert and buy medicines without prescriptions. The salesmen also do not check the validity of prescription. Moreover, only 20-25 out of companies out of 250+ (approximately) pharmaceutical organizations make medications of standard quality. The people from rest of the organizations give bribe and gifts to the doctors to suggest their Low standard medicines.

Lack of verification of medicines

Baseline study of private drug shops in Bangladesh (2015) says, Sixty-nine percent stores were attended by a single dispenser [1]. Among them, Forty-nine percent of the salespeople had no official schooling in dispensing and learned the business practice through education with fellow drug retailers which is (42%) relatives (18%), and village doctors (16%), which is totally unethical [1]. From the survey questionnaire, “Do the consumers ensure the quality and quantity of medicines through a lab expert?” Among 100 respondents, 68% (68 respondents) marked that, they do not verify the medicines through a lab expert. 17% respondents said medicines were ensured by experts sometimes which is not enough. On the other hand, 15% have said “yes” which is very low. Two facts have been recognized here, first one lacks people awareness about medicine inspections and second one Lacks pharmacist in a medicine stores.

Lack of pharmacist/ Lab expert in medicine store

National center of biotechnology information says, in 76% of the shops, the owner and the salesperson were the similar person, and >90% of these were situated within 30 min walking distance from a public-sector health facility. The process of licensing as supposed to be a lengthy, and costly process. A pharmacy stores should have at least a C Grade pharmacist. If someone is operating a medicine store without a pharmacist, this is unethical as well as illegal for a business [2]. About one-third of such interactions in the urban zones, only 36% salespersons who asked about the nature of sickness, 27% about the symptoms of illness, 26% about the period of the illness. When buying drugs based on the reference of retailer or personal experience, greater part of the consumers barely examines the quality and amount of medications through a Pharmacists/Lab master/Chemist of the shop. 68% said they never check the quality. Surprisingly, 60% of the respondents said they barely discover a Pharmacists/Lab Expert/Chemist in a Pharmacy store.

Corruption

One of the instruments generally utilized by the pharmaceutical organizations is putting forth gifts (from stationeries to family things to abroad excursions to go to gatherings, and so on.) to spur doctors to compose medicines. Acknowledgment of these endowments, particularly the costly ones, obliges them to return support by changing built up medicine standards and expanding deals. Proof demonstrates that, however the pharmaceutical organizations start the dishonest promoting practice, doctors oversee its continuation. Irreconcilable circumstances among the partners counteract appropriate execution of various controls and rules defined by the legislature for guaranteeing moral practices. This issue is serious particularly in low- and middle-income nations, where supervision and control of the pharmaceutical ventures are frail [11]. Among, 300 pharmaceutical organizations in Bangladesh, just the 20 to 25 top ones
create medications of standard quality. Reports demonstrate that various little organizations advertise substandard medications in the nation. Phony or substandard pharmaceuticals, including lifesaving ones, with an expected worth of US$ 150 million every year, are flooding the residential market [12]. In its yearly testing in 2004, the administration research center recognized 300 fake or extremely low-quality medications out of 5,000 medication tests. An ongoing test including 15 brands of ciprofloxacin demonstrated that 47 for every penny of tests contained not as much as the predefined measures of the dynamic fixing. Another report noticed that 69 for each penny of paracetamol tablets and 80 for each penny of ampicillin containers delivered by little organizations were of substandard quality [12].

**Lack of billing system**

The overview delineates that, 36 respondents agree, and 32 respondents strongly agree to the issue that drug store stores don't give bills or cash receipts. When the respondents were asked "Do you take bills or receipts from pharmaceuticals stores? just 19 respondents said they take receipts consistently. Then again, 39 respondents never take bills and 42 respondents said occasionally they take bills.

**Reluctance to protest**

The survey demonstrates, 85% respondents are aware about the ongoing unethical proceedings in the pharmaceuticals retail stores. Unfortunately, instead of raising voice against they don't raise their voice. As a result, the retailers get the advantage to keep doing the unethical proceedings

**VI. RECOMMENDATIONS**

Based on the analysis of survey result & Literature review, following initiatives are recommended to implement.

1. The number of “Model Pharmacy” stores need to be focused. A model pharmacy is consisted of an “A grade” pharmacists along with two B/C graded pharmacists who will provide brief about drugs and ensure safety with quality [4].

2. Presence of at least C graded pharmacists needs to be made compulsory in the pharmaceuticals stores in all over the Bangladesh. Along with assessing the prescription, they will decide what amount of medicines need to be dispensed to consumers and let consumers know about the side effects of medicines. From the respondents, 60% (60 respondents) strongly agree on ensuring the presence of a Lab Expert/Pharmacists in a store to decrease falsified medicines.

3. Medicine stores should provide bills/money receipts after dispensing medicine to consumers/customers. It is an evidence of the transaction between customer and seller. Moreover, it has been made mandatory by the Government.

4. To detect falsified medicines, other companies can adopt extraordinary steps like Renata Pharmaceutical Industry. Codes scratched on a heading of pills that can be sent to the manufacture through text to confirm their genuineness [8].

5. Proper action against counterfeit drugs by raising consciousness through different awareness campaigns. Pharmaceuticals industries or Directorate general of drug administration should arrange necessary campaigns in school/college/university campus to upraise awareness among people.

**VII. LIMITATIONS**

1. The sample size is 100 for analyzing and interpreting the whole report. Even though this size of sample is good enough to understand the scenario but not sufficiently interpret the whole facts.

2. The survey was done on consumers only, not on the retailers who are equally important to understand the phenomena.

**VIII. CONCLUSION**

Business Monitor International refers, this year (2018), Bangladesh government has inspected over 5,000 drug samples which exposed that 300 or 6% were either counterfeit or of inferior quality”. These mentioned news and information revealed that there is going something wrong in pharmaceuticals business in our country which can cause a notorious effect for human bodies.

Even though some noteworthy issues have created significant obstacles in this industry, pharmaceutical industry in Bangladesh has accomplished surprising development and has plentiful chance to develop in future [16]. Arguably, the pharmaceutical industry had always been the holder of controversies & worst records with notorious crimes than any industry. Evasion of international laws & Large law infringement has been the most concerning issues in the pharmaceuticals business. Customer and expert activism and an assortment of levels of self-control in mix with state, local, and worldwide direction are immeasurably essential to seeing how advance is conceivable [17].

This study was based on consumer-based survey and literature reviews to know the perspectives about pharmaceuticals business and also gathering knowledge regarding people’s mindset towards pharmaceutical business. Moreover, it is required to create awareness among consumers of medicines by demonstrating real life scenario and information regarding the reality of pharmaceutical business in the retail stores across Bangladesh.

Moreover, the study will help the pharmaceuticals companies to bring their attention in retail level to build and go with appropriate strategy and finally to monitor and keep the track on retail stores and their practice.
REFERENCES

Organizational Performance Management and Leadership Development: Theories, Styles, Ethical, and Legal Issues

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Abstract – Effective performance management and the role of leadership are two interconnected issues in the organizational management. Organizational goal, environment, global context, stakeholders’ orientation and other related issues are the determiners for selecting appropriate leadership and management style for the organization. Human resource management and development of multiple skills in line with the organizational goal and strategy need to be aligned properly to achieve sustainability. In this respect, the role of leadership plays the significant role. This paper made an endeavor to scrutinize how best various leadership style, techniques, and theory contribute in effective organizational performance management and leadership development.

Keywords – Performance management, Leadership development, Leadership style, Leadership theories, Legal and ethical issues

I. INTRODUCTION

Effective performance management and the role of leadership are two closely interconnected issues as the leadership plays the pivotal role in achieving the Organizational goals through the management of the resources in the most efficient way. Human resource is the key to the organizational management, and therefore it is the dynamism of leadership, which drive the human and other resources to lead an organization to its desired destination [20]. Leadership is all about motivating people and management is the accomplishment of the organizational goal through the people. Peter Drucker has drawn a fine line between management and leadership: management is doing things right and leadership is doing the right things [5]. Considering the leadership and management of performance as the core issues, in this reflective report, this paper would make an endeavor to find and explore the answer to the following questions:

a. How leadership and management theories, styles, and traits support the process and principles relating to the management of performance?
b. How the legal and ethical issues are connected to organizational disciplinary and grievance procedural issues?
c. To what extent the role of leadership support the achievement of organizational goal?

At the very outset, this report discusses the leadership theories, styles, and traits in the management of people and their performance. Then, it explores the legal and ethical issues that concern organizational disciplinary and grievance procedures. Finally, the report evaluates the role of leaders in creating and supporting the organizational vision.

II. LEADERSHIP THEORIES, TRAITS, AND STYLES: EVALUATION, SIMILARITIES, AND DIFFERENCES

Leadership theories, traits, and styles vary from organization to organization basing on the context and organizational strategy and vision. Performance management, on the other hand, remains the central issue in selecting the leadership approaches. From my point of view, the success of any organization is highly correlated with the performance of its management and the leadership approach that set by the organization. There are varied ranges of leadership theories to support an organization. Different schools suggest different theories based on the leadership style, traits and approaches. Analyzing different theories, however, According to Bolden The most significant and popular theories are:

a. Great man theory
b. Trait theories
c. Behavioral theory
d. Situational leadership
e. Contingency theory
f. Transactional leadership
g. Transformational leadership

Apart from the above-mentioned theories, there are some theories that are mix and extension of the above-mentioned theories. The theories are participatory leadership theory, power and influence theory, authentic leadership theory, ethical and spiritual leadership theory, servant leadership theory, charismatic leadership theory, entrepreneurial leadership and so on [2]. These theories have undergone tremendous evaluation though the research and application of these leadership theories in practice. The similarities and differences in the various leadership theories varies basing on the Organizational contexts, style, timeline, the demand of various organizational stakeholders and so on. Figure-1 shows the evaluation of leadership theories [7].
The Great Man theory was introduced in the Nineteenth century that explain the leadership approach through heroic or great man-ship attitudes like, wisdom, personal charisma, political power and skills, heroism (Brown, 2013). This is one of the controversial theory, as the theorist are divided on the extent of application of this theory on Organizational performance. Though charismatic leadership helps in developing an effective action plan and motive the subordinates, this style is not effective in developing leaders who can perform independently [3]. The Trait theory focuses on specific leadership traits that distinguish the leaders from the others. This theory supports the statement: leaders are born, not made. Thus, it contradicts with the leadership theorists who do believe that leadership is not innate; rather it can be developed through learning [17].

The Behavioral theory takes an almost opposite view of Trait theory, as it highlights on the behaviors of the leaders assuming that the leaders are made, not born. This theory helps the leaders to understand how human behaviors affect the relationship and performance in the organization. This theory can be linked to the Great Man theory, as the behavioral traits are also connected to charismatic and non-charismatic leadership [4]. For example, a charismatic leader possesses robustness in trustworthiness, motivational, and communicative traits than the non-leaders. However, the critics of this theory believe that the Behavioral theory is based on definite leadership style, which may not fit in the entire situation [4].

Kenneth Blanchard and Paul Hersey develop the Situational leadership theory. This theory considers the situation or the development level of the organization, and the leadership must fit with the situation or need of the organization. Figure-2 shows the situational leadership style and performance levels graphically.

The advantages of the theory that have been discovered from various studies the organizational practices are flexible, receptive to innovation, and there is less tension among the employees of an Organization. However, there are also some disadvantages like creating confusion with the change of situations, chances of manipulating subordinate’s trust, influences of outside factors (change in organizational practices of the partners), and the little differences in the leadership and management [6]. The Contingency theory of leadership is based on two assumptions- success or failure. There are some sub-theory under this theory like the Path-Goal theory, Situational leadership theory, and Decision-Making theory. This theory shares some similarity with the Situational leadership theory [11]. This theory gives more importance to the group performance [10]. However, the criticisms of this theory are the inability to provide adequate reasons for leadership effectiveness at the different situation and the evaluation of co-workers in different leadership style setting.

The Transactional leadership theory from the various sources and the key points on the theory are [8]:

a. This theory focuses on Organization, supervision, and performance
b. It covers the full gamut of leadership model
c. It also focuses on spirituality and internal forces of the leadership
d. Employees are motivated by either reward or punishment

However, this theory considers leadership to be a responsive gesture. Some scholars also criticize the motivation through reward, punishment, and self-interest concept. The Transformational theory is the most popular theory among all other theories in the recent days. The most interesting part that discovered form this theory contribute changes in the people and organizational system to create value for the organization. Furthermore, the four elements of transformational leadership are motivation, stimulation, consideration, and influence. Some transformational leaders like, William Edwards Deming, Peter Drucker, Ross Perot and John D. Rockefeller. They have changed their respective fields by the application of the Transformational leadership approach [18]. The literature
on management theories and styles, where it has been discovered that two-factor theory (Motivation-Hygiene and Job-characteristic model and Demand control model) play significant role in leadership theory. The writers also focus on group effectiveness, modern manufacturing and work design, transformative approaches, multiple stakeholders’ management and the impact of innovation and technology. These issues immensely help to develop organization leadership and performance management.

In all the theories, it has been found there are some common traits for the leaders like maintaining honesty and integrity, motivational capability, charismatic character, good communicator, taking responsibility of their work, delegating authority to the subordinates, creative and innovative, hard worker, and having empathy for the men. However, the leadership styles contribute to the leadership theories and vice versa. The most popular leadership styles are transformational, transactional, servant leadership, autocratic, Laissez-faire, democratic, bureaucratic, charismatic, and situational leadership style. For instance, TESCO, UK follows the Democratic leadership style, which is also known as participatory leadership. Most of the leading Asian restaurants in UK follow the Democratic, Consultative, Laissez-Faire, and Autocratic leadership style to promote national culture and organizational management [12]. However, due to the internal and external factors, and the time consideration, the evaluation of leadership theories took place. Yet all these theories best fit in different organizational contexts.

One of the relevant examples is the ACAS’s ‘Code of Practices’. In this code of practice, I have found that in the most cases, resolving the disciplinary and grievance related-issues informally is the best possible option. However, there is an ‘Employment Tribunal’ to deal with legal issues based on the investigation report and the tribunal can change the award basing on the organizational consensus [1]. In sum, the management of disciplinary and grievance-related issues play a vital role in leadership and management, as the effective leadership could effectively handle these issues.

### Table 1 Integration of Disciplinary and grievance issues in the Organization [15]

<table>
<thead>
<tr>
<th>Procure</th>
<th>Develop</th>
<th>Compensate</th>
<th>Integrate</th>
<th>Maintain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Analysis</td>
<td>Performance Appraisal</td>
<td>Training</td>
<td>Career Planning</td>
<td>Development</td>
</tr>
<tr>
<td>Recruitment</td>
<td>Performance Appraisal</td>
<td>Career Planning</td>
<td>Transition Planning</td>
<td></td>
</tr>
<tr>
<td>Selection</td>
<td>Training</td>
<td>Career Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Placement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onboarding</td>
<td>Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The legal and ethical issues in leadership and organizational management, particularly disciplinary and grievance-related matter play an important role. Difficulties and miscommunication may arise in the employment relationship. The disciplinary and grievance procedures ensure that these challenges are mitigating effectively, which also fall within leadership and management domains. From the analysis of different literature, it is easily identified that the disciplinary issues should follow a formal structure like the record of the issues related to misconducts, verbal and written warning from the management, neutral investigation procedures, and finally allowing the employees to defend his/her position. At the same time, the leaders should also abide by the rules, strategies, policies set by the authority. In respect of grievance-related issues, there should be an effective communication, transparency, and fairness, and arrangement of the formal/ informal meeting. The leaders should inform the subordinates about the progress and at the same time accompanied at any formal meeting. The leaders should also help to support their subordinates to mitigate issues related to the grievance. The legal and disciplinary aspect beyond the jurisdiction of organizational rules, like criminal offences, should be dealt with initially by the Organization and then by the formal legal bodies of the states. Organizational leadership should integrate the disciplinary and grievance related issues at every level (Table-1).

### IV. THE ROLES OF LEADERS IN CREATING ORGANIZATIONAL VISION AND COMMUNICATION MANAGEMENT

Evaluating the literature of leadership, organizational vision and communication, organizational vision is the foundation that helps the organization to achieve its desire corporate goal. It is also assumed that different level of leadership and context, the contribution of leaders in creating Organizational vision also varies significantly. However, in general, the tasks are as follows [16] [19]:

a. Leaders plan for the organizational vision integrating the team members in the planning process.
b. Constitutes the organizational vision at the strategic level.
c. Formulate a robust communication plan and select the means and methods of communication at the different levels (vertically and horizontally).
d. Develops operational strategies in light of the organizational vision.
e. Articulate work plan for the team members based on the priorities set at strategic level.
f. Ensure the feedback process work effectively from the bottom to the top of the hierarchy.
g. Align the team with the organizational vision.
h. Keep the team inspired and motivated.

Interestingly Rick (2014) considered some metrics for measuring the state of corporate and organizational culture like, knowledge, perceptions, behaviors, process, and outcome. The most common example of a business organization, where the leaders are engaged with the team in setting organizations’ revenue, future growth, and Organizational culture. In setting this vision at the strategic level, the team members effectively contribute as an integrated part of management. Thus, the team member feels himself or herself the valued members of an organization. Even in many organization, contributions from different departments are accumulated and discussed in the conferences represented by the team lead, thereby the participation of different tiers of leadership, and representation of team members are valued. This type of integrated and collaborative leadership effort help the organization to achieve its goal.

It is also evident from different kinds of literature that effective communication plays the crucial role in the leadership and organizational performance management. Figure-4 shows how leadership traits and organizational vision is correlated to effective communication.

From different examples, I have found that effective leaders maintain robust communication horizontally with other leaders and vertically with the senior leaders and team members. At the same time, they give emphasis on the feedback process of communication. Successful leaders always appreciate the feedback from their team members to align their workplace and operational activities in light of the organizational vision. It has been found from the historical example that showed the consequences of miscommunication, like the Nokia’s case. When the innovation of mobile phone technology was based on Android software and smart technology, Nokia fails to bring that innovation to their devices; thereby Nokia fails to remain as mobile phone market leader. The senior leaders failed to communicate the appropriate value of the innovation and technological development (Tuck, 2014). In sum, leaders play a pivotal role in the constitution of vision for the Organization.

V. CONCLUSION
This paper make an endeavor to present different leadership theories and their similarities and differences. It has also shown the common traits and styles that fit the leadership theories. Then, the analysis of the disciplinary and grievance-related issues and their relationship with the leadership and management of the organization performance are done elaborately. Finally, the paper presented the contribution of effective leadership in creating organizational vision and communication. It is also evident from various literature that there is clear difference between management and leadership. Leaders deals with organizational vision, goal and direction, whereas managers are involve in different organization activities like financial, manufacturing, process control, and other activities. Yet, the companies are not giving due importance in leadership development (Glessen, 2017). In the evaluation of leadership practices, nowadays leaders are more involved, and considerate to their team member’s views. Thus, the practices becoming more noble and effective. However, the style of leadership varies according to organizational contexts and goals, however, effective leadership share common traits.

REFERENCES


Motivational and Emotional Factors Influencing Consumers towards Shopping Malls

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Abstract – Organized retail industry is a fast growing sector especially in the context of mall culture spreading across all countries. Shopping malls are providing an entirely new and exciting shopping experience to consumers with the presence of more options for products and entertainment. This article examines the influence of motivational and Emotional factors influencing customers to visit shopping malls.

Keywords – Shopping Malls, Motivational Factors, Emotional Factors.

INTRODUCTION

The globalization has opened up new opportunities for retail sector all over the world. Eventually, it has become one among the rapidly growing industry in the world. It has been recorded that, in India, 10 per cent of the country’s GDP and 80 per cent of the overall employment hike is contributed by this sector. Of late, Indian retail sector could carve a niche as 5th largest retail destination in the world. Ansal’s plaza in New Delhi is the pioneers in the retail sector in India and followed by Spencer plaza in Chennai and Crossroads in Mumbai. Organized retail sector is gaining momentum at a rapid pace. Based on the market potential, less financial hazard, better demography, to name but a few, are the factors that pull the stripes behind the screen for the development of the retail markets in India. Among all, high market potential has played a pivot role for the escalation of retail sectors in India. Consumer behavior towards shopping is in a period of transformation with the establishment of shopping malls. They offer many a product with high quality at a negotiable prize, from that, this industry has become gaining ground.

Professional retail stores are sorted exclusively with wide range of product varieties based on the customer requirements in the shopping malls. Thanks to the theme of all products under one roof, it made a path for the advent of shopping malls and it has been adapted to not only in large cities but to small towns. This has made a purchasing tendency among all the age groups and entirely changed the buying behavior of the customers. Not only the product, but the customers are giving more importance to the services, cost, parking facility, rest room, and so on while they shop. Moreover, reputed companies have started their outlets in shopping malls and the company can directly deliver their product to the customers without any intermediaries. The actual benefit is to the suppliers and to the customers. They can reduce the duplication of the product to a far distance. Even though purchasing from shopping malls are comparatively time consuming, customers are enjoying and they are getting relaxation from their hectic lifestyle.

SCOPE OF THE STUDY

Even though there are various factors influencing customers to shop from malls only motivational factors and Emotional factors are considered in the present study. Motivational factors end up with a purchase along with visit. Emotional factors are relating to entertainment and others like window shopping. The study is confined to Kannur, a fast growing town in Kerala state in India, especially with the advent of the establishment of fourth largest international airport in India. Many a shopping mall is expected to be established in Kannur with the streamlining of the operations of Kannur International Airport.

LITERATURE REVIEW

A study titled “Do men and women really shop differently” (Kuruvila, Shelja, Nishank, Shah, Nidhi, 2009) revealed that, in India, there are significant differences in shopping behavior based on gender. Hedonic and utilitarian estimations influenced the state of mind of consumers living in smaller towns towards shopping malls (Arpita Khare, 2011). A study conducted on shopping malls in Ludhiana and Chandigarh (Amandeep Kaur, 2013) found that the retailer branded stores are providing the latest trend, provoking the consumers to buy from shopping malls. It was stated by (Arpita Khare, Dhier Achsani, and Manish Khattar, 2013) that, one of the major factors is the discount offers provided by the shops in shopping malls to attract their customers.

A study conducted in malls (Dr. Irin Sutha, A, 2016) stated that youngsters regard malls as an entertainment hub with shopping, games, and movies along with food court facility. Though females spend more time at the mall than the males, there is no significant difference between male and female consumers regarding frequency of visiting a mall (Sandeep Bhanot, 2017).

Keywords

Shopping Malls, Motivational Factors, Emotional Factors.
OBJECTIVES

The study has been conducted with the following objectives:

- To make an assessment of motivational factors attracting the customers towards shopping malls.
- To understand the influence of Emotional factors on consumers in visiting shopping mall.

STUDY VARIABLES

Under motivational factors, five sub variables namely, availability of many products under same roof, high quality products, discount offers, presence of branded shops and more options for same products are identified. Emotional factors considered for the study included tasting variety of food, watching movies, knowing about new versions of products, dining with family/friends and window shopping.

METHODOLOGY

The study is based on a descriptive research. The customers visiting the shopping malls have been defined as the population for this study. Both primary and secondary data were collected for the purpose of this study. The present study is based on 100 samples of customers visiting the shopping malls done as a part of major study. A convenient sampling method was adapted for selection of the samples. Statistical analyses was carried out using the statistical package SPSS.

DATA ANALYSIS

i. Gender and Influencing Factors

The significant difference between gender and influencing factors was studied by formulating the following hypothesis.

Null Hypothesis: There is no significant difference among gender with respect to influencing factors.

The hypothesis was tested using independent sample t-test and the analysis is given in Table 1.

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Influencing Factors</th>
<th>Mean</th>
<th>S.D</th>
<th>Meal</th>
<th>S.D</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Motivational Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>All products under one roof</td>
<td>1.69</td>
<td>.836</td>
<td>1.73</td>
<td>.915</td>
<td>.242</td>
<td>.809</td>
</tr>
<tr>
<td>c.</td>
<td>High quality products</td>
<td>1.67</td>
<td>.818</td>
<td>2.38</td>
<td>1.114</td>
<td>3.646</td>
<td>.000</td>
</tr>
<tr>
<td>d.</td>
<td>Discount offers</td>
<td>2.71</td>
<td>1.197</td>
<td>2.04</td>
<td>1.364</td>
<td>2.594</td>
<td>.011</td>
</tr>
<tr>
<td>e.</td>
<td>Branded stores</td>
<td>2.11</td>
<td>1.356</td>
<td>2.76</td>
<td>1.151</td>
<td>2.536</td>
<td>.013</td>
</tr>
<tr>
<td>f.</td>
<td>Various options for same product</td>
<td>2.84</td>
<td>1.424</td>
<td>2.93</td>
<td>1.421</td>
<td>.339</td>
<td>.735</td>
</tr>
<tr>
<td></td>
<td>Overall motivational factors</td>
<td>11.02</td>
<td>3.30</td>
<td>11.84</td>
<td>3.884</td>
<td>1.113</td>
<td>.268</td>
</tr>
<tr>
<td>2.</td>
<td>Emotional Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Tasting variety of foods</td>
<td>1.69</td>
<td>1.016</td>
<td>1.53</td>
<td>.661</td>
<td>.896</td>
<td>.372</td>
</tr>
<tr>
<td>b.</td>
<td>Watching latest movies</td>
<td>1.96</td>
<td>1.036</td>
<td>2.42</td>
<td>1.340</td>
<td>1.930</td>
<td>.056</td>
</tr>
<tr>
<td>c.</td>
<td>Spending time with family and friends</td>
<td>1.65</td>
<td>.966</td>
<td>1.58</td>
<td>.866</td>
<td>.414</td>
<td>.680</td>
</tr>
<tr>
<td>d.</td>
<td>Versions of products</td>
<td>2.78</td>
<td>1.287</td>
<td>2.82</td>
<td>1.336</td>
<td>.154</td>
<td>.878</td>
</tr>
<tr>
<td>e.</td>
<td>Window shopping</td>
<td>2.71</td>
<td>1.536</td>
<td>2.93</td>
<td>1.355</td>
<td>.765</td>
<td>.446</td>
</tr>
<tr>
<td></td>
<td>Overall emotional factors</td>
<td>10.80</td>
<td>3.664</td>
<td>11.29</td>
<td>3.409</td>
<td>.685</td>
<td>.495</td>
</tr>
</tbody>
</table>
Source: Primary data
Since p value is less than 0.01, the null hypothesis is rejected at 1 per cent level with regard to the factor namely ‘high quality products’. Hence there is significant difference between gender and availability of high quality products. As regard to the factors, ‘discount offer’ and branded products the null hypothesis is rejected at 5 per cent level as the p value is less than 0.05, indicating significant difference with respect to gender. But for all other factors of major variables, motivational and emotional factors, the null hypothesis is accepted. The overall Motivational and emotional factors also show the acceptance of null hypothesis indicating no significant difference as regards to gender.

ii. Age and Influencing Factors
To understand the significant difference among age group and influencing factors, following hypothesis is formulated.

Null Hypothesis: There is no significant difference among age group with respect to influencing factors.

The hypothesis was tested using One Way ANOVA and the analysis is given in Table 2.

Table 2
Age and Influencing Factors

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Influencing Factors</th>
<th>Age Group in Years</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Motivational Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>All products under one roof</td>
<td>1.76</td>
<td>1.60</td>
<td>1.87</td>
</tr>
<tr>
<td>b.</td>
<td>High quality products</td>
<td>1.86</td>
<td>2.15</td>
<td>2.07</td>
</tr>
<tr>
<td>c.</td>
<td>Discount offers</td>
<td>2.33</td>
<td>2.58</td>
<td>2.13</td>
</tr>
<tr>
<td>d.</td>
<td>Branded stores</td>
<td>2.19</td>
<td>2.38</td>
<td>2.13</td>
</tr>
<tr>
<td>e.</td>
<td>Various options for same product</td>
<td>2.81</td>
<td>2.95</td>
<td>2.53</td>
</tr>
<tr>
<td>Total for motivational factors</td>
<td>10.95</td>
<td>11.65</td>
<td>10.73</td>
<td>11.56</td>
</tr>
<tr>
<td>2.</td>
<td>Emotional Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Tasting variety of foods</td>
<td>1.29</td>
<td>1.58</td>
<td>1.67</td>
</tr>
<tr>
<td>b.</td>
<td>Watching latest movies</td>
<td>1.48</td>
<td>1.95</td>
<td>2.73</td>
</tr>
<tr>
<td>c.</td>
<td>Spending time with family and friends</td>
<td>1.67</td>
<td>1.70</td>
<td>1.47</td>
</tr>
<tr>
<td>d.</td>
<td>Versions of products</td>
<td>2.67</td>
<td>2.78</td>
<td>3.07</td>
</tr>
<tr>
<td>e.</td>
<td>Window shopping</td>
<td>1.95</td>
<td>2.60</td>
<td>3.20</td>
</tr>
<tr>
<td>Total for emotional factors</td>
<td>9.05</td>
<td>10.60</td>
<td>12.13</td>
<td>13.00</td>
</tr>
</tbody>
</table>

Source: Primary data
Since p value is less than 0.01, null hypothesis is rejected at 1 per cent level with regard to the factors ‘watching latest movies’ and ‘window shopping’. Hence there is significant difference between age of the consumer with regard to the factors ‘watching latest movies’ and ‘window shopping’. The null hypothesis is also rejected at 5 per cent level in the case of overall emotional factor revealing that there is difference between age group with respect to emotional factors. As regard to other factors the null hypothesis is accepted showing no difference between age groups.

iii. Marital Status And Influencing Factors
To understand the significant difference among marital status and influencing factors, following hypothesis is formulated.

Null Hypothesis: There is no significant difference between marital status and the factors influencing consumers to visit shopping malls.

The hypothesis was tested using independent sample t-test and the results are given in Table 3.

Table 3
Marital Status and Influencing Factors

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Influencing factors</th>
<th>Marital Status</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Married</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>S.D</td>
<td>Mean</td>
</tr>
<tr>
<td>Motivational factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>All products under one roof</td>
<td>1.85</td>
<td>.770</td>
<td>1.55</td>
</tr>
</tbody>
</table>
Since p value is less than 0.01, null hypothesis is rejected at per cent level with regard to the factors ‘Watching latest movies, ‘Window shopping’ and ‘Overall emotional factors. Hence there is significant difference between marital status and those factors. Null hypothesis is rejected as regard to the factor ‘tasting variety of foods’ at 5 per cent level as the p value is less than 0.05, indicating significant difference between marital status and the factor ‘tasting variety of foods’. As regard to all other emotional factors and ‘Overall’ motivational factors, there is no difference with respect to marital status.

iv. Occupation and Influencing Factors
To understand the significant difference among occupation and influencing factors, following hypothesis was formulated.

Null Hypothesis: There is no significant difference among consumers having different occupation with respect to influencing factors.

The hypothesis was tested using One Way ANOVA and the analysis is given in Table 4.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Occupation and Influencing Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sl.No</td>
<td>Influencing factors</td>
</tr>
<tr>
<td>1.</td>
<td>Motivational factors</td>
</tr>
<tr>
<td>a.</td>
<td>All products under one roof</td>
</tr>
<tr>
<td>b.</td>
<td>High quality products</td>
</tr>
<tr>
<td>c.</td>
<td>Discount offers</td>
</tr>
<tr>
<td>d.</td>
<td>Branded stores</td>
</tr>
<tr>
<td>e.</td>
<td>Various options for same product</td>
</tr>
<tr>
<td>Overall</td>
<td>Motivational factors</td>
</tr>
<tr>
<td>2.</td>
<td>Emotional factors</td>
</tr>
<tr>
<td>a.</td>
<td>Tasting variety of foods</td>
</tr>
<tr>
<td>b.</td>
<td>Watching latest movies</td>
</tr>
<tr>
<td>c.</td>
<td>Spending time with family and friends</td>
</tr>
<tr>
<td>d.</td>
<td>Versions of products</td>
</tr>
<tr>
<td>e.</td>
<td>Window shopping</td>
</tr>
<tr>
<td>Overall</td>
<td>Emotional factors</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Since p value is less than 0.05, null hypothesis is rejected at 5 per cent level with regard to the factor ‘Branded store’. Hence there is significant difference in the case of consumers of different occupation with regard to the factor ‘Branded stores’. But there is no difference in the case of all other factors among consumers of different occupation.

v. Income and Influencing Factors
To understand the significant difference among income groups and influencing factors, following hypothesis was formulated.

Null Hypothesis: There is no significant difference among consumers having different occupation with respect to influencing factors.
The hypothesis was tested using One Way ANOVA and the analysis is given in Table 5.

### Table 5
**Income and Influencing Factors**

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Influencing factors</th>
<th>Income in Rs</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10000-20000</td>
<td>20001-30000</td>
<td>30001-40000</td>
</tr>
<tr>
<td>1.</td>
<td>Motivational factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>All products under one roof</td>
<td>1.73</td>
<td>2.33</td>
<td>1.67</td>
</tr>
<tr>
<td>b.</td>
<td>High quality products</td>
<td>2.13</td>
<td>2.50</td>
<td>1.95</td>
</tr>
<tr>
<td>c.</td>
<td>Discount offers</td>
<td>2.10</td>
<td>2.42</td>
<td>2.71</td>
</tr>
<tr>
<td>d.</td>
<td>Branded stores</td>
<td>2.60</td>
<td>2.92</td>
<td>2.29</td>
</tr>
<tr>
<td>e.</td>
<td>Various options for same product</td>
<td>2.79</td>
<td>3.25</td>
<td>2.86</td>
</tr>
<tr>
<td></td>
<td>Overall motivational factors</td>
<td>11.35</td>
<td>13.42</td>
<td>11.48</td>
</tr>
<tr>
<td>2.</td>
<td>Emotional factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>Tasting variety of foods</td>
<td>1.38</td>
<td>2.25</td>
<td>1.52</td>
</tr>
<tr>
<td>g.</td>
<td>Watching latest movies</td>
<td>1.98</td>
<td>2.67</td>
<td>2.38</td>
</tr>
<tr>
<td>h.</td>
<td>Spending time with family and friends</td>
<td>1.67</td>
<td>1.58</td>
<td>1.62</td>
</tr>
<tr>
<td>i.</td>
<td>Versions of products</td>
<td>2.81</td>
<td>3.67</td>
<td>2.90</td>
</tr>
<tr>
<td>j.</td>
<td>Window shopping</td>
<td>2.40</td>
<td>3.75</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
<td>Overall emotional factors</td>
<td>10.23</td>
<td>13.92</td>
<td>11.05</td>
</tr>
</tbody>
</table>

Source: Primary data

The p value for the factors ‘All products under one roof’, ‘High quality products’ ‘Overall motivational factors’ ‘Tasting variety of foods’ and ‘Versions of products’ is less than 0.05, the null hypothesis is rejected and it shows that there is significant difference among different income groups as regard to those factors. There is no significance difference among consumers of different income groups with regard to all other motivational and emotional factors.

### Table 6
**Educational Qualification and Influencing Factors**

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Influencing factors</th>
<th>Educational qualification</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SSLC</td>
<td>Graduate</td>
<td>Post-graduate</td>
</tr>
<tr>
<td>1.</td>
<td>Motivational factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>All products under one roof</td>
<td>1.46</td>
<td>2.00</td>
<td>1.40</td>
</tr>
<tr>
<td>b.</td>
<td>High quality products</td>
<td>2.31</td>
<td>2.23</td>
<td>1.30</td>
</tr>
<tr>
<td>c.</td>
<td>Discount offers</td>
<td>1.92</td>
<td>2.53</td>
<td>2.50</td>
</tr>
<tr>
<td>d.</td>
<td>Branded stores</td>
<td>2.62</td>
<td>2.70</td>
<td>1.60</td>
</tr>
<tr>
<td>e.</td>
<td>Various options for same product</td>
<td>2.85</td>
<td>3.23</td>
<td>2.60</td>
</tr>
<tr>
<td></td>
<td>Overall motivational factors</td>
<td>11.15</td>
<td>12.70</td>
<td>9.40</td>
</tr>
<tr>
<td>2.</td>
<td>Emotional factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Tasting variety of foods</td>
<td>1.31</td>
<td>1.77</td>
<td>1.60</td>
</tr>
<tr>
<td>b.</td>
<td>Watching latest movies</td>
<td>1.77</td>
<td>2.53</td>
<td>2.00</td>
</tr>
</tbody>
</table>

v. Educational Qualification and Influencing Factors

To understand the significant difference among educational qualification and influencing factors, following hypothesis was formulated.

**Null Hypothesis**: There is no significant difference among consumers of different educational qualification with respect to influencing factors.

The hypothesis was tested using One Way ANOVA and the analysis is given in Table 2.
Since p value is less than 0.01, the null hypothesis is rejected at 1 per cent level of significance in the case of emotional factors. Hence, concluded that there is significance difference among mean ranks among sub-variables of emotional factors in influencing consumers to visit shopping malls. The highest dominant component is ‘versions of products’, with a mean rank of 3.70, followed by ‘window shopping’ with a mean rank of 3.69. Among all the emotional factors, ‘tasting variety of foods’ is least dominant.

Source: Primary Data
Since p value is less than 0.01, the null hypothesis is rejected at 1 per cent level of significance. Hence, concluded that there is significance difference among mean ranks towards motivational factors influencing consumers to visit shopping malls. The highest dominant factor is ‘various options for same product’ with a mean rank of 3.73 followed by ‘branded stores’ with mean rank of 3.23. Among all the motivational factors, ‘availability of all products under one roof’ is the least dominant factor.

Source: Primary Data
Since p value is less than 0.05, null hypothesis is rejected at 5 per cent level with regard to ‘branded shops’ and ‘window shopping’. Hence there is significant difference among consumers having different educational qualifications as regard to the factors ‘branded shops’ and ‘window shopping’. There is no significant difference among consumers having different educational qualifications as regard to all other factors.

Mean Rank Among Influencing Factors
In order to make an assessment of the mean rank towards the influencing factors towards mall the following hypothesis was developed.
Null Hypothesis : There is no significant difference among mean ranks towards influencing factors. The result is given in Table 7.

Table 7
Friedman Test For Significant Difference Among Mean Ranks Towards Influencing Factors

<table>
<thead>
<tr>
<th>Influencing factors</th>
<th>Mean Rank</th>
<th>Chi - Square Value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivational factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All products under one roof</td>
<td>2.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• High quality products</td>
<td>2.61</td>
<td>60.759</td>
<td>.000</td>
</tr>
<tr>
<td>• Discount offers</td>
<td>3.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Branded stores</td>
<td>3.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Various options for same product</td>
<td>3.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Tasting variety of foods</td>
<td>2.24</td>
<td>100.591</td>
<td>.000</td>
</tr>
<tr>
<td>• Watching latest movies</td>
<td>3.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Spending time with family and friends</td>
<td>2.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Versions of products</td>
<td>3.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Window shopping</td>
<td>3.69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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FINDINGS
The study reveals that the major difference between male and female as regard to the influencing factors are discounts offers, high quality of products and branded stores in visiting shopping malls. Even though the availability of all products under one roof influences both male and female consumers in visiting shopping malls, female consumers give more importance to the same. Consumers of different age differ in their opinion on watching movies and window shopping. The married and unmarried consumers differ in their influencing factors, namely tasting variety of foods and window shopping. Branded store is the influencing factor as regards to consumers of different occupation. The consumers of different income are mostly influenced by the availability of all products under one roof, high quality products, branded stores, tasting variety of food and getting more options for the same product. Consumers of different educational levels are mostly attracted by branded stores and the opportunity for window shopping.

CONCLUSION
This study is conducted to make an assessment of motivational and emotional factors attracting the consumers towards shopping malls. Even though many differences are there on the influence of motivational and emotional factors over various demographic factors, some interesting insights are there as regard to certain sub-variables. The results are unique to Kerala State in India known as ‘Gods Own Country’.

REFERENCE

Why Value Investing Works: A Theoretical Framework

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Paper ID: ICBM-19-0359

Abstract – We hear a lot about value investing, an investing approach introduced by Benjamin Graham in the 1930s and championed by Warren Buffett, but we know very little about why it works so consistently. Academia has considered the consistent performance of value investors as a statistical anomaly, but given that it has persisted for more than eighty years, it warrants further investigation. In this theoretical paper, I tried to explain why value investing works. I covered both traditional and behavioral explanations as to why value investing outperformed other investing styles consistently over a long period of time.

“If value investing worked every day and every month and every year, of course, it would get arbitraged away, but it doesn’t. It works over time, and it’s quite irregular. But it does still work like clockwork; your clock has to be really slow.”
Joel Greenblatt (2013)

Investment vs. Speculation
Benjamin Graham, the acknowledged father of value investing emphasized the need to distinguish investment from speculation:

“It is injurious because it lends encouragement to the innate leaning of many people toward the excitement and hazards of stock-market speculation. We suggest that the margin-of-safety concept may be used to advantage as the touchstone to distinguish an investment operation from a speculative one” (Graham & Dodd, 2008, p. 519).

In fact, in standard textbooks and also in finance literature, academics use investment and gambling synonymously (see von Neumann & Morgenstern, 1947). In standard financial economics literature, investment is defined as foregoing current consumption in order to create the opportunity for a higher amount of consumption in the future. While this definition is conceptually correct, it is not operational. Benjamin Graham and David Dodd provided the operational definition of investment back in 1934. This investment approach has come to be known as value investing. 1 According to Graham and Dodd (2008):

“An investment operation is one which, upon thorough analysis, promises safety of principal and a satisfactory return. Operations not meeting these requirements are speculative” (p. 106).

There are three key phrases in this definition – thorough analysis, promises safety of principal, and satisfactory return – that require further attention. Ben Graham elaborated on these terms. For example, by thorough analysis he meant “the study of the facts in the light of established standards of safety and value”; safety of principal refers to the “protection against loss under all normal or reasonably likely conditions or variations,” and a satisfactory return is “a wider expression than adequate income, since it allows for capital appreciation or profit as well as current interest or dividend yield” (Graham & Dodd, 2008, pp. 106-107). Both the assurance of safety of principal and expectation of satisfactory rate of return hinge on the concept of margin of safety, which is the central concept of value investing. This definition serves a dual purpose. It not only defines investment; it also defines speculation. Whereas definitions are typically given in a sentence, this definition of investment is in two sentences, highlighting not only what it is but also what it is not. In the process, it deliberately puts speculation (which unfortunately gets confused with investment quite often) under the spotlight. This is in line with what Benjamin Graham had stated explicitly - that a fundamental requirement for an investor and his or her advisors is to be sure “particularly as to whether they have a clear concept of the differences between investment and speculation...” (Graham, 2006, p. 10) and “between market price and underlying value.”

Value Investing
I believe ‘value investing’ is a commonly misused terminology in investment. Almost anybody who is involved in investment at any level has the impression that they know or understand what value investing is. Often times that creates confusion among investors. A lot of investors, investment managers, investment management companies, academics, and financial journalists mistakenly believe (or maybe even pretend) that they know what value investing is. In some cases, some investors may claim that they are value investors

1 Benjamin Graham himself (Graham, 2006) referred to it as “the value approach to stock investment” (p. 204).
when they are basically applying a dip strategy – buying what is down as opposed to what is cheap. The reason behind this state of affairs is not clear. My conjecture is that they are doing it either because value investing has been around for so long, or because of its historical stellar performance record or may be because of its attachment to successful investors like Warren Buffett, or to get a wider acceptance in the investment community by saying that ‘we are also value’ (we don’t want to miss out on that or isolate us from a group of investors). In my experience it is only when you engage them in an in-depth discussion and you pay attention to their investment approach, that you will notice that they are not following the Graham-Buffett value investing principles. At best, they may be following the academic version or some other derivative version of value investing or just providing lip service to value investing.\(^2\) Klarman (1991) thinks that “value investing is one of the most overused and inconsistently applied terms in the investment business. A broad range of strategies make use of value investing as a pseudonym. Many have little or nothing to do with the philosophy of investing originally espoused by Graham” (p. 102).

Warren Buffett talked about this in his 1992 letter to Berkshire shareholders:

> “... we think the very term “value investing” is redundant. What is “investing” if it is not the act of seeking value at least sufficient to justify the amount paid? Consciously paying more for a stock than its calculated value – in the hope that it can soon be sold for a still-higher price – should be labeled speculation (which is neither illegal, immoral nor – in our view – financially fattening).

Whether appropriate or not, the term “value investing” is widely used. Typically, it connotes the purchase of stocks having attributes such as a low ratio of price to book value, a low price-earnings ratio, or a high dividend yield. Unfortunately, such characteristics, even if they appear in combination, are far from determinative as to whether an investor is indeed buying something for what it is worth and is therefore truly operating on the principle of obtaining value in his investments. Correspondingly, opposite characteristics – a high ratio of price to book value, a high price-earnings ratio, and a low dividend yield – are in no way inconsistent with a “value” purchase...” (Buffett, 1992, para. 57-58)

In response to a shareholder’s question in 2015 annual Berkshire shareholders meeting, Charlie Munger said “value investing will never go out of style. Who the hell doesn’t want value when they’re buying things? Why do we want it everywhere but in stocks?” (Otuteye & Siddiquee, 2016, p. 60).

The key characteristic of value investing is margin of safety, the gap between the market price of the asset and the asset’s intrinsic value. The other key characteristic of value investing is that security analysis should be carried out from an overall business ownership perspective. In other words, the investor should approach investment in common stock the same way they would carry out their analysis if they were interested in buying the entire business. Warren Buffett in “An Owner’s Manual”, a document that he distributed to Berkshire shareholders in 1996 mentioned:

> “Charlie and I hope that you do not think of yourself as merely owning a piece of paper whose price wiggles around daily and that is a candidate for sale when some economic or political event makes you nervous. We hope you instead visualize yourself as a part owner of a business that you expect to stay with indefinitely, much as you might if you owned a farm or apartment house in partnership with members of your family” (Buffett, 1996, para. 4).

Graham (2006) iterated the same in The Intelligent Investor:

> “Investment is most intelligent when it is most businesslike. It is amazing to see how many capable businessmen try to operate in Wall Street with complete disregard of all the sound principles through which they have gained success in their own undertakings. Yet every corporate security may best be viewed, in the first instance, as an ownership interest in, or a claim against, a specific business enterprise” (p. 523).

Klarman (1991) identified three central elements of value investing: “First, value investing is a bottom-up strategy entailing the identification of specific undervalued investment opportunities. Second, value investing is absolute-performance-, not relative performance oriented. Finally, value investing is a risk-averse approach; attention is paid as much to what can go wrong (risk) as to what can go right (return)” (p. 105). These characteristics set the scene for the value investors. Imagine if value investing is a top-down approach, then investors have to make accurate predictions about so many things, which I believe is futile on the part of investors. Value investors succeed because they follow

\(^2\) For example, in 2014, we attended a conference at a major value investing research centre, where there was a lot of discussion on beta as a measure of risk, which I believe, would have made Ben Graham cringe.
the teachings of Benjamin Graham. Value investing works because of all these characteristics.  

**Tenets of Value Investing**

The basic tenets of value investing are that:

i. there is a clear distinction between investment, speculation, and gambling;

ii. common stock investment should always be viewed as owning part of a real operating business;

iii. an investment portfolio must comprise a selection of good quality companies based on rigorous analysis of profitability and financial stability of the companies;

iv. one should buy stocks of companies only when they are trading below a reasonably estimated intrinsic value (the gap between the price and intrinsic value being the margin of safety);

v. risk is determined by the quality of operation of the business and especially by the price you pay for the stock relative to its intrinsic value;

vi. investor psychology plays a significant role in determining the returns to the investor; for an investor to be successful, he/she must keep their emotions under control and not be disturbed by short-term market volatilities nor influenced by the behavior of the crowd.

Ben Graham also has a view at the aggregate level of the structure and characteristic of financial markets in that context, namely, that:

a. at any point in time the stock price is the sum of the fundamental value and psychological factors, that is,

\[ P_0 = V_0 + S_0 \]

where

\[ P_0 = \text{Stock price}, \]

\[ V_0 = \text{Intrinsic Value (based on fundamentals),} \]

and

\[ S_0 = \text{Psychological factors}; \]

b. Psychological factors are erratic (but not like random errors that cancel out) and immeasurable and sometimes can be a large part of what is observed as the market price; therefore,

c. Stock price seldom equals intrinsic value and, hence, stocks are frequently either overvalued or undervalued.

In the next section, I review the literature on why value premium (the observation that portfolios formed on the basis of value criteria tend to outperform other portfolios) exists, starting with the traditional explanations and later provided some behavioral explanations of that. Traditional explanations have been around for quite some time now (see Fama & French, 1992). My contribution in this article would be to bring the behavioral side of the explanations. Investors suffer from various cognitive biases that I believe are a hindrance to the practice of value investing. Value investors that, even without consciously articulating it, have built-in systems for curbing the negative impact of cognitive biases on their investment decisions.

**Value: Academic Approach vs. Graham-Buffett Approach**

Although both Fama-French and Graham-Buffett’s approach share the word “value,” they are vastly and fundamentally different. Fama and French (1992) define value stock as a stock with high book-to-market ratios. True value investors will define value solely from the perspective of Benjamin Graham, not from a mere ratio (P/E) or a group of ratios (P/E, P/B or P/CF). Value investors may use some of these ratios for screening purposes.

Academic value (aka Fama-French value) is a misnomer. Fama-French approach provides an explanation for the persistent disparity of return across large numbers of stocks (see Fama & French, 1992), while Graham-Buffett approach helps investors to find true value opportunities with ample margin of safety.

To Fama-French, value is determined strictly by a database screen that sorts based on some ratios. To a value investor, value is a function of margin of safety, which can be established only by measuring market price against a range of intrinsic values, constructed through a conservative estimation of future cash flows.

Ben Graham’s approach involves examination of financial statements to find out the intrinsic value (i.e. absolute value) and then the margin of safety before investing in a stock. On the other hand, Fama-French approach involves buying stocks that are cheaper than others (i.e. relative value).

While Graham-Buffett value approach remains the same (see Graham & Dodd, 1934; Graham, 1949), Fama-French factor approach keeps adding factors in explaining the persistent disparity among a large set of stocks. They started with three factors, such as SMB (Small Minus Big), HML (High Minus Low) and RMW (the excess return on the market). Later they added two more factors, such as Robust Minus Weak (RMW) and CMA (Conservative Minus Aggressive).

In contrast to Fama-French’s factor approach, Graham-Buffett value approach helps investors to identify fundamentally strong businesses (i.e. businesses with sustainable competitive advantage aka wide moat) and to estimate an approximate range of intrinsic values that will ensure sufficient margin of safety.

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3 Margin of safety = (Intrinsic value – Price)/Intrinsic value; Ben Graham in chapter 20 of *The Intelligent Investor*, said the secret of sound investment can be distilled into these three words, “MARGIN OF SAFETY” (Graham, 2006, p. 512, caps in the original).

4 See Fama and French (1993) for a discussion of the factor returns.

5 See Fama and French (2015) for a discussion of the additional two factors.
Value Premium: Evidence and Explanation

Value premium refers to the higher risk-adjusted return of value stocks over growth stocks. I organized the discussion on value premium on the basis of the definition of value provided by Fama and French (1992) and the definition of investment provided by Graham (1949).

There is empirical evidence that value stocks outperform growth stocks consistently over a long period of time (see Fama & French, 1992; Fama & French, 1998; and Chan & Lakonishok, 2004). Fama and French (1992) identified a value premium in the U.S. stock market for the period of 1963-1989. They later extended the study back to 1926 and noticed a value premium in the average return of the earlier period (Davis, Fama & French, 2000).

The existence of value premium is not confined to the U.S. market. Fama and French (1998) confirmed that value premium exists in the twelve major EAFE markets (Europe, Australia, and the Far East). Chan and Lakonishok (2004) summarized the various explanations of the superior performance of value over growth stocks, and provide some new results on the profitability of value strategies based on an updated (incorporating data through 2001) and expanded sample (including developed markets outside the United States). Using a short sample period (10 years), Capaul, Rowley, and Sharpe (1993) confirmed that the value premium is pervasive in international stock returns. Chan, Hamao, and Lakonishok (1991) documented a strong value premium in Japan. Using four valuation ratios (i.e. P/E, price to cash flow, P/B and Dividend yield), Bauman, Conover and Miller (1998) found that value stocks generally outperformed growth stocks both on total-return and risk-adjusted basis in 21 countries for a 10-year period.

Chen and Zhang (1998) documented that value stocks offer reliably higher returns in the U.S., Japan, Hong Kong and Malaysia, but not in the high-growth markets of Taiwan and Thailand. Capaul et al. (1993) analyzed value (defined as low price/book ratios) and growth (defined as high price/book ratios) for six countries over the period from January 1981 through June 1992 and confirmed that value stocks outperformed growth stocks on average in each country during the period studied, both absolutely and after adjustment for risk.

To our knowledge, only three studies (Athanassakos, 2009, 2011; Otuteye & Siddiquee, 2013) have been conducted so far to test the existence and pervasiveness of value premium in the Canadian market. Athanassakos (2009) documented a consistently strong value premium using Canadian data from 1985-2005, which persisted in both bull and bear markets, as well as in recessions and recoveries. Otuteye and Siddiquee (2013) analyzed the S&P/TSX 60 group of companies using a value investing heuristic and notices that ‘value’ portfolio outperformed the market portfolio and other portfolios.

There is some empirical evidence that value investing (an investment approach solely based on the learning of Ben Graham as opposed to low P/E, P/B or P/CF ratios) outperforms other investing styles over a long period of time (see Graham, 1976; Buffett, 1984; Oppenheimer, 1984). For example, Graham (1976) showed in a 51-year performance study (1925-1975) that the value approach consistently resulted in a 1.5 per cent or better per annum return, which is twice the record of the DJIA for that period. Buffett (1984) tracked the performance of nine successful investment funds,6 that were managed using value investing principles learned either directly or indirectly from Benjamin Graham. Out of these funds, seven investment partnerships demonstrated long-term returns with a double-digit lead over the market average. Even the pension funds, expected to have more conservative portfolio mix, showed 5 per cent to 8 per cent return above the market. Oppenheimer (1984) selected stocks listed on NYSE and AMEX from 1974 to 1981 using Graham’s criteria and reported that an investor who had used Graham’s criteria would have achieved a mean annual return of 38 per cent against the CRSP Index of NYSE-AMEX securities return of 14 per cent. In an update, Oppenheimer (1986) noticed that the mean return from net current asset stocks (a stock selection approach developed by Benjamin Graham in the 1930s) for the 13-year period was 29.4% per year versus 11.5% per year for the NYSE-AMEX Index. Ibbotson and Riepe (1997) documented the performance of various value and growth indexes, such as Wilshire, Frank Russell, S&P/BARRA, and Barclays Global Investors and found that regardless of capitalization, every value index provided higher returns with less volatility than their growth counterparts. Dhatt, Kim, and Mukherji (1999) confirmed that value stocks during 1979-1997 outperformed growth stocks by 5.28 to 8.40 percentage points a year and had lower standard deviations and lower coefficients of variation than growth stock. Kwag and Lee (2006) show that investors, on average, always benefit from value investing regardless of economic conditions (both expansion and contraction periods), but benefit more when they pursue a value investing strategy during a period of economic contraction. Montier (2009) reported that “the value portfolio has earned around 13% p.a. in recessions, and about 22% p.a. in expansions. The growth portfolio has earned 5% p.a. in recessions, and 17% p.a. in expansions, so value has outperformed growth by over 7.5% p.a. in expansions, and by nearly 10% p.a. in recessions” (p. 62). Although academia is in agreement that value stocks outperform growth stocks irrespective of the definition of value, much less consensus exists about the underlying reasons behind this superior performance. For example, Fama and French (1992, 1996) reported that higher returns of value stocks relate to their higher levels of risk.

6 WJS Limited Partners; TBK Limited Partners; Buffett Partnership Ltd.; Sequoia Fund Inc.; Charles Munger Ltd.; Pacific Partners Ltd.; Perlmeter Investments Ltd.; Washington Post Master Trust; and FMC Pension Fund.
because these stocks are more prone to financial distress. Chen and Zhang (1998) concluded that value stocks are riskier because they are usually firms under distress, have high financial leverage, and face substantial uncertainty in future earnings. Rozeff and Zaman (1998) also characterize growth stocks as less risky and value stocks as riskier.

I think the risk based explanation of value premium is established on the idea that anything that outperforms over the long term must be a risk premium, because they believe risk and return are positively correlated. But we have now empirical evidence to show that risk and return aren’t closely correlated (Fischhoff, Slovic, Lichtenstein, Read & Combs, 1978; Slovic, Kraus, Lappe & Major, 1991; Alhakami & Slovic, 1994; McDaniels, Axelord, Cavanagh & Slovic, 1997; and Slovic & Peters, 2006).

On the other hand, Grinblatt and Titman (2001) maintain that “growth opportunities are usually the source of high betas,... because growth options tend to be most valuable in good times and have implicit leverage, which tends to increase beta, they contain a great deal of systematic risk” (p. 392). Gomes, Kogan, and Zhang (2003) consider that growth stocks are always riskier than value stocks since they are ‘leveraged’ on existing assets. Chan, Karsecki, and Lakonishok (2000) argued that the high prices of growth stocks does not reflect their fundamentals; rather, they reflect investors’ rosy expectations of future growth and of the companies’ ability to sustain growth. Athanassakos (2009) showed that value portfolios have lower betas than the growth portfolios, regardless of whether sorting is based on P/E or P/BV.

However, these explanations of value premium are in contradiction to some other studies like Lakonishok, Shleifer and Vishny (1994) and Ibbotson and Reipe (1997). For example, Lakonishok et al. (1994) suggested that investors’ cognitive biases and agency costs of professional investment management were the reasons for the superior performance of value portfolios. La Porta, Lakonishok, Shleifer and Vishny (1997) report that the superior return of value stocks is due to the expectational errors made by investors. Chan and Lakonishok (2004) documented that the market betas of both the value and glamour portfolios are very close to each other, so systematic risk is not an obvious suspect for explaining the value premium. Chan et al. (2000) examined the relative performance of value and growth stocks in the late 1990s and concluded that only a behavioral thesis can explain the recent relative stock price performance of the equity asset classes, not the rational-asset-pricing hypothesis or the new-paradigm thesis.

The higher risk explanation of value premium may be plausible if “value” is narrowly defined as low P/E or other similar price ratios, such as low P/B or low price to cash flow ratios (see Fama and French, 1998). However, I do not think this is a valid explanation for the value premium since stocks with poor performance in terms of earnings, cash flow or sales growth will not fulfill the criteria used by true value investors and thus would not normally be among the stocks that value investors will select for their portfolios. Value investors do not select stocks solely on the basis of low P/E or other price ratio. In fact, such an approach to investment will be regarded as antithesis to value investing because it does not meet Benjamin Graham’s requirement of “thorough analysis.” A true value investor may buy a stock that is momentarily experiencing a downturn in earnings but not one with a persistent past history of poor earnings.

**Value Investing and Behavioral Finance**

In the last decade, value investors did poorly (SPDR S&P 500 Value ETF, SPYV lags behind its growth rival, SPDR S&P 500 Growth ETF, SPYG by around 3.4 percent), illustrating the frustration of investors who have invested in these undervalued stocks. Some investors certainly left the value wagon and tried something that is working at the moment. Money manager Jean-Marie Eveillard in an interview with Jason Zweig in 2013 aptly mentioned that: “After one bad year investors were upset. After two they were mad, and after three they were gone” (Zweig, 2013, para. 6).

My understanding is that value investing works because it does not work all the time. If value investing was working all the time, investors would embrace it, and the edge for being a value investor will be gone. Shahan (1986) analyzed the investment records of the seven managers presented by Buffett (1984) and noticed that although they all outperformed the S&P 500 over a long period of time, none of the managers outperformed in every year. “Six of the seven managers underperformed the S&P 500 between 28.3% and 42.1% of the years covered. Often, the periods of underperformance lasted for several years in a row. In the case of Ruane, Cunniff’s Sequoia Fund which has produced a total return of 12,500% versus 4,900% for the S&P 500 from inception through 1999, it experienced declines of 39% in the 1973-74 period, and 30% in 1979-1980” (Browne, 2000, p. 5). Euclidean Technologies (2015) in its Q3 2015 letter showed very clearly that value investing does not outperform all of the time. In fact, there have been six periods since World War II when growth outperformed value on a trailing five-year compounded basis. In another study, Alberg and Seckler (2014) reported that “… over the period January 1973 to June of 2014, the value approach achieved a compound annualized return of 17.2% while the SP500’s total return (price change plus dividends) did 10.3%. … an investor using this value strategy would have had to endure 14-years (1988 through 2001) where he would not have received much feedback that he was on the right path” (para. 3). Graham (1960) noticed that market could be down for a quite long time. He gave two examples – ‘it took 25 years for the market to reach again the high level of 1929, or that D-J Average sold at the same high point in 1919 as it did in 1942 – 23 years later’ (p. 36). Berkshire Hathaway Inc. (NYSE: BRK.A and BRK.B), a company manage by legendary investors, Warren
Buffett and Charlie Munger underperformed the S&P 500 Index in 16 years (if you compare the annual percentage change in per-share market value of Berkshire with that of S&P 500 with dividend included) and in 11 years (if you consider the annual percentage change in per-share book value of Berkshire with that of S&P 500 with dividend included) in the last 51 years (1965-2015). However, it should be noted here that the compounded annual gain of Berkshire for the entire period (1965-2016) is 19.0% (based on book value) and 20.8% (based on market value) compare to the market, which is only 9.7% (S&P 500 dividend included) (Buffett, 2016). I don’t think many investors will have the conviction and patience to stay put for that long in order to see value investing works. The observations that value investing does better over time but does not do better consistently go hand in hand. Occasional underperformance along with short-term market volatility (that’s because investors prefer certainty over uncertainty) can make value strategies difficult to stick with.

The Giant Timber bamboo (Binomial nomenclature: Bambusa oldhamii) can serve as a metaphor why value investing works. When planted this type of bamboo, not much of growth really happens in the first few growing seasons. You may water it every day, but nothing will happen in the first three years. Then in the fourth year, it will grow 90 feet in six weeks. Value investing also works the same way. For example, Walter Schloss, one of the Superinvestors of Graham-and-Doddsville as identified by Buffett (1984) outsmarted the market over a 47-year period. What many investors don’t know is that he underperformed the market for a 10-year period (from 1989-1998, the S&P index crushed Schloss).

“Adhering to value investment principles in periods such as 1998, 1999, and the first quarter of 2000 required a tremendous amount of conviction. You are derided for not adapting to a changing world, for failing to understand “new paradigms.” How many times did we hear that the old methods of valuation were not relevant to the “new economy?” We were told that “hits,” not profits, were what was important in valuing Internet companies” (Brown, 2000, p. 7).

Just for reflection here - can we think about ourselves or some investors who would realistically follow the same strategy that underperform for a period of 10 years? What will happen to the fund manager who has underperformed the market for 10 straight years? In this section, I will try to address these concerns using some explanations from behavioral finance.

Value investing and behavioral finance are joined at the hip. One of the reasons why value investing worked for so long is because of the behavioral components it entails. If investors believe in market efficiency and then they will immediately revise the security price, which may diverge from the intrinsic value of the security. These divergences can widen due to cognitive biases and can last over long period of time. Montier (2009) in his book, Value Investing: Tools and Techniques for Intelligent Investment discussed several behavioral stumbling blocks to value investing: “loss aversion, present bias, herding, availability and overconfidence are just a few of the hurdles that must be overcome to exploit value opportunities” (p. 129).

What I understand from the cognitive bias literature that the major obstacle to practicing value investing is loss aversion (the tendency for people to strongly prefer avoiding losses to acquiring gains, because losses loom larger than the corresponding gains, see Kahneman & Tversky, 1979). Kahneman and Tversky (1979) in their seminal work on decision making under uncertainty, report that people underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty, which contributes to risk aversion in choices involving sure gains and to risk seeking in choices involving sure losses. Likewise, investors are also looking for a strategy that will work all the time. But that type of strategy should not exist and is not possible to exist since the nature of investment is highly probabilistic, uncertainty is the key to investing. Montier (2009) reported that in three years of every 10 years, investors would see a negative return, and this will prevent investors to stick to an approach that works, when the secret to stellar performance is to follow an approach dispassionately (see Otuteye & Siddiquee, 2015a).

Value investors buy undervalued securities or buy in a downward market situation. Due to some cognitive biases investors cannot take full advantage of undervalued stocks or a downward market. For example, due to availability heuristic (see Tversky & Kahneman, 1973), investors in general will find it very difficult to invest in a downward market. Nobody wants to buy undervalued, basket case stocks. The so-called growth stocks become salient and available, which will subsequently block investors considering value stocks. Following a market crash (think of the dotcom crisis in 2000 or the sub-prime mortgage crisis of 2007-2008), investors will overweight the likelihood of the occurrence of similar crashes in the future since the experience is so vivid and fresh in their memory and therefore stay away from the market.

However, immediately after the financial crisis, when the market is severely down, chances of finding undervalued stocks increase. But to take this advantage, investors are required to go against the crowd. In order to implement a contrarian strategy, investors need to buy what most people are selling and sell what most people are buying, which is painful, unpopular and may be subject to ridicule. Warren Buffett in his famous 2008 op-ed in the New York Times, “Buy American, I Am,” he mentioned: “A simple rule dictates my buying: be fearful when others are greedy, and be greedy when others are fearful” (Buffett, 2008). Despite Buffett’s sheer confidence in the American corporations, not many investors invested like
him during the market debacle of 2007–2008. One of Sir John Templeton’s maxims is, “To buy when others are despondently selling and sell when others are greedily buying requires the greatest fortitude and pays the greatest reward” (Franklin Templeton Investments, 2014, p. 9). Criticizing a banker, John Maynard Keynes opined in 1944, “My central principle of investment is to go contrary to general opinion, on the ground that, if everyone is agreed about its merits, the investment is inevitably too dear and therefore unattractive” (Keynes, 1983 p. 111).

But going against the crowd is hard. Investors do not want to ostracize them from their peers or friends. Montier (2011) mentioned that “Humans are prone to herd because it is always warmer and safer in the middle of the herd. Indeed, our brains are wired to make us social animals. We feel the pain of social exclusion in the same parts of the brain where we feel real physical pain. Investors do social proofing, a concept introduced by psychologist Robert Cialdini that investors feel more comfortable to go along with the crowd when making investment decisions at times of uncertainty (Cialdini, 1984). So being a contrarian is a little bit like having your arm broken on a regular basis” (p. 7). It requires a lot of courage, conviction and discipline to stand up against popular opinion. Eisenberger and Lieberman (2004) also believe that following a contrarian strategy is like having your arm broken on a regular basis—not fun! Moreover, it requires certain personality traits and modes of thought that uniquely equip contrarians to handle the stress of standing against the emotional crowd.

“In many instances, value investing proves fundamentally uncomfortable, as the most attractive opportunities frequently lurk in unattractive or even frightening places. As a result, many investors abandon sensible strategies to pursue the fashion du jour” (Swensen, 2000, p. 97).

Think about Nicolaus Copernicus and Galileo who contended that the Earth revolved around the Sun, not the other way around or Prof. Robert Goddard in 1919 when he contended that it is possible to send rocket to the Moon. The New York Times published an editorial, A Severe Strain on the Credulity, scoffed at the proposal.

“That Professor Goddard, with his ‘chair’ in Clark College and the countenancing of the Smithsonian Institution, does not know the relation of action and reaction, and of the need to have something better than a vacuum against which to react—to say that would be absurd... Of course he only seems to lack the knowledge ladled out daily in high schools” (“A Severe Strain on the Credulity,” 1920).

More than 49 years later, The New York Times issued “A Correction” on July 17, 1969, the day after the launch of Apollo 11:

“Further investigation and experimentation have confirmed the findings of Isaac Newton in the 17th Century and it is now definitely established that a rocket can function in a vacuum as well as in an atmosphere. The Times regrets the error” (“A Correction,” 1969).

Howard Marks, in his book, The Most Important Thing: Uncommon Sense for the Thoughtful Investor weighed in on why value investing works:

“To boil it all down to just one sentence, I’d say the necessary condition for the existence of bargains is that perception has to be considerably worse than reality. That means the best opportunities are usually found among things most others won’t do. After all, if everyone feels good about something and is glad to join in, it won’t be bargain-priced” (Marks, 2011, p. 105).

It is even harder for professional investors, because if they are wrong, they are wrong publicly, which will bring shame and may cost them their job (i.e. career risk; see Hu, Kale, Pagani & Subramanian, 2010; Porter & Trifts, 2014).

Another major stumbling block is instant gratification (people behave impatiently today but prefer to act patiently in the future, see Ainslie, 1975; Frederick, Loewenstein & O’Donoghue, 2002; McClure, Laibson, Loewenstein & Cohen, 2004). If investors are given a choice, they will choose a small benefit in the short-term over a larger benefit in the long-term. However, if all choices appear to be in the long-term, larger benefits will be chosen, even if these appear even later than the smaller benefit. People act as if their discount rates (the rate at which they trade-off consumption increments at different points in time) vary with the length of time to be waited. Economists, on the other hand assume that a person’s relative preference for well-being at an earlier date over a later date is the same no matter when she is asked (O’Donoghue & Rabin, 1999). Value investing requires time to deliver results, that means value investors have long investment horizon. In one study of value investors, Montier (2009) found that ‘they had an average holding period of 5 years, whereas the average holding period for a stock on the New York Stock Exchange is only 11 months’ (p. 133). Zweig (1999) reports that ‘in 1959, the average mutual fund turnover rate was 16.4%, equating to a six-year holding period; by 1979, it was 63.3%; and now it has passed 83%, or just 14 months of ownership’ (pp. 1-2). Browne (2000) others scramble for survival. That’s what allowed us to invest $15.6 billion in 25 days of panic following the Lehman bankruptcy in 2008.” (Buffett, 2010)
believes that it exceeds 100 percent. Harris and Schultz (1998) found that day trading is most profitable for time horizons shorter than one minute and 20 seconds; after five minutes, the mean profit disappears entirely.

Another challenge in practicing value investing is imprinting (see Lorenz, 1988). In the context of business education, not many business schools that I know of have value investing in their curriculum. Students like ducklings follow what they are being taught in business schools. According to my knowledge, in Canada there are only three schools where students can study value investing, namely Ivey Business School at the Western University and at both campuses of the University of New Brunswick. The University of Toronto’s School of Continuing Studies offers a class on value investing. Merton H. Miller, 1990 Nobel Laureate in Economic Sciences once said “Habits of thought acquired in graduate school have a tendency to stay with you.”

Christopher H. Browne of Tweedy, Browne Company LLC in a presentation in Columbia Business School: “A whole body of academic work formed the foundation upon which generations of students at the country’s major business schools were taught about Modern Portfolio Theory, Efficient Market Theory and Beta. In our humble opinion, this was a classic example of garbage in/garbage out…” (Browne, 2000, p. 1).

A similar concept would be sunk cost fallacy. In economics and also in corporate finance, it is assumed that sunk costs are irrelevant when it comes to decision making since the costs have already been incurred and cannot be recovered. Only the future costs are relevant to an investment decision. However, in behavioral economics, sunk costs are very much relevant since they affect our decisions. Richard Thaler, one of the pioneers of Behavioral Economics mentioned that “Economic theory implies that only incremental costs and benefits should affect decisions. Historical costs should be irrelevant. But do (non-economist) consumers ignore sunk costs in their everyday decisions? As [Examples 4 and 5] suggest, I do not believe that they do. Rather, I suggest the alternative hypothesis that paying for the right to use a good or service will increase the rate at which the good will be utilized, ceteris paribus. This hypothesis will be referred to as the sunk cost effect” (Thaler, 1980, p. 47).

Teger (1980) wrote a book on Too Much Invested to Quit. An excerpt from the book:

“Many years ago I saw a cartoon that depicted a man walking toward his girlfriend’s front door. He was carrying a box of candy, a bouquet of flowers, and a diamond engagement ring. As he turned down the path toward the door, he shouted back to a friend on the sidewalk, “I really don’t like her very much anymore, but I have too much invested to quit!” (p. 1).

Another stumbling block is anchoring bias, the tendency to rely too heavily, or “anchor,” on a past reference or on one trait or piece of information when making decisions (see Tversky and Kahneman, 1974). Most of the investors are anchored on price whereas value investors are anchored on intrinsic value.

Another stumbling block in practicing value investing is that value investing usually simple and easy to follow. But following simple rules is not fun. Paul Samuelson once said, “Investing should be dull. It shouldn’t be exciting. Investing should be more like watching paint dry or watching grass grow. If you want excitement, take $800 and go to Las Vegas. [However] it is not easy to get rich in Las Vegas, at Churchill Downs, or at the local Merrill Lynch office” (Farrell, 2003, p. 322). John Maynard Keynes has said the same: “The game of professional investment is intolerably boring and over-exacting to anyone who is entirely exempt from the gambling instinct; whilst he who has it must pay to his propensity the appropriate toll!” (Keynes, 1935, p. 157).

At a December 6, 1994 special meeting of the New York Society of Security Analysts (NYSSA)(10). Warren Buffett said:

“I consider there to be three basic ideas, ideas that if they are really ground into your intellectual framework, I don’t see how you could help but do reasonably well in stocks. None of them are complicated. None of them take mathematical talent or anything of the sort. [Graham] said you should look at stocks as small pieces of the business. Look at [market] fluctuations as your friend rather than your enemy—profit from folly rather than participate in it. And in [the last chapter of The Intelligent Investor], he said the three most important words of investing: ‘margin of safety.’ I think those ideas, 100 years from now, will still be regarded as the three cornerstones of sound investing.

8 Zero year of holding period, which may be possible with the introduction of high frequency trading (HFT) platforms.

9 Imprinting, in psychology, a form of learning in which a very young animal fixes its attention on the first object with which it has visual, auditory, or tactile experience and thereafter follows that object (The Editors of Encyclopedia Britannica, 2016).

... [Graham] wasn’t about brilliant investments and he wasn’t about fads or fashion. He was about sound investing, and I think sound investing can make you very wealthy if you’re not in too big of a hurry. And it never makes you poor, which is better.  
... [Value investing] ideas seem so simple and common-place. It seems like a waste to go to school and get a Ph.D. in economics. It’s little like spending eight years in divinity school and having someone tell you the Ten Commandments are all that matter.  
... If calculus were required, I’d have to go back to delivering papers. I’ve never seen any need for algebra. Essentially, you’re trying to figure out the value of a business. It’s true that you have to divide by the number of shares outstanding, so division is required. If you were going out to buy a farm or an apartment house or a dry cleaning establishment, I really don’t think you’d have to take someone along to do calculus. Whether you made the right purchase or not would depend on the future earning ability of that enterprise, and then relating that to the price you are being asked for the asset” (Buffett, 1994).

One of the reasons why investors can’t follow value investing approach is overconfidence. Overconfidence occurs when someone’s subjective confidence in their judgment is relatively higher than their objective accuracy. Because of overconfidence investors believe that they have superior stock selection skills. What surprises me even more is that investors also believe in their skills of picking smart investment managers who they think is capable of picking the right stocks. It is believed that both the illusion of control (i.e. believing we can influence things that we clearly can’t) and the illusion of knowledge (i.e. because we know more, we must be able to make superior decisions) lead to overconfidence. Interesting enough, on difficult tasks (such as picking the right stocks or the capable managers), people overestimate their actual performances; however, on easy tasks (such as investing in index funds), people underestimate their actual performances (Moore & Healy, 2008).

**Way Forward**

Investors need emotional discipline to invest or remain invested in a downward market. Talking about the secret to his investment success, Warren Buffett rightly mentioned in 2015 Berkshire annual meeting: “It’s [investment is] actually an easy game. It does need a certain amount of IQ but it requires much more emotional stability …” (Otuteye & Siddiquee, 2015b).

I believe that to improve investors’ decision-making process, we should consider the behavioral side of the investors, i.e. the cognitive limitations that we have as human beings and what can be done to put them in check when we make investment decisions.  

In a rare video of Benjamin Graham11, he mentioned that “The explanation [of why professional investors tend to be wrong a lot of times] cannot be found in any mathematics, but it has to be found in investor psychology. You can have an extraordinary difference in the price level merely because not only speculators but investors themselves are looking at the situation through rose-colored glasses rather than dark-blue glasses. It may well be true underlying psychology of the American people has not changed so much” (The Heilbrunn Center for Graham & Dodd Investing, 2013).

Another way to deal with this is to set it straight at the beginning what is investment and what it is not. The conceptual definition of investment would be forgoing current consumption in order to increase future consumption possibility (wealth). However, Benjamin Graham and David Dodd provided the operational definition of investment in 1934: “An investment operation is one which, upon thorough analysis, promises safety of principal and a satisfactory return. Operations not meeting these requirements are speculative” (Graham & Dodd, 2008, p. 54).

Another major element in Benjamin Graham’s paradigm of investing is distinguishing clearly between investing and speculating and hence between investors and speculators. This distinction can be challenging. In *Security Analysis*, Ben Graham made it clear: “The difference between investment and speculation, when the two are thus opposed, is understood in a general way by nearly everyone; but when we try to formulate it precisely, we run into perplexing difficulties” (Graham & Dodd, 2008, p. 101). My understanding is that it does not depend on the assets investors buy, rather it depends on the process they follow to buy and sell and their time horizon (short-term vs. long-term).

**Conclusion**

A true “value” investment opportunity is not going to look that attractive in the context of the current market narrative. The natural investor tendency would be not to buy this security. This is why value investing can be so hard to practice or to stick around for a long time when the market is going down. To buy such a security and then to see it continue to underperform can be seen as a threat to portfolio managers’ credibility (i.e. career risk). In short, being a value investor, especially when it is not working runs the risk of looking foolish (i.e. conformity bias). Browne (2000) explained the career risk with the following example: “If a manager held IBM and it went

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11 You can watch the video, The Legacy of Benjamin Graham here: https://youtu.be/m1WLoNEqkV4
down, it did not matter because everyone else owned IBM… If one owned a more obscure company with a recent poor track record that got into greater financial difficulty, there was a considerably greater risk of criticism and losing accounts” (p. 6). Money managers are not stupid but they cannot afford the short-term underperformance because their performance is measured on a relative basis.

Reese and Forehand (2009) discussed the investment approaches introduced and championed by noted investor, Joel Greenblatt:

“…that the magic formula works in part because it doesn’t work all the time… But if you stick with them when others who can’t handle the short-term underperformance head for the door, you’ll reap some excellent rewards in the long run” (p. 227).

Shahan (1986) analyzed the investment records of the seven managers presented by Warren Buffett in an article in 1984 as a response to Michael Jensen.12 Shahan (1986) made two interesting observations about short-term performance of these superinvestors: "(1) with only one exception (Buffett), a superior long-term record can occur despite miserable three or even six-year segments and (2) if an effort is made to look at shorter intervals of performance, the effect may be to reduce the longer-term performance …” (p. 16). Warren Buffett commented on Shahan’s article by saying that “it would be somewhat preferable to use returns prior to the incentive fee paid to the general partner, since it is those returns that actually measures investment management results. Since the incentive fees are large, they tend to dampen performance in the good years. This makes relative management performance look poor in years when the stock market does well, but the real difference is simply in the allocation of the gains, not in managerial results” (Shahan, 1986, p. 18). Investment managers would like to outperform every quarter or even years consistently forever, but it’s not practical and moreover it’s not in the nature of investing. Shahan (1986) made some important contributions by saying that:

“I assume that none of these managers panicked in the face of adversity and changed his style after three disappointing years of using a value approach. But how many investors have the strength of character to continue an approach that can be unrewarding for three or even five years? Isn’t it easier, after a miserable one or two years, to grab at the things that are moving, that other managers who are doing well are holding, that you feel foolish for having missed? The true impediment to superior investment results, then, seems to lie only partially in the realm of the financial risk attached to the security purchased (however that is measured). Of perhaps equal importance is the pressure of client or investor impatience …” (p. 16).

In an interview with Financial Advisor, noted value investor, Jean-Marie Eveillard raised this question, “If Warren Buffett is the second-richest man in the world, why aren’t there more professional value investors?” Gladly he has also provided an answer to this puzzling question, “The answer is purely psychological. If you are a value investor, every now and then you lag, or experience what consultants call tracking error. It can be painful. To be a value investor, you have to be willing to suffer pain” (Simonoff, 2007, p. 3). Klarman (1991) summarized the prerequisite for value investing: “The hard part is discipline, patience, and judgment. Investors need discipline to avoid the many unattractive pitches that are thrown, patience to wait for the right pitch, and judgment to know when it is time to swing” (p. 104).

Value investing works because it doesn’t work all the time and also value investing is simple but not that easy to practice, psychologically speaking.

REFERENCE


12 Columbia University hosted a debate to celebrate the 50th anniversary of the publication of Benjamin Graham and David Dodd’s classic text Security Analysis on May 17, 1984. Michael Jensen was on the offensive side while Warren Buffett was on the defensive side. Later on, at the cocktail reception, everyone’s talking about how Warren crushed Michael. Warren published his lecture in 1984, The Superinvestors of Graham-and-Doddsville in Hermes. I could not find a copy of Michael Jensen’s lecture anywhere.

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Abstract – A rational investor looking for opportunities to maximize return will attempt to consider all possible risk factors associated with an investment. Foreign investors are now becoming more interested in investing in our country, Bangladesh; as such, potential investors keen to know inherent country risk before making prudent investment decision. The authors of this paper have analyzed the position of Bangladesh in the scale of systematic factors like GDP growth, inflation rate, corruption, access to financial information and so on in comparison to some other South Asian countries namely India, Pakistan, Sri-Lanka and Nepal. In so doing, this study suggested to incorporate the country risk premium while calculating required rate of return from a rational investor’s perspective using Capital Asset Pricing Model. To develop better insight in dealing with country risk of Bangladesh, the authors have tried to quantify the country risk premium of Bangladesh.

Keywords – Bangladesh country risk, equity Risk premium, sovereign default spread, required rate of return, country risk premium

I. INTRODUCTION

When investors invest their money in stocks and bonds, they expect risk adjusted returns from these securities. The higher the expected risk is assumed, the higher the expected return estimated by the investors. Liquidity risk, default risk, inflation risk, reinvestment risk are some of the major risks which are of paramount importance in designing one’s expected return from a security. These risks are the prime concern of a local investor. When a foreign investor wants to invest in domestic stock or bond market he has to consider one additional risk along with the mentioned risks, which can be coined as ‘Country Risk’.

H. Meldrum, D. (2000) [1] has mentioned that, a country risk means the risk which must be taken to consideration of an investor when he is planning to invest in a foreign country. He has also included that, this added risk, which is called country risk, is the result of national differences. Country risk varies from nation to nation because of the unique economic structures, policies, socio-political institutions, geography and currencies, stated H. Meldrum (2000). In this paper the authors have tried to find out and analyze the country risk premium of Bangladesh as foreign investors are now becoming more interested to invest in Bangladeshi capital market especially in stock market.

This study delineates comparative macroeconomic performance analysis of Bangladesh and its neighboring countries, considering the fact that they hold the best threshold to measure performance against. India, Pakistan, Nepal and Sri Lanka is considered in the following table to compare with Bangladesh as they represent similar economic, political, social and technological developments.

Table 1: Country characteristics by access frequency group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Bangladesh Mean</th>
<th>India Mean</th>
<th>Pakistan Mean</th>
<th>Nepal Mean</th>
<th>Sri Lanka Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Growth</td>
<td>6.52</td>
<td>6.9</td>
<td>4.04</td>
<td>3.72</td>
<td>5.34</td>
</tr>
<tr>
<td>Inflation</td>
<td>6.52</td>
<td>6.92</td>
<td>6.88</td>
<td>8.86</td>
<td>4.68</td>
</tr>
<tr>
<td>External debt (%GDP)</td>
<td>-19.25</td>
<td>22.23</td>
<td>24.15</td>
<td>20.44</td>
<td>55.256</td>
</tr>
<tr>
<td>Fiscal Balance (%GDP)</td>
<td>-3.36</td>
<td>-7.08</td>
<td>-6.32</td>
<td>0.06</td>
<td>-5.88</td>
</tr>
<tr>
<td>Current Account (%GDP)</td>
<td>1.06</td>
<td>-1.92</td>
<td>-1.44</td>
<td>4.78</td>
<td>-3.3</td>
</tr>
<tr>
<td>Government effectiveness</td>
<td>-0.434</td>
<td>-0.072</td>
<td>-0.728</td>
<td>-0.924</td>
<td>-0.11</td>
</tr>
</tbody>
</table>

Source: IMF, The Global Economy [15], [16].

Table 1 compares Bangladesh to its neighboring countries and it is justified to conclude that Bangladesh is performing well comparatively. GDP growth rate is decent and also following the closest country, India. Along with GDP, Inflation is also high but not as high as Nepal. The fiscal balance is negative but a negligible amount and current account is on positive balance. Government effectiveness shows to be negative but better than Pakistan or Nepal. Moreover, external debt seems to be the lowest for Bangladesh showing true signs of self-sufficiency.
Table 2: Global Competitiveness Index 2017-2018 Edition

<table>
<thead>
<tr>
<th>Individual indicator rank</th>
<th>Bangladesh</th>
<th>India</th>
<th>Pakistan</th>
<th>Nepal</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corruption</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Access to finance</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Policy Instability</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Tax Rates</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Tax regulations</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Inadequate supply of Infrastructure</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Inefficient Government Bureaucracy</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Inadequately Educated Workforce</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Poor work ethic in national labor force</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Government instability/coups</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Foreign currency regulations</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Crime and theft</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: World Bank [17].

Table 2 deals with global competitiveness among the neighboring countries of Bangladesh. From here it is found that, corruption is comparatively lower in Bangladesh than the other countries. Access to finance, policy instability, inefficient government bureaucracy have average indicator for the country. Factors like inadequately educated workforce, government instability and foreign currency regulation have the highest point than the other countries. To recapitulate, Bangladesh is in an average position among the other countries listed in the table.

Table 3: Indicator of Governances, South Asia (Average of 2012 - 2016)

<table>
<thead>
<tr>
<th>Country</th>
<th>Political Stability</th>
<th>Voice &amp; Accountability</th>
<th>Control of Corruption</th>
<th>Regulatory quality</th>
<th>Rules of Law</th>
<th>Government effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>-1.272</td>
<td>-0.47</td>
<td>-0.848</td>
<td>-2.34</td>
<td>-0.784</td>
<td>-0.434</td>
</tr>
<tr>
<td>India</td>
<td>-1.084</td>
<td>0.416</td>
<td>-0.422</td>
<td>-0.416</td>
<td>-0.062</td>
<td>-0.072</td>
</tr>
<tr>
<td>Pakistan</td>
<td>-2.526</td>
<td>-0.754</td>
<td>-0.904</td>
<td>-0.674</td>
<td>-0.82</td>
<td>-0.728</td>
</tr>
<tr>
<td>Nepal</td>
<td>-1.004</td>
<td>-0.45</td>
<td>-0.686</td>
<td>-0.808</td>
<td>-0.726</td>
<td>-0.924</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>-0.3</td>
<td>-0.45</td>
<td>-0.282</td>
<td>-0.102</td>
<td>-0.108</td>
<td>-0.11</td>
</tr>
</tbody>
</table>

Source: World Bank [18].

In Table 3, the authors have understood that the political instability in Bangladesh is poorer than India, Nepal and Sri Lanka. After that, the voice and accountability is lower than the previously mentioned three countries. All the other indicators like control of corruption, regulatory quality, rules of law and government effectiveness in Bangladesh is comparatively lower than the other countries of South Asia.

Table 4: Interest Rates of Different Saving Instruments As Of 2018

<table>
<thead>
<tr>
<th>T-Bill</th>
<th>T-Bond</th>
<th>Shanchayapatra</th>
<th>DPS</th>
<th>STD</th>
<th>Savings</th>
<th>FDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Days T-Bill: 3.00%-6.00%</td>
<td>2 years T-Bond: 3.454%-6.81%</td>
<td>5 year 11.28%</td>
<td>10%-15%</td>
<td>9%-14%</td>
<td>3%-6%</td>
<td>4%-7%</td>
</tr>
<tr>
<td>91 Days T-Bill: 2.69%-6.50%</td>
<td>5 years T-Bond: 5.18%-7.25%</td>
<td>3 Year 11.83%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>182 Days T-Bill: 3.18%-7.00%</td>
<td>10 years T-Bond: 6.95%-9.98%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>364 Days T-Bill: 3.48%-6.75%</td>
<td>15 years T-Bond: 7.00%-10.50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 years T-Bond: 3.454%-6.81%</td>
<td>20 years T-Bond: 7.90%-11.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Bangladesh Bank [19], [20], [21].
Table 4 illustrates the return in different types of investments as of 2018.

Table 5 indicates the credit worthiness of a country. From this table India has the highest credit rating among the five countries. That means India’s performance is better in the business sector. Bangladesh is in the second position after India. Pakistan and Sri Lanka is not performing as well as India and Bangladesh.

II. LITERATURE REVIEW

Generally, risk is associated with all kind of investments with the relationship of the sum of risk free rate and the risk premium along with the condition of higher risk higher return. Risk compensation is major finding to the investors for expected return that raise a question on how to measure risk and convert them into expected return on investment. Due to the wide application and acceptance among valuation experts, Aswath Damodaran’s Country Risk Premium concept can be seen as the current market standard among the various quantitative methods because his published estimated in own valuations is both intuitively safe, in terms of following the market standard, as well as convenient (Aleksandar 2011) [2].

The easiest way to calculate Country risk premium suggested by Damodaran (2003) [3] is to consider the rating for country’s debt that rating agencies like S&P, Moody’s, Fitch and IBCA allocate. Due to its own limitations, he suggests three more ways of calculating CRP. One way is to compare default free bond yield to the yield of other bonds. Another way is to compare is to measure standard deviation of stock against standard deviation of bond and multiply with country default spread. The last method on which this paper focuses on is to calculate country risk premium with the desired country’s stock market standard deviations to another benchmarked country’s.

Rahul & Priti (2014) [4] suggested that domestic factors like inflation, economic growth, money supply, exchange and interest rate and also some global factors affect the country risk premium. This is why Rahul & Priti finds relation of currency risk with country risk and suggests proper monetary policies can help lower country risk whereas, high inflation and high unemployment may result in higher country risk. Rahul & Priti (2014) [4].

Emerging market has a different cost of capital for investment than in the developed market where researchers pointed out four unique features of developing equity markets: “average returns will be higher, correlation with developed markets are low, predictable returns and volatility is high (Bekaert and Harvey 1995) [5]. By using local and dollar-denominated interest rates (Bailey and Chung 1995) [6] formulated a factor for currency risk in a multi-factor model of equity returns. Cumby and Evans (1995) [7] demonstrated that the market can distinguish between current and future credit quality and analyze alternative models of the dynamics, which is default in a probabilistic setting. Expectations hypothesis along with a term structure of implied options volatilities, risk as opposed to risk premia in the foreign exchange market was examined in a research (Campa & Chang 1995) [8]. Then in 1997, De-Santis and Gerard used statistical procedures to isolate indirectivity of the currency component of risk premium which is contradictory to the previous research. Capital market segmentation in the context of the relation between the closed-end fund premium and currency and country risk factors parallels the work of Bailey, Chan and Chung (2000) [9]; it is also consistent with Domowitz, Glen, and Madhavan (1997), who provide direct evidence on internal market segmentation in the domestic equity market. Domowitz I., Gelen J., & Madhavan A. (1998) [10] have stated that, the country risk premium can play an important role if it is anticipated correctly because if it is forecasted without major error and then the cost of borrowing can be substantially lowered. Estrada (2001) notes – defining the risk, determining the factors that influence the return on equity is complicated enough in developed countries but much more difficult in emerging markets.

The debate for whether CAPM is an appropriate model to measure cost of capital has been going for decades since it
makes use of risk factor that is often calculated using asymmetric data (Estrada 2002) [11]. However, alternative measures of cost of capital require more comprehensive information, which is why the CAPM incorporating country risk premium is still used by many.

Then Roache, S., & Merritt, M. (2006) [12] has mentioned in their paper that the currency risk premium is more evident in North America than Europe. On the other hand, Naumoski A. (2012) [2] has researched that there is a strong relationship between the country risk and return on investments in the developing countries rather than the developed ones. Moreover, he has mentioned that defining the country risk premium for developing countries can be done with the help of the renowned credit rating agencies e.g. S&P, Moody’s, Fitch etc. He has also suggested that a researcher can forecast the country risk premium by stock or bond market volatility.

There also lies a gap between practitioner’s experience and academic theory about the risk factor in emerging markets pointed out by Walker (2016). This addresses the issue that there is only handful of research done regarding this issue. For this reason the authors of this paper have researched to find out the country risk premium of Bangladesh judging by its volatility of stock market.

III. METHODOLOGY

The authors have collected secondary data from Dhaka Stock Exchange and based their research on secondary research. All data and information has been collected from different websites and journal articles. The analysis has been done using theoretical knowledge and mathematical calculations.

IV. EMPIRICAL ANALYSIS

Comparing yields from bonds issued in a country with its default free bond yields is the most popular way to measure country risk. However, In Bangladesh, only one bond exists in the market, making it is unreasonable to calculate country risk premium in this measure.

Another effective way to measure country risk by Aswath Damodaran is

Relative standard deviation (Country X)  
= \frac{\text{Standard deviation (Country X)}}{\text{Standard deviation (US)}}

Therefore,

\text{Standard deviation (Bangladesh)} = \frac{26\%}{14\%} 
= 2.36\%

Then, the standard deviation is multiplied with premium of US stocks to find total risk premium for a country.

\text{Equity risk premium (Country X)} = \text{Risk premium (US)} [14] \times \text{Standard deviation (Country X)}

Therefore,

\text{Equity risk premium (Bangladesh)} = 3.89\% \times 2.36 = 9.19\%

Ultimately, deducting the US risk premium from total equity risk premium to find out Bangladesh’s risk premium.

\text{Country risk premium (Bangladesh)} = 9.19\% - 3.89\% = 5.30\%

With this method, we find the country risk premium to be 5.30%. This means an investor looking for investing in Bangladesh will have to bear an additional 5.30% risk along with market risk premium. Incorporating country risk premium justifies the required rate of return for an investor because a country not only has market risk but also has macroeconomic, microeconomic factors, political volatility and so on. Therefore, an investor’s required rate of return should include the inherited country risk premium for the country he is investing in.

The PRS Group has calculated country risk premium for 140 countries and the factors that they considered while rating them are as follows- budget balance as % of GDP, budget expenses ($bn), budget revenues ($bn), bureaucracy quality (L), capital investment ($bn), changes in real wages, civil war, commentary on elections, composite risk etc.[23]

The country rating, adjusted default spread, equity risk premium and country risk premium according to PRS Group of Bangladesh in comparison to similar countries are given below-

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>Aaa</td>
<td>0.00%</td>
<td>5.37%</td>
<td>0.00%</td>
</tr>
<tr>
<td>India</td>
<td>Baa2</td>
<td>2.20%</td>
<td>8.06%</td>
<td>2.69%</td>
</tr>
</tbody>
</table>
V. CONCLUSION

From this paper, the writers have found that Bangladesh is an emerging market that continuously struggles to keep pace with the competitive world, but maintains a solid position comparatively with other similar countries. Corruption exists moderately but political instability seems to be a major concern in Bangladesh. The S&P Rating for Bangladesh is BB- which indicates credit worthiness. Considering political instability and other economic factors Bangladesh has some risk when it comes to the question of investment. A rational investor takes risk of industry and market, but he unknowingly also takes country risk that solely depends on a country’s performance.

With country risk premium, one can get a better insight on how much risk an investor should take if he/she plans to invest his/her money in Bangladesh stock market. A security analyst can capture more risk and proper knowledge about the risk in Bangladesh market. This happens because previously with CAPM model he was only able to capture industry and company risk, but now he will also be considering the country risk that affects his returns from investment. The proper way of calculating CAPM of an investment is to add the country risk premium to get a true and fair value of risk.

REFERENCE


A Conceptual Model of Jute Industry Supply Chain Management

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Abstract – The research attempts to develop a model which signifies the upstream and downstream supply chain of jute industry that speculate the supply chain activities starting from raw material suppliers to the end customers. Bangladesh is one of the largest exporters of jute and jute diversified products in the world market and the quantity is increasing day by day. As a result, it has to go through a number of supply chain stages throughout this whole process. The paper seeks to answer what are the stages, who are the players and how every stage is adding value in jute and jute diversified products’ supply chain. The research is established based on primary and secondary data. The objective of this research is to improve the operations by identifying the problems on every stages of jute and jute diversified products’ supply chain. The conceptual model signifies various components of jute supply chain that could be utilized for the assistance of current administrators and prospective investors. The study also illustrates few recommendations for the betterment of jute industry.

Keywords – Jute, Jute diversified products, Supply chain model.

I. INTRODUCTION

Jute, Known as the “Golden Fiber” is one of the main sources of foreign currency earnings in Bangladesh. And Bangladesh is dominating the world jute market as a leading exporter of jute and jute diversified products [1]. Not only that, Bangladesh is the second largest raw jute or jute fiber producer in the world [1]. And the exporting quantity is increasing day by day. Currently, there is a major concern in the world. Many countries have already imposed ban on plastics, polypropylene (PP) and other synthetic products. As a result, people are now becoming more dependable on natural and eco-friendly materials. Some of these goods include yarns, ropes, twines, hessian, carpet backing, traditional packaging fabrics, sacking, mats, etc. And the diversified jute goods include shopping bags, travelling bags, ladies bags, decorative fabrics, clothing, rugs, luggage, footwear, decorative greeting cards, etc. This wide range of end products are the result of multiple operations in different stages in the supply chain. This paper attempts to establish a conceptual model of jute and jute diversified products’ supply chain of Bangladesh which illustrates every stage engaged in jute industry supply chain and the relations among them. Furthermore, this model will help to understand overall operations and find out the problem lies among them.

II. LITERATURE REVIEW

Supply chain is the process, includes upstream and downstream links of an organization, which engages those links in different methods and actions that create values in the form of products and services and delivered to the final customers [2], [7]. The basic supply chain of a manufacturing industry includes suppliers, manufacturers, distributors, retailers, customers (Fig. 1) [3], [8], [9]. On the other hand, for a service industry it starts with suppliers, service providers, customers, consumers (Fig. 2) [10], [11].

Fig. 1: The Basic Supply Chain of manufacturing industry [3].

Fig. 2: The Basic Supply Chain of service industry [10].

Ref. [4] mentioned that supply chain system of Bangladesh is not very strong. Manufacturing industries of Bangladesh are using supply chain management techniques with limited scale. Again service industries cannot use its all potential because of the inefficiencies in the service delivering processes [4]. Bangladesh jute industry is also suffering with same problems. Like the basic supply chain, jute and jute diversified products also have a supply chain which includes both upstream and downstream links. Ref. [5] showed five marketing channels of raw jute marketing which are important part of upstream supply chain of jute and jute diversified products. It also illustrated, how raw jute transfer from the farmers to the manufacturers of jute and jute diversified products or to the exporters. These channels consist of multiple intermediaries who have different characteristics and played different roles in the upstream supply chain. The channel starts with the farmers, who mainly sell their products to the farias or baparis. From farias the raw jute moves to the baparis. Baparis sell the jute to the kutcha baler or pucca baler or directly to the composite mills. Another intermediary known as “aratdars”, who basically are the commission agent, deals with both traders of raw jute as well as balers and mills.
Except this direct channel there are also some other channels of marketing by which the raw jute moves to the mills or the exporters [5]. In accordance with ref. [6] the research paper “Process Flow Chart and Factor Analysis in Production of a Jute Mills” discussed the implications that the process flow chart and the factors possessed on the jute productions in Bangladesh. A unit of production of the Akij Jute Mill was taken into account to analyze the processes and stages in jute production during this research. Moreover, it also urged that Bangladesh with her capacity has the opportunity to produce an extensive variety of products; both the raw jute and the diversified jute products, since the plea of these products in whole world is increasing gradually. These products include: raw jute, yarn, fabrics, wires and ropes etc. Another important aspect this paper exhibited that, the production procedure that the jute is indulged with is quite different from the production practices of other similar products like cotton. And the processes can be clarified respectively as follows: Selection of Jute for Batch, Piecing Up, Softening or Lubricating, Batching (Pilling), Carding, Drawing Frame, Roving for fine Yarn, Spinning Frame, Winding, Beaming, Weaving, Cutting, Folding, Sewing, Bailing, Export [6].

III. METHODOLOGY

This is an exploratory research on jute and jute diversified products’ supply chain. The model and analysis of this research is based on different primary and secondary data. The primary data collected through an experience survey, 20 respondents were interviewed who are different level of executives, employees, professionals and ex-government officers in jute industry of Bangladesh. Beside that a focus group discussions were conducted with the top level executives of “The Golden Fibre Trade Center (GFTCL)” for this research. Number of research paper from different well resound journals, online databases, digital libraries, books etc. are used as the source of secondary data.

IV. CONCEPTUAL MODEL

Based on the theoretical models and the data collected from primary and secondary sources the research establishes a conceptual model (Fig. 3) of jute and jute diversified products’ supply chain. The research divided the full supply chain into two parts the upstream supply chain and the downstream supply chain. The supply chain of jute and jute diversified goods starts with the initial suppliers of jute like lands, seeds, fertilizers, initial finance etc. This is the first stage of upstream supply chain. Then the farmers come. After getting the supplies the farmers starts the farming process. Farmers grow the raw jute and sell it to different level of intermediaries. In this part of upstream supply chain, several intermediary channels are existed by which the raw jute moves to the foreign buyers or to the composite mills. The composite mill is the last stage of upstream supply chain. However, in case the raw jute is directly exported from Bangladesh then the intermediaries are the last stage of upstream supply chain and the shipper and the foreign market are the part of downstream supply chain. In the composite jute mill the raw jute are processed through various important stages in the factory or the mill. And each of these stages add values the products and pass it to the next stages. And these stages includes spinning, weaving, cutting, dyeing, laminating, sewing etc. After processing the raw jutes into diversified jute goods they are distributed to the end consumers through traders and other customers who work as middlemen.

Fig. 3: Jute supply chain model of Bangladesh.

V. DISCUSSION OF THE MODEL

Suppliers are the first stage of upstream jute and jute diversified goods’ supply chain. For jute farming different...
types of imputes are required like lands, seeds, fertilizer, initial finance etc. sometime farmers have own land. In that case, they generally search for loans from different financial institutions or the “Mohajons”, who give loans to the farmer at a higher interest rate, and buy the seeds and the fertilizers from the local markets and start the farming processes. On the other hand farmer who do not have any lands, lend the farming fields from the land owners and run the farming processes at his own cost. And lastly the farmers share the profit with the land owner. Sometimes land owner also share some farming costs, in that case land owner take the higher portions of profit. If the farmers cannot manage the finance because of the availability or the interest, then they buy the seeds and fertilizers on credits from the local markets. Moreover farmers do not get the quality seeds and fertilizers which also leads them to the higher burdens and it discourage the towards jute farming.

After getting the supplies farmers starts the farming process. Farmers use his skills and work hard to produce the jute and sell it to the intermediaries. But they do not get the fair price from the intermediaries. There are different types of intermediaries on raw jute supply chain like farias, baparies, government purchase center, kutcha baler and pucca baler. Through them the raw jute moves to the mills or the exporters. There are be different intermediary channels existed here. The common channels are given below:

**Intermediary Channel 1:** Farmers – Farias – Baparies – Kutcha baler – Pucca baler – Raw jute exporters/ Composite mills

**Intermediary Channel 2:** Farmers – Farias – Kutcha baler – Pucca baler – Raw jute exporters/ Composite mills

**Intermediary Channel 3:** Farmers – Farias – Kutcha baler – Raw jute exporters/ Composite mills

**Intermediary Channel 4:** Farmers – Farias – Pucca baler – Raw jute exporters/ Composite mills

**Intermediary Channel 5:** Farmers – Baparies – Raw jute exporters/ Composite mills

**Intermediary Channel 6:** Farmers – government purchase centers / Private Mill agents – Raw jute exporters / Composite mills

In a standard intermediary channel, farmers sell to the farias. And farias sell to the baparies and from baparies it moves to the kutcha balers and kutcha balers sell it to the pucca baler. Lastly pucca baler process the jute and sell it to the mills or exporters. On the other hand, sometimes kutcha baler or the pucca baler directly buy from the farmers and sell it to the mills and exporters. Some exporters or mills have their one baling facilities, in that case they directly buy from the baparies at a large scale. In Bangladesh, government sets a price floor for raw jute and set up many purchase center throughout the Bangladesh so that farmers get the right price of jute. Farmers also sell directly to those purchase centers or to the agents of private mills.

Farmer cannot sell directly to the mills or the exporters because mills and exporters buy big lots at a time, it will take more time and resources which ultimately cost more if they directly collect from the farmers at a small lot. On the other hand, framers also do not get interested to directly sell to the government purchase centers or mills and the exporters because it lead them to the additional transportation cost and most of the time mills and the exporters buys the raw jute on credit. As farmers has to pay debt (of mohajons, suppliers) after harvesting, so he sell the raw jute to the farias at a very low profit but on cash. Sometime the production of jute shrinks for less rain, Hail and natural calamities. At that time they has to sell at loss to pay their debts.

Now for the concern of the downstream supply chain the conceptual model that this research has highlighted here could be tailored in different ways; if the conditions differ in the processes that are associated with this. And this is due to the fact that in many occasions some of the facilities that are essential for the production of jute diversified products from the raw jutes may absent for the composite jute mills. In that case, these works or processes requires to be done with the help of the other small factories having those facilities for which the concept of “outsourcing” becomes significant for the composite jute mills. Therefore, there could be some modifications in the proposed conceptual framework in the research.

For the composite jute mills, if all the processes as suggested model in the research emphasized are there in the mills other than few, such as the Spinning and Weaving (Fig. 4).

![Fig. 4: Outsourcing process of Spinning & Weaving](image)

Then these two processes are required to be done by the help of the outsourcing. Also there could be another situation such as the mills might need to outsource the Dyeing and Sewing facility from other companies (Fig. 5).
VI. CONCLUSION AND RECOMMENDATIONS

It can be concluded that the upstream supply chain model starts with the suppliers of jute raw materials. Then the farmers produce it and after that through the intermediaries it moves to the mills and exporters. And, downstream supply chain model of the jute industry illustrates the stages that increase the value of the raw jute to the different kinds of diversified products. And the model that is discussed in the paper basically focuses on those stages and facilities based on the primary and secondary data sources. The research found that throughout the whole supply chain, Intermediaries dominate the market most. Intermediaries not only have one channel but they have several channels to move the products from producers to the end users. Though they are cutting profits of the poor farmers, it cannot be denied that they play a very important role in the whole supply chain. They are adding values in different ways in different stages of jute and jute diversified products’ supply chain. But necessary steps should be taken to monitor and control the whole situation.

- Government should ensure adequate supply of quality seeds and fertilizers at a reasonable price by proper monitoring and coordinating various research institutions.
- Farmers do not have sufficient knowledge and technical supports. Training about the scientific way of jute cultivation will improve the whole production situations.
- In every area a farmers’ association should be formed. It will increase their bargaining power as well as give access to the big markets.
- Farmers should get easy term loan at a minimum interest rate from the private and the public banks. Government should ensure it by passing a new law.
- Govt. should continuously monitor whether the farmers get the actual price for jute which was set by the governments.

- Middle man, throughout the whole supply chain is cutting off the profit of farmers. So, more government purchase center should be established, so that farmer can directly sell the jute to the purchase center at a right price.
- The outsourced processes that the mills need to perform; can be installed in the mills so that they do not need to depend on the facilities of other factories. Because, being dependent on the other companies or factories sometimes makes it even harder for the jute mills to have orders from the different buyers of the diversified products. Besides, the buyers are always looking forward to have the upper hand on the mills and try to give orders to the mills who have all the necessary facilities. Same commendations can also be drawn to the jute bag manufacturers; most of whom also require to outsource few of their facilities from others.
- Productivity and the efficiency of the workers of these mills and bag manufacturers needs also to be scrutinized properly to get the best production of diversified jute goods. Because, from our research work we have found major discrepancies and mismatch with the production capacity of the production facilitator machines such as; the machines of: spinning, weaving and cutting etc. and the productivity of the laborers. Therefore if these workers can be trained properly then the production capacity of these machines would be achieved and will ensure the coveted outcome.
- The customers or the mass people needs to be provided with the proper understanding of the prospect of jute diversified products, the attractiveness of the products and the environmental influence of jute through useful campaigns and advertisements. So that future of jute in Bangladesh can be unleashed through their awareness about jute products.

Jute industry is one of the vast industry in Bangladesh. The primary data for this research was collected by interviewing a group of practitioners, engaged in jute and jute diversified products manufacturing and trading industry. If more companies or the whole industry is considered as a source of information then may be it could lead to better findings. In order to find the in depth scenarios of these stages in the mills; the prospective researchers should visit the farmers, intermediaries’ market and some factories to understand and experience more real views of these processes. As a result it could give further incisive results and will provide some more relevant solutions that could help the supply chain stages during their operations.
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Sustainability of Islamic and Conservation Farming to Cultivate Rice

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Abstract – This study illustrates environmental unfriendly seed, wastage of seedlings are the major challenges to produce rice resulting in natural harm and economic penalties. Islamic agriculture; a Shari’ah-based farming and Conservation agriculture; using least resources to produce crops can resolve the problems to cultivate rice. An experimental method with the Holy Qur’an; the 47th verse in the 12th chapter on natural seed and 261st verse in the 2nd chapter regarding single seedling with application of less fertilizers and irrigation have been followed to assess the results. Findings show that natural seed, single seedling and less resource usages invaluably contribute to enhancing yield, making nature happy while cost reduces to a greater extent. However, sustainability of this method is likely to encounter limitations due to the reluctance of the concerned stakeholders. So, policy-making and implementation as to Conservation agriculture by the government is required, while media must promote the fact effectively.

Keywords – Agriculture, biodiversity, conservation, cost-effectiveness, environment, Islamic farming, organic, rice, seed, single seedling, sustainability

I. INTRODUCTION

Sustainability orientation is a strategy to limit the negative impacts on the natural, cultural and social environments [1]. Since the term sustainability has entered the business world, an ever-increasing number of firms realize its importance, and emphasize the social and environmental goals of their organizations [2];[3]. Nevertheless, economic, societal, and environmental dimensions of sustainability are yet to be integrated [4];[5].

Islamic farming refers to the Shari’ah-based agriculture that follows the principles of Islam; a religion and complete code of life the Muslims believe [6], and conservation farming method attempts to accelerate consumption of the least natural resources along with boosting agricultural productivity [7]. Resource conservation technologies (RCTs) are to be followed so as to cultivate rice in an environmentally friendly way where emphasis on the Conservation agriculture around the globe is necessary [8].

As such, learning from the Holy Qur’an related to agriculture can be amended with the Conservation agricultural policy since both the farming methods aim to trigger yield exploiting precious natural resources as less as possible [6].

A. Problem background

1) Environment unfriendly seed

Rice (Oryza sativa) is used as a staple food in many countries that passes some questionable stages to produce its seed. In the conventional process, paddy is separated from ears which receive hit from hard objects that are likely to affect seed germination to some extent. Then, pesticides are blended with seeds to bypass possible pests attack. After then, specialized cooling storages are needed to store seed to keep moisture at right level so that seed germinates well when farming season starts [9].

Commercial seed storages consume electricity to keep seed moisture at the optimum level that emits carbon footprint which is one of the causing factors for global warming: a hazard for human survival. This human created danger is a threat to climate change as well. In addition, poison is blended with rice seed, and farmers are bound to start the farming process with such poisonous seed. Moreover, farmers are not able to use that seed as food (if needed) due to added poison as a dangerous health risk [10].

Most importantly, the fungus may form from the residuals of pesticides stick to seeds resulting in rice diseases at the subsequent farming stages. At large, traditional rice seed production method is not environmental friendly.

2) Massive wastage of seedling

Farmers uproot seedlings from seedbed to plant in the field. Observation shows that four to ten seedlings are planted in per cluster which seems to be an enormous misuse of seedlings; the farmers are habituated to applying unconsciously. In addition, fertilizers, irrigation and cares behind the seedlings are employed that does not make sense [11].

3) Resources misuse and environmental harm

Mass use of chemicals and pesticides decays topsoil, and increases cost of rice production [10]. Specifically, the effects of chemical use in farming lead soil to death including reduced soil nutrients and moisture leaving a significant trace on the living environment [12].

B. Aim, objectives, and research questions
This study aims to address the environmental problem of conventional rice production method to a greater extent outlining the sustainability of the Islamic and Conservation farming policy. The aim further can be split into two objectives as:

- To show environmental friendly rice cultivation method to tackle resource wastage,
- To propose measures to make Islamic and Conservation farming method sustainable.

The intended two objectives can be refined into two research questions as:

- How can Islamic and Conservation farming methods resolve the environmental problem?
- How can Islamic and Conservation rice production methods be made sustainable?

II. METHODOLOGY

This study has sourced the Qur’anic materials as the Conservation farming principles. The 47th verse in the 12th chapter has been used as a natural seed raising technique that says, ‘‘You shall leave corns in the ears, except a little of it which you may eat’’ (Qur’an, chapter 12:47). This verse relates rice farming to Conservation agriculture since it consumes the least resources.

The experiment on rice production entails that such seed produced 95% germination rate; embryo was very healthy with strong tillers. Furthermore, no electricity, pesticides, and artificial seed cold storage were required. Hence, the natural process of seed storing has saved power and carbon emission [9].

Reference [10] shows the environmental friendly seed production techniques applying an organic farming method and the Qur’anic teaching. Their results show that special cooling system necessarily was not required to keep seed moisture at the accurate level. Besides the marginal farmers, industrial agro-producers are likely to be benefitted to differentiate organic and natural rice seed from the traditional ones. Eventually, such quality rice seed can help to enhance rice production many folds.

As such, theories related to rice production holding conservation policies have been explored from the Noble Qur’an, and the Holy verses have been practiced into field. Also, an integrated communication approach has been made to ensure the sustainability of the Qur’anic and Conservation rice farming approaches.

In other words, this study has followed a mixed method that has translated heavenly knowledge into practice, and practical insights in public informing the concerned stakeholders the findings as to Islamic and Conservation rice farming for the sustainability concern.

III. RESULTS

A. Environment-friendly seed

Mature and well-ripen rice in ears as the seed has been used in the experiments following the verse “You shall leave corns in the ears, except a little of it which you may eat” (Al Qur’an, chapter 12:47). This verse relates rice farming to Conservation agriculture since it consumes the least resources.

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However, keeping rice seed in ears encounters a drawback of rat attack that was tackled naturally. Dry fish; burnt and mixed with mastered oil produces acute odor attracting cats which drive rats out of the seed storage. At the end, farmers were offered that seed for free to motivate them towards Islamic and Conservation rice farming approaches [10].

B. Single seedling to prevent seedling wastage

Reference [10] justifies the single seedling approach to produce rice incorporating indigenous variety, BRRI dhana-28 in the light of the verse that says, “As the likeness of a grain (of corn); it grows seven ears, and each ear has a hundred grains” (Al Qur’an, 2:261).

The results show that single seedling produces more tillers than the conventional seedling approach. Additionally, spikes became longer with very minimum chaff contributing to increase crops.

In 2017 and 2018 during the Boro season (January 15 - April 18), demonstrations on BRRI-29 (a local variety) applying indigenous seed varieties were carried out
following a conventional and single seedling method respectively.

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>COMPARISON BETWEEN CONSERVATIONAL AND CONVENTIONAL RICE FARMING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input and output</td>
<td>Conventional in 2017 (per acre)</td>
</tr>
<tr>
<td>Seeding</td>
<td>4-7</td>
</tr>
<tr>
<td>Irrigation</td>
<td>3-4 times weekly</td>
</tr>
<tr>
<td>Fertilizers</td>
<td>45 Kg TSP, 30 Kg Urea</td>
</tr>
<tr>
<td>Effective tillers</td>
<td>25 (highest)</td>
</tr>
<tr>
<td>Yield</td>
<td>3130 Kg</td>
</tr>
</tbody>
</table>

The study covered 8.5 acres of land of two farmers at Cholonbil at Natore district. Cholonbil is recognized as one of the hubs of rice production in Bangladesh. Therefore, this area has been under the experiment so that the results are replicated and promoted among the other farmers.

A space of 20 cm × 20 cm between row and column was maintained applying the single seedling approach according to the Qur’anic verse. Conservation techniques have resulted positive results in terms of resource savings along with ensuring higher yield. The final results indicate that, compared with 2017, Conservation policy contributed to an increase of 676 Kg rice per acre in 2018 in which the spikes and panicles resulted from the single seedling method were longer enough.

Moreover, the length of panicle and grain panicle were significant with effective tillers resulting from the single seedling [17]. Reference [18] notes the same findings regarding the significance of the length of panicle, and grain panicle affecting for higher yield in case of rice production.

Plantation of single seedling using hybrid varieties is a practice offers higher tillers and yield [19]. Furthermore, their study reports that application of single, double and triple seedling application approaches diminishingly reduce rice yield. In fact, their study concludes that the single seedling approach is the best.

It is evident that Islamic principles and Conservation agricultural approach hold almost the same findings. If the single seedling is applied in respect of hybrid or inbred cultivars, marginal farmers can save their seedling wastage marking significance to raise food stock.

C. Economic and natural care for rice plants

Reference [10] undertook an organic farming and conservation approach to growing rice applying compost, bio-fertilizers, green fertilizers, cow dung, cow urine, and processed manure of poultry in the field. For pest control, a spray of bitter tasted leaf extract, cattle urine, and sitting arrangement for birds in the field worked effectively.

Replication of single seedling and conservation notion as to using fertilizer and irrigation in 2018 by the author has shown a controlled use of factors of production in 8.5 acres of land. Per acre has saved at least four times seed cost, and 610 BDT for seedling uprooting cost compared with 2017 for the same land. Moreover, one-fourth of the fertilizer was dropped with irrigation in 2018.

In April 2018, the farmers collected roughly 26 to 27 Kg of sheaf of paddy from their own fields as seed according to the Islamic farming teaching of the verse 47 in the 12 chapter as natural seed although in 2017 and 2018 they required 120 to 150 Kg market seed. In December 15, 2018, they carried out the germination process for the farming season 2019 and germination rate of the Islamic farming–based rice seed was 95% which 13% higher than that of the conventional rice seed. On 21st of January 2019, seedling was transplanted following the single seedling method which is inevitably resource conservation approach to produce rice started in Bangladesh.

In Nepal, dung and urine of cattle are highly used as the conservation resources in farming [8]. With the natural manure and pest control effort (conservation agriculture), natural seed raising technique at home by the marginal farmers (Islamic and Conservation approaches) along with single seedling (Islamic and Conservation approaches) can gift the Earth an environmental friendly rice production manual.

D. Measures for making the findings sustainable

Farmers are highly motivated watching higher yield of rice followed by Islamic farming approach at Cholonbil, Natore, Bangladesh during the Boro season-2018. Most importantly, more farmers are being expected to apply Islamic and Conservation farming to cultivate rice at Cholon Bil, Natore in 2019. As such, continuity of Islamic and Conservation rice farming techniques are likely to be sustainable in the Muslim majority countries.

Reference [20] shows Islamic farming is under the practice in Nigeria, whereas Saudi Arabia is an advanced position in this regards. Furthermore, reference [6] suggests that proper communication of the message of the Quran relating to agriculture can enhance to trigger the sustainability of the Islamic farming.

The leaders (Imams) in the respective mosques have been communicated to motivate the communities to sustain the Islamic farming method. However, the conservation agriculture to follow the environmental friendly rice production method has been emphasized to the other stakeholders.

IV. DISCUSSION

Sustainability has been originated from “sustain” and “ability,” seeming to have come to generally mean “the capacity to maintain” [21]. Sustainability must consider economic, societal, and environmental dimensions together [22]. Therefore, the sustainability of Islamic and Conservation rice production method requires its cost-effectiveness, social acceptance by the stakeholders, and its
inclusion in the government policy with the strict safeguard measures for the environment.

Islamic and Conservation rice production methods are cost-effective. To ensure its social recognition, the findings of the Islamic and Conservation rice production method have been communicated to the marginal farmers demonstrating the rice fields. Furthermore, local government administrative officials and agricultural research bodies were informed about the two methods. In addition, local community radio and national newspapers have promoted the research findings.

Conservation agriculture keeps soil moisture in proper condition [23], that requires less fertilizer to feed the crops [24] and ensures water productivity [25]; [26]. Moreover, Conservation farming ensures savings in machinery and energy use, reduction of carbon emissions. It further reduces the impact of the apparently increased volatility in weather, and erosion associated with climate change. Production costs also drop when Conservation agricultural policy is adopted [7].

On the other hand, present agribusiness encounters challenges due to eroding environment, consuming fossil fuel, water and topsoil at unsustainable rates leading air and water pollution, soil depletion, diminishing biodiversity, and fish die-offs [27].

Furthermore, conventional agriculture accounts for economic and social costs in exchange of gaining maximum output. It ultimately impacts on insufficiency to deliver sustainable production intensification to meet future needs [28].

To resolve the environmental issues of chemical-based farming, acknowledgment of the Islamic principles into farming can make sense. The Holy Qur’an says not to put us towards destruction (2:195), since the worldly havoc is created by our own bad deeds (4:70). Consciousness on the environment as to the teachings of the Noble Qur’an can greatly help farmers follow Conservation and Islamic farming approaches that can bring a sustainable way to cultivate rice.

V. CONCLUSION

Islamic and Conservation rice farming technologies, for instance, keeping rice in ears as seed, and applying single seedling as per the 47th and the 261st verse in the 12th and 2nd chapter certainly will increase yield. The techniques will reduce rice production cost benefitting the marginal farmers’ along with making our invaluable environment healthy.

Application of cattle dung and urine with the natural approaches of pest control crucially trigger to address the environmental problems. However, the sustainability of Islamic and Conservation methods largely requires inclusion in the respective governments’ agricultural policies besides its mass promotion on print and electronic media.

Scientific communities can accelerate the sustainability of Islamic and Conservation agriculture proving some facts. First, temperature and moisture of the seed in ears can be measured discovering the reasons for its comparatively better germination rate. Importantly, natural seed followed by Islamic and Conservation method and chemical blended rice seed have to be looked at very carefully to testify whether fungus is formed or not. Second, embryos of the both seed cultivars are worth to be compared to understand the suitability of the natural seed. Third, proper dosages of cattle urine over per acre in place of conventional nitrogen can be identified.

Future studies on the above three scientific aspects can result in the sustainability of Islamic and Conservation agriculture ensuring the application of seed in ears, single seedling and urine to cultivate rice at the marginal farming level.

REFERENCES


Understanding the Factors Affecting Young Millennials’ Likeability of Television Advertisements in Bangladesh

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Abstract – This study sought to understand the factors that make young millennials to like or dislike a television advertisement. The paper analyzed respondent reactions to the launch of 4G services in Bangladesh and attempted to find out which factors ressonated with them. Interestingly, while advertisers had historically put a lot of emphasis to glamour and music when advertising to the youth the study finds that it is a good story that appeals to them the most. The generation may also prove to be a tougher customer to convince because respondents have expressed that even though they liked the advertisements they had doubts on the its truthfulness. Also, this group would not purchase a product simply because they liked the advertisement. They have to be convinced of the relevance of the product’s benefits in their lives to actually make a purchase. Additionally, social and peer group influence appears to have significant impact on their purchase decisions.

Keywords – likeability, advertisement, young millennials, 4G, Bangladesh

I. INTRODUCTION
Companies spend millions every year to produce advertisements that help them capture consumer’s hearts as well as their wallets. The spread of broadcast media in the late 80’s saw many major brands pouring a large portion of their marketing budget into TV advertisements. The 80’s and 90’s produced a lot of advertisement classics that have captured consumers’ hearts. However, the current world of advertising is a lot different from what it used to be even a decade ago. These days, a good TV advertisement is not only about creating awareness and interest about the product but must also help in building a strong connect and an enduring brand image with its customers. Much of these changes have been brought about by the emergence of social media and a change in consumption patterns. For advertisers, Gen X and Y took a back seat and the Millennials became the main focus in the last two decades. Several studies have found that this new generation is very different in terms of their product and communication preferences. They are also more dynamic about changing their likes and dislikes. Hence, it has become increasingly challenging for advertisers to churn up ad campaigns that are noticed and liked by these target customers. Hence this study aims to find the following

- Understand the different factors that attract young millennials to like one advertisement over others.
- Evaluates and rank the identified factors to pinpoint which factors are most important in contributing to likeability
- Understanding how ad likeability influences consumer behavior.

II. LITERATURE REVIEW
Most studies claim that millennials are the generation of people after generation of X and are born between early 1980s to late 1990s. They make up the world’s largest living generation. Many have speculated whether this generation can be divided into two separate sub-generations: old and young millennials. A 2018 study by the digital marketing agency mediakix find that there are marked differences in the purchase and consumption habits of the old and the young millennials largely due to contrasts in attitude towards money, outlook on life and social media habits [9].

According to a recent study conducted by the McCarthy Group, 84% of millennials stated that they not only disliked traditional marketing but also did not trust it. They preferred live streaming and video-on-demand on platforms such as Netflix over traditional television. Adweek published a study in which 57% of millennials state they are willing to view sponsored content from a brand as long as it includes authentic personalities and is entertaining and useful. Another study by Forbes finds that though Millennials in general hate Ads but 58% of them finds advertisements acceptable if they featured their favorite celebrities [1].

If we talk about an advert’s effect on the behavior of consumers, we cannot ignore the fact that advertising likeability has a crucial role to play. That is the reason why we have taken the likeability factor into account for evaluating the advertising effectiveness. There are several studies which identifies that the likeability factor has the strongest link with sales and persuasion [3], [5], [6].

One study further identifies that it is a common phenomenon for people to avoid advertisements which they do not like [2] and naturally they tend to focus more
onto the liked adverts [11] creating repeated exposure because of the first positive impression. With the help of this extra attention it is easier to get more and more consumers involved [8] which will eventually become a stimulus to affect the consumer behavior [4].

According to [10] an increased amount of positive arousal might be there due to the likeability factor which will help to improve the recall factor and as a result positive judgments will start building up towards the liked advert. Hence this positive feeling might become an aid for the viewers to encode, store and retrieve the message from the liked advertisement [12] which would increase the possibility of more recalls and increased purchase intention [7].

So while present literature emphasizes the importance of likeability there is an absence of contemporary literature on that factors that contribute to liking a particular advertisement. This study seeks to identify the factors contributing to likeability as well as find a relation between likeability and consumer behavior.

III. METHODOLOGY

In February 2018, the 4 top telecom operators moved Bangladesh from 3G to 4G internet with lot of fanfare. The young millennial generation was the main target customers for 4G and was expected to be the early adopters of this technology. Hence, these launch advertisements were selected for the study to understand what attracts the young millennials and increases their likeability of advertisements. Since all 4 advertisements were of the same service, it removes the chances of bias occurring because of different levels of interest in the services themselves. The data was collected using a semi-structured questionnaire which was given to 15 groups of 8-10 respondents each in a theatre setting. Each group was given a set of forms with the questions and filled out a few preliminary questions after which they were shown the 4 advertisements that were being evaluated. They answered a separate series of questions after viewing the advertisements. A total of 148 respondents saw the advertisements and filled out the questionnaires. 127 of these questionnaires were deemed fit for analysis after scrutiny. The researcher themselves moderated the group interviews. The data set was analyzed using SPSS 24.0. The researchers actively supervised the data input and cleansing process as well.

The questionnaire included questions about the respondents’ demographic information and their personal evaluations of the 4 launch Ads. Some of those evaluations were organized into statements and getting respondent opinions using a five point Likert scale with the answers ranging from Strongly Disagree (1) to Strongly Agree (5).

IV. RESULTS AND DISCUSSION

The participants of the study consisted of 82 men (65%) and 45 women (35%) belonging to the age range of 20 - 25 years with 25% aged between 18-21 years, 37% of the respondents being 22-23 years and 38% of the respondents aged 24-25. 75% of the respondents said that they watch television especially for sports and talk shows and most view advertisements as an interruption. 57% of the respondents state that they change channels as soon as advertisements start, others admit to finishing chores or muting the channel when advertisements begin. Only 24% say that they wait and watch the advertisement. Before the 4G advertisements were shown, the respondents were asked to recall recent advertisements they had liked and interesting all the launch advertisements came up amongst the top 10 common responses. Coca cola, Mountain Dew, Maggi Noodles and Lux were notable amongst the other advertisements mentioned.

![Figure 1 Importance of factors for evaluating an advertisement](image_url)

Respondents highlighted that an advertisement with a good story is the most important factor for them, followed by jingle, theme, visuals and duration. Only half the respondents mentioned celebrity presence as an important factor.

4G awareness
All respondents in the study were mobile phone users with 46% using Grameenphone (GP), 28% using Robi (Rb), 32% using Banglalink (BL) and about 18% using Airtel (at). 25% of the respondents use multiple operators. 100% of the audience had watched at least one of the 4G launch ads before participating in the survey. The highest awareness was for the 4G launch ad of GP

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which stood at 75%, Airtel and Robi advertisements followed with 56% and 55% respectively and Banglalink’s 4G ad was the least seen with 42% of the respondents having watched the advertisement before. 29% of the audience had seen all the 4 ads beforehand. Facebook and YouTube were the most popular source of advertisement views with 47% of the respondents saying they saw the ads there. 44% said they had watched it on TV.

40% of the respondents ranked the GP Ad as number 1, 34% ranked the BL ads as number 1, Robi and Airtel ads got ranked number 1 by 14% and 12% respectively. Majority of those who ranked GP as 1 mentioned theme/story (52%) and jingle and music (40%) and overall look of the Ad (20%) as the main reason for liking the ad so much. The same reasons were mentioned by those who ranked the other 3 operators’ advertisement as well. This indicates that the reason for liking a particular advertisement is almost homogenous and the difference lies with people’s personal tastes and attitudes.

Respondents who liked GP’s ad most commonly mentioned theme, message and jingle. Those who ranked the BL ad noted it for its high quality visuals and music. Robi was noted for theme and the presence of a popular model. Airtel had the highest response for the advertisement ranked at no. 4 and those who disliked the ad mentioned its theme and message were overly simple and frivolous. This is reflected in figure 3, when respondents were asked to rank the importance of different factors those results to them liking an advertisement.

The message/ theme, music, story and visualization came up as the most important factors in influencing likeability. Interestingly, the duration of the advertisement and the use of popular models appeared to be less important factors at this point for most of our respondents. Other than the following factors what was interesting to observe was that 72% of the respondents who ranked the GP ad as no. 1 were GP users themselves. This trend was more dominant in the case for Robi and Airtel where almost all the people who ranked their ads best were their own users. However, the BL advertisement was liked almost equally by its users and non-users. This might indicate that many of the respondents had a positive self-serving bias towards the brands that they use themselves. The importance of an appealing theme, story and music is also highlighted when asked for the factors resulting to disliking an advertisement (Figure 4).
The audience likeability is also translated into the advertisement’s success in creating interest and truthfulness. Here again GP was ranked first, followed by BL, Robi and AT respectively. However, it is interesting to observe that the top 3 operators lost some ground in perceived truthfulness with around 20% or more respondents thinking that the advertisement was interesting but not truthful. Interestingly, AT retained all the respondents in terms of both interest and truthfulness.

Even though the 4G advertisements were very well received but all 4 ads had low effectiveness in terms of consumer conversion. Only 10% actually switched to a different operator for 4G services. About one third switched to the 4G services of their existing operator but more than half the respondents did nothing because they did not believe 4G offered any incremental over 3G or simply because they did not feel 4G was necessary for them.

**Influence factors on purchase decisions**

The respondents were almost equally divided when it came to whether liking an ad influenced their purchase decisions. 48% said that they would still buy a product without liking the ad if the product was popular amongst his/her peers or the product was deemed necessary. This influence of external factors are reflected again when the respondents evaluated certain statements which highlights the influence of popular culture, social groups and approval of others. Almost 65% are influenced by popular culture when making purchase decisions and more than 50% find approval of social groups as important factor influencing their purchase decisions.
V. ANALYSIS AND RECOMMENDATIONS

Data from the interviews and following in-depth discussions suggest that for an advertisement to generate interest and likeability, it must tell a compelling story. The accompanying visuals, theme as well as music also add significant weight to likeability. Though the ads tested were well liked, they do not appear to be as effective in influencing behavior. The ineffectiveness is partially because of the failure to create a genuine need for 4G services. Advertisers can take a note of this and give emphasis to creating the feeling of need for the service by building it into a good story. Closing discussions also suggest that advertisement likeability is simply not enough to influence the current generation which takes popular culture, social media and acceptance by their social groups into consideration when making purchase decisions. The dislike for the AT advertisement and the liking for GP and BL ads indicate that messages to this generation must be subtle with stylish visuals and story. According to many respondents the AT ad was very upbeat but frivolous with its dual focus on selfies and social media usage. Though these are important parts of their data usage but they are able to do the same things with 3G services. The advertisement could not portray the incremental value of 4G. They felt the other operators’ messages were better because they told stories about breaking boundaries and enhancing capabilities. This indicates that a message that focuses on empowering them for a better future has more acceptability amongst them. Since ad likeability is only one side of the coin brands need to create social media buzz and popular acceptance to move people to buy their products.

VI. DISCUSSION

The idea of the study was to understand the factors that make an advertisement more likeable to the youth and how it influences their behavior. The findings of this study should help the advertisers to have a better understanding of their target customers’ likes and dislikes. This would enable them to create more compelling messages in their future campaigns.

VII. CONCLUSION

This study focuses on respondents in Dhaka city only. Further research can be undertaken on larger groups in Dhaka and across other regions to get a better nationwide understanding. Further studies are also necessary to generate more significant insights that will enable advertisers and brands to develop innovative strategies and path breaking campaigns.
REFERENCES


Betel Vine Cultivation in Bangladesh: An Evaluation of the Effect of Cost Factors on Return

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Paper ID: ICBM-19-0425

INTRODUCTION

The betel leaf is widely cultivated in Bangladesh. It is a creeper and it needs a compatible tree or a long pole for support. Betel requires high land and especially fertile soil. Water logged, saline and alkali soils are unsuitable for its cultivation. Treatment of cough can be done by taking 15 pieces of betel leaves are boiled in 3 cups of water to the remaining three quarters of his and then drink with honey. For the treatment of bronchitis can be done by taking seven betel leaves mixed with a single piece of rock sugar and then boiled with 2 cups of water to the remaining one cup. Drink ingredient 3x 1/3 cup. Eliminate body odor, take 2 cups of water and then add 5 betel leaves and boil until into a glass, drinking during daylight hours. If you are exposed to severe burns, fresh leaves are squeezed and then take the water, add a little honey, then dab on the spot that get burned. Nosebleed use young leaves of the sheet and then crushed, rolled with the aim of removing the oil is then used to stanch the bleeding nose. For white, use 2.5 liters of water to boil 7-10 betel leaves. Once the water gets warm and then use to wash the genitals and pubic clean repeatedly. More practical again, you can use a cleanser or soap that soap made from betel, which is now very popular soap called betel. If you have a problem with bad breath, use two to four pieces of betel leaf and brewed and then crushed and used for gargling. As for the acne, mash until smooth seven to ten betel leaves and then pour in two cups of hot water and water used to wash my face on the part of the acne. It is good done two to three times in a day. There are so many benefits of betel leaf, so many people who cultivate these plants in Bangladesh.

LITERATURE REVIEW WORKS

Q. M. S. Islam et al (2015)\footnote{Q. M. S. Islam, M. A. Matin, M. A. Rashid,M. S. Hoq And Moniruzzaman “Profitability of Betel Leaf (Piper Betle L.) Cultivation in Some Selected Sites of Bangladesh” ISSN 0258-7122, Bangladesh J. Agril. Res. 40(3): 409-420, September 2015.} prepared an important study “Profitability of betel leaf (piper betle L.) Cultivation in some selected sites of Bangladesh”. This study was conducted to assess the cultivation practices, physical productivity, profitability, and to explore the constraints
to betel leaf cultivation. The study has been designed to investigate the economics of betel leaf production considering intensive cultivated areas for recent information in Bangladesh. Grade & Galgalikar (1982)\(^2\) in their study found that the cost of establishment of betel vine bareja was maximum, followed by human labour. They have also worked out the input output ratio, which is 1:2.10. It is fairly high. Maiko Sakamoto and Masakazu Tani (2014)\(^3\) prepared an important study on “Is Betel Leaf Cultivation Widening Income Disparity in Teknaf?”. They mentioned that serious deforestation has been reported in the Teknaf peninsula of Bangladesh, and betel leaf cultivation is considered to be one of the responsible factors. Sen & Roy (1982)\(^4\) have reported that there is considerable regional disparity in betel vine production. In some regions of the country, this crop is very risky and unremunerative, so other horticultural plants are replacing this. Saniyapan & Maimu Thu (1982)\(^5\) conducted a comparative study and found that per acre cultivation expenses were high in betel vine in comparison to banana and sugarcane. They also found that per acre income in betel vine cultivation was six times higher than that of banana and sugarcane. On that basis, they suggested that the crop ‘betel vine’ is more remunerative than banana and sugarcane. Acharjee & Sen Gupta (1991)\(^6\) observed that the yield of betel leaves varied in various months of the year. It was comparatively low during the winter months than in the summer months. Cost of cultivating a hectare of betel vine during the first three years (since establishment), was Rs. 45,000. The cost benefit ratio is 1:1.85. The marketing of betel vine has been wide spread and scattered throughout the country. On this aspect also specific studies are very limited. Singh, R P (1986)\(^7\) Observed that some undesirable conditions prevail in course of marketing and affect the economy of the growers and traders. They stated some constraints, i.e. monopoly of the buyers, malpractices, inadequate transport and insufficient export promotion etc. N. S. Jane & et al (2014)\(^8\) studied on *Review of Study of Different Diseases on Betel Vine Plant and Control Measure*. They opined that the vast economic potentiality of the crop can be adequately established by the fact that about 20-30 million people consume betel leaves in India on a regular basis besides those in other countries of the world which may include over 2 billion consumers. Its cultivation is highly labor intensive and offers employment to about 2.0 million families engaged in cultivation, trading and commerce in betel leaf throughout India. Betel vine leaf is used as medicine for certain diseases and also used as an antiseptic. During cultivation betel vine is very much affected by diseases such as Leaf spot, Leaf rot diseases and powdery mildew that result in great loss for the farmers. It occurs in a very virulent form and if not controlled, causes widespread damage and even. Total destruction of the entire betel vine plantations without any early indications of the diseases.

On the above review works it can be stated that many experts are mentioned the different areas of betel leaves Production & Marketing opportunities in Bangladesh and abroad. They highlighted that betel leave is the six times benefited items than the production of banana and sugarcane. The cultivation of the art of betel-leaf as a viable and sustainable farm, lie in its management practices, a skill of the rural community of the country. If we look at the Measurement of Costs, Returns & Profit Analysis of Betel Vine Cultivation in Bangladesh, we find that production to consumption of betel leaves is much beneficial to growers to consumers. It is the golden scope for increasing the financial & economic benefit by providing the marketing of betel leaves in Bangladesh. Moreover, Bangladesh has earned foreign currency by exporting betel leaves to different countries which is more important for the study.
STATEMENT OF THE PROBLEM

According to Scientist you are not entitled to consume tobacco products but you can order a sweet paan, which is tobacco free and less addicting. Chewing Paan is an addiction to many Indians. You can find the leftover of beetle leaves on almost every place. So, peoples prefer paan rather chewing gums because of its sweet and soothing taste. Betel leaves (paan) particularly when taken along with areca nut (supari), catechu (katha) and tobacco (zarda) are to be considered as well as harmful for health. Dry nut (Supari) is masticator and used as mouth freshener that removes bad taste from mouth. It’s not only about taste, but many singers perceive it as voice-quality enhancer. Betel leaves and nut have are very important cultural value in the Asian and Oceanic countries like India, Pakistan, Bangladesh, Taiwan, Myanmar, Cambodia, Thailand and Vietnam. In India and Bangladesh often religious and marriage ceremonies are incomplete without betel leaves and nut. Sometimes tobacco is also mixed which makes this quid more harmful comparatively. When people become addicted to this type of chewing habit, it causes serious and life-threatening disorders like oral, esophageal and stomach cancer. High rates of oral cancer have been found in areas where chewing of betel quid is very common. But these plants do not always cause diseases. They are also used in the treatment of many kinds of diseases if taken in a medicinal dose. Let us take a look at some medicinal properties of these potentially dangerous plants by cultivating betel leaves for the economic development of Bangladesh. Considering the issue the study is planned.

Objectives of the Study

The study has been undertaken with the following objectives:


Methodological Issues: Two districts are selected i.e. Jhenaidah and Chuadanga like Traditional Betel leaves (Paan) growing area of Bangladesh. Betel leaves (Paan) used to cultivate century long. The two districts has become one of the top betel leaf growing areas of the country. Two villages from each district are selected due to its large scale betel vine cultivation. Villages are selected: District Area (Village)

   - Jhenaidah: Jalalpur & Kaliganj
   - Chuadanga: Joyrampur & Nilmonigang

The position of two villages from each district has been considered;

Selection of Growers: A sizeable number of growers were selected from each of the 4 villages of the two districts randomly-

- Joyrampur: 120 borages owner recorded estimated 40% selected for study;
- Nilmonigang: 105 borages owner estimated farmer’s report 50% was selected for study;
- Jalalpur: 125 borages estimated as per farmers report 50% selected for the study;
- Kaliganj: 297 borages owner estimated as per growers report 50% selected for the study.

Farmers Category: Boroj size was larger in Jhenaidah District ranged from 08 katha to 105 katha. Boroj size was comparatively smaller in Chuadanga District and ranged from 06 katha to 100 katha. Larger boroj was few in number. It was very difficult to categorize the growers according to their land class size which was ranging between 06 to 105 katha. Selection of Market Functionaries (Traders): In order to examine the price spread of producer and retailers, four paan markets from the two sampled districts are chosen, namely: Jalalpur and Kaliganj of Jhenaidah district, Joyrampur and Nilmonigang of Chuadanga district; A sample of 4 local traders, 40 retailers and 40 wholesalers from each sampled markets of both the district was selected for investigating the betel vine marketing channels within and outside the districts. In this way, a total of 40 Growers, 40 Brokers, 40 Wholesalers 40, Retailers 40 and Consumers 40 are to be interviewed for the study.

Methods of Data Collection: The marketing aspect is studied with the help of sample traders in order to obtain information about betel vine production and marketing from the sampled growers information related to input-output of cultivation, its practices, etc. are collected.

Period of the Study: The reference year of the data was 2016-2017 i.e. one year. Sources of Data & Data Collection: Both primary & secondary sources of data are collected for the study based on the published information by the upazilla & districts offices.
publications of the ministry of finance, planning commission, statistical year book, library & modern information technology i.e. internet. Quantitative data is collected through the different sets of questionnaire and qualitative data is collected from the sources of official records, operational information. Special information is arranged through personal visit from the markets of the selected areas in the selected two districts. The number of five sets of Questionnaires for five Stakeholders is to be prepared for the study. **Techniques of Analysis:** To complete the study the selected techniques are to be followed to analyze the financial information during the period 2016-2017. **Statistical Tools:** Mainly selected statistical tools & parameters (Correlation (simple, partial & multiple), Regression (simple, partial & multiple), Co-efficient of multiple correlation, P-value, T-Test for correlation co-efficient, F-Test, ANOVA & factor analysis are to be used for the study.

**Testing of Hypotheses**

**H0:** There are no positive significant correlation of perceptions among the sampled betel leaves cultivators for each of the variables i.e. human labour, Machinery, fuel, Chemical Fertilizer, Farm Yard Manure, chemical, watering, seeds, fancing, weading, harbesting, marketing with output during the study period.

<table>
<thead>
<tr>
<th>Variables</th>
<th>human labour</th>
<th>Machinery</th>
<th>fuel</th>
<th>Fertilizer</th>
<th>Farm Yard</th>
<th>Chemical</th>
<th>watering</th>
<th>seeds</th>
<th>fancing</th>
<th>weading</th>
<th>harbesting</th>
<th>marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>earning</td>
<td>0.319</td>
<td>0.219</td>
<td>0.064</td>
<td>0.216</td>
<td>0.373</td>
<td>0.146</td>
<td>0.395</td>
<td>0.156</td>
<td>0.190</td>
<td>0.169</td>
<td>0.148</td>
<td>0.398</td>
</tr>
</tbody>
</table>

**H0:** There are no significant differences of perceptions among the betel leaves cultivators regarding overall average values of the cost components of operational cost such as Construction Cost of Bareja, Land Preparation and Vine transplanting, Fertilizer Application, Pesticides Application, Irrigation Charge, Inter-culturing Operations, Harvesting of the Crop, Packing, Marketing and Maintenance. Annual Repair cost of Bareja between two sample areas during the study period.

**Table No. 1: Correlation Analysis**

<table>
<thead>
<tr>
<th>Variables</th>
<th>earning</th>
<th>bareja</th>
<th>repair</th>
<th>fertilizer</th>
<th>harvest</th>
<th>pesticides</th>
<th>irrigation</th>
<th>planting</th>
</tr>
</thead>
<tbody>
<tr>
<td>earning</td>
<td>1</td>
<td>-0.727**</td>
<td>.426**</td>
<td>.308**</td>
<td>.262**</td>
<td>.374**</td>
<td>.309**</td>
<td>.216**</td>
</tr>
<tr>
<td>bareja</td>
<td>-0.727**</td>
<td>1</td>
<td>-0.672**</td>
<td>-0.523**</td>
<td>-0.518**</td>
<td>-0.075</td>
<td>-.113</td>
<td>-.608**</td>
</tr>
<tr>
<td>repair</td>
<td>0.426**</td>
<td>-0.672**</td>
<td>1</td>
<td>.802**</td>
<td>.468**</td>
<td>.111</td>
<td>-.175**</td>
<td>.443**</td>
</tr>
<tr>
<td>fertilizer</td>
<td>0.308**</td>
<td>-0.523**</td>
<td>.802**</td>
<td>1</td>
<td>.421**</td>
<td>.203**</td>
<td>-.097</td>
<td>.372**</td>
</tr>
<tr>
<td>harvest</td>
<td>0.262**</td>
<td>-0.518**</td>
<td>.468**</td>
<td>.421**</td>
<td>1</td>
<td>-.426**</td>
<td>-.264**</td>
<td>.874**</td>
</tr>
<tr>
<td>pesticides</td>
<td>0.374**</td>
<td>-.075</td>
<td>.111</td>
<td>.203**</td>
<td>-.426**</td>
<td>1</td>
<td>.730**</td>
<td>-.586**</td>
</tr>
<tr>
<td>irrigation</td>
<td>0.309**</td>
<td>-0.113</td>
<td>-.175</td>
<td>-.097</td>
<td>-.264**</td>
<td>.730**</td>
<td>1</td>
<td>-.335**</td>
</tr>
<tr>
<td>planting</td>
<td>0.216**</td>
<td>-.608**</td>
<td>.443**</td>
<td>.372**</td>
<td>.874**</td>
<td>-.586**</td>
<td>-.335**</td>
<td>1</td>
</tr>
</tbody>
</table>

Sources: N=160; **, *. Correlation is significant at the 0.01 level & 0.05 level (2-tailed) respectively.
Table No. 1 point out the total earning (return) has positive significant correlation with each of the cost variable planting (0.216), fertilizer (0.308), pesticides (0.374), irrigation (0.309), harvesting (0.262), and repair (0.426), but negative with barija (-0.727), under review period of the study.

Table No. 2: KMO and Bartlett’s Test

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</th>
<th>0.612</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>1170.312</td>
</tr>
<tr>
<td>df</td>
<td>28</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>

Sources: Source: Calculated from Principal component analysis

The results of Kaiser-Meyer-Olkin (KMO) and Bartlett’s test of Sphericity for the selected variables are shown in Table No.2. Bartlett’s test of sphericity reveals that the approximate chi-square value is 1170.312 with 28 degrees of freedom at 0.00 levels of significance. KMO measures the adequacy of samples to examine the appropriateness of factor analysis where values between 0.5-1.0 indicate factor analysis is appropriate. Values below 0.5 imply that factor analysis may not be appropriate. KMO’s value is 0.612 indicates that the factor analysis is appropriate for this analysis.

Table No. 3: Total Variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>3.618</td>
<td>45.231</td>
</tr>
<tr>
<td>2</td>
<td>2.370</td>
<td>29.620</td>
</tr>
<tr>
<td>3</td>
<td>.974</td>
<td>12.181</td>
</tr>
<tr>
<td>4</td>
<td>.510</td>
<td>6.373</td>
</tr>
<tr>
<td>5</td>
<td>.250</td>
<td>3.127</td>
</tr>
<tr>
<td>6</td>
<td>.161</td>
<td>2.008</td>
</tr>
<tr>
<td>7</td>
<td>.075</td>
<td>.934</td>
</tr>
<tr>
<td>8</td>
<td>.042</td>
<td>.527</td>
</tr>
</tbody>
</table>

Sources: Extraction Method: Principal Component Analysis.

As per the Table No.4, we find that the total variance explain 74.85 percent for the two factors has been extracted by the principal component analysis. It indicates the selected variables depend on the two major factors. From the cumulative percentage of variance explained accounted for 74.85 percent consists of 45.23 percent and 29.62 percent respectively by the components 1 and 2 in rotation sums of squared loadings for the analysis. Hence we can reduce the number of variables included in the study within the two components as below:

Table No. 4: Rotated Component Matrix

<table>
<thead>
<tr>
<th>Items</th>
<th>Component</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction cost of Bareja</td>
<td></td>
<td>-0.903</td>
<td></td>
</tr>
<tr>
<td>Repair cost of Bareja</td>
<td></td>
<td>0.843</td>
<td></td>
</tr>
<tr>
<td>Fertilizer</td>
<td></td>
<td>0.767</td>
<td></td>
</tr>
<tr>
<td>Harvesting</td>
<td></td>
<td>0.646</td>
<td>0.946</td>
</tr>
<tr>
<td>Pesticides</td>
<td></td>
<td></td>
<td>0.813</td>
</tr>
<tr>
<td>Irrigation Charge</td>
<td></td>
<td></td>
<td>0.623</td>
</tr>
<tr>
<td>Planting</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

Table No. 4 displays the rotated component matrix. In this table, we can observe how rotation achieves simplicity of data reduction and enhances interpretability of the function of the influential variables of the study. The highest loadings of factor 1 and factor 2 are estimated as cost variables planting (0.623), fertilizer (0.767), harvesting (0.646), and repair (0.843), but negative with barija (-0.903) and irrigation (0.0813) and pesticides (0.946) respectively for the study. The basic PEST analysis includes four factors:
• Political factors are basically how the government intervenes in the economy. Specifically, political factors have areas including tax policy, labor law, environmental law, trade restrictions, tariffs, and political stability. Political factors may also include goods and services which the government aims to provide or be provided (merit goods) and those that the government does not want to be provided (demerit goods or merit bads). Furthermore, governments have a high impact on the health, education, and infrastructure of a nation.

• Economic factors include economic growth, interest rates, exchange rates, inflation rate. These factors greatly affect how businesses operate and make decisions. For example, interest rates affect a firm's cost of capital and therefore to what extent a business grows and expands. Exchange rates can affect the costs of exporting goods and the supply and price of imported goods in an economy.

• Social factors include the cultural aspects and health consciousness, population growth rate, age distribution, career attitudes and emphasis on safety. High trends in social factors affect the demand for a company's products and how that company operates. For example, the ageing population may imply a smaller and less-willing workforce (thus increasing the cost of labor). Furthermore, companies may change various management strategies to adapt to social trends caused from this (such as recruiting older workers).

• Technological factors include technological aspects like R&D activity, automation, technology incentives and the rate of technological change. These can determine barriers to entry, minimum efficient production level and influence the outsourcing decisions. Furthermore, technological shifts would affect costs, quality, and lead to innovation.

CONCLUSION

Betel Leaf has many benefits for preventing health problems and treat disease. In Chinese pharmacology, known as the betel plant that has the properties of warm and spicy. The use of betel leaves to shed fat, stop coughing, reduce inflammation and relieve itching. In India the benefits of the betel leaf is known as a warm aromatic substances, is antiseptic, and even improve passion of sex. Betel leaf cultivated in the different district of Bangladesh is also of fine quality. Betel leaves exported from Bangladesh are famous in different countries in the world. The betel leaves used not only for eating yet also been used for medical issues for the economic development of a country. In Bangladesh, betel vine is grown as an important cash crop. Betel leaves has good export potential and Bangladesh exports betel leaves to the other countries. The betel farming activities generate employment opportunities for throughout the year. Further, as far as the national employment generation is concerned, about 20 million people derive their livelihood directly or indirectly from production, processing, handling, transportation and marketing of betel leaves in Bangladesh. It is the most important cash crop. This adequately justifies its nomenclature as the “GREEN GOLD OF BANGLADESH”. A well-coordinated effort by the farmers, traders, scientists, administrators and policy makers is required to be initiated to boost up the national economy through proper exploitation of this green gold. The Government of Bangladesh should jointly take appropriate steps to improving pest management of betel farm activities, to establish a Research and Development Board; to enhance export oriented activities meeting global standards, to reduce intermediaries in marketing, to stabilize the betel prices, to increase farm cultivation and awareness among betel growers

REFERENCE


Application of Supply Chain in E-Waste Management

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Abstract – E-waste (also known as waste electrical and electronic equipment) is one of the fastest-growing waste streams worldwide. Given this rapid growth, issues related to e-waste are a grave concern. Over the recent past, the global market of electrical and electronic equipment has grown exponentially. Increasing amounts of e-waste pose detrimental effects to the environment and public health through improper recycling and disposal techniques. Such informal recycling practices are common in several developing countries, where recycling methods are rudimentary, and a considerable proportion of e-waste components ends up in unsanitary (uncontrolled) landfill and open dump sites. To address these issues, this paper aims to introduce a systematic approach to e-waste management; a process termed integrated e-waste management (IEWM) is a theoretically viable technique in which municipal solid waste and e-waste management systems are managed. This is possible because both systems share common waste fractions and treatment and disposal technologies. Therefore, integrated e-waste management represents an advance in the controlled disposal of e-waste and improvements in local environments and public health in developing countries [1]. The purpose of this paper is to provide a review of the e-waste problem and existing e-waste management models in the developed and developing countries. This paper also discusses their merits and demerits. Lastly, the authors of this paper give an idea of their upcoming research work in e-waste management.

Keywords – E-Waste, Supply Chain, Management and Reverse Logistics.

I. INTRODUCTION

E-waste (also known as waste electrical and electronic equipment) is one of the fastest-growing waste streams worldwide. Given this rapid growth, issues related to e-waste are a grave concern. Increasing amounts of e-waste pose detrimental effects to the environment and public health through improper recycling and disposal techniques [1]. Shagun, Ashwani Kush and Anupam Arora in their paper titled “Proposed Solution of e-Waste Management”, defined E-waste as discarded computers, office electronic equipment, entertainment device electronics, mobile phones, television sets and refrigerators. This definition includes used electronics which are destined for reuse, resale, salvage, recycling, or disposal [2].

Supply Chain Management involves collaboration between firms to connect suppliers, customers and other partners as a means of boosting efficiency and producing value for the end consume. Logistics is a part of the supply chain process that plans, implements and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customer’s requirements.

Since, the field of reverse supply chain management is new in the field of business logistics, the perfect analysis of the efficient implementation must be done in prior by all the electronic industries. It can be depicted that the hazardous as well as non-hazardous electronic waste is collected from various sources such as main supplier, manufacturer, retailer, and end-customer. Later, these collected wastes are processed and made to undergo necessary treatment. Finally, the recycled and reformed products are sent back to respective sources [3].
II. LITERATURE REVIEW

2.1 E-Waste Generation
Perez-Belis et al. (2015) concluded from their extensive literature review that several countries lack standardized methods for e-waste estimation. Ikhlayel (2016) examined the advantages and disadvantages of five e-waste generation estimation methods and their applicability for developing countries. The author presented a modified version of the Consumption and Use (C&U) method for estimating e-waste generation. The study by Ikhlayel (2016) estimated e-waste generation in Jordan from six appliances by applying the five methods and the modified version of the C&U methods. The study concluded that most of the compared methods provide similar estimates of the total e-waste generation but different results for estimating the amounts of e-waste from each EEE. The study also concluded that each method has to employ with careful consideration of the market conditions for each EEE.

2.2 E-Waste Flow

2.3 Informal Recycling
Informal recycling is another pressing issue in developing countries. It is often unrecognized as a part of a city's solid waste and resources management system. Fei, F., Qu, L., Wen, Z., Xue, Y. and Zhang, H. in their paper titled “How to integrate the informal recycling system into municipal solid waste management in developing countries: based on a China's case in Suzhou urban area.” studied the flow and fate of materials gathered via unauthorized recycling so that the collector might earn a small income. The authors concluded that governments should formally incorporate informal recycling into their municipal waste management system, by offering training to the recycling participants and improving the existing recycling facilities. The authors also recommended optimizing existing recycling schemes [5]. Parajuly, K., Thapa, K.B., Cinpan, C. and Wenzel, H. in their paper titled “Electronic waste and informal recycling in Kathmandu, Nepal: challenges and opportunities.” aimed to analyze the challenges and opportunities of building a sustainable e-waste management system. The study also offered propositions for resource-oriented waste management systems. The study reasoned that the participation of informal workers in the waste recycling could be attributed to the lack of resource recovery policies in the existing traditional waste management approach [6].

2.4 Impacts of E-Waste on Human Health and Environment
Ram Krishna and Ms Sampa Saha in their paper titled “Study Paper on E-waste Management”, tried to list out the effects of some of the prime hazardous components in of e-waste. Major hazardous components are: (i) Arsenic, (ii) Lead, (iii) Barium, (iv) Chromium, (v) Beryllium, (vi) Mercury, (vii) Cadmium, (viii) Brominates flame retardants - BFR, (ix) Chlorofluorocarbon - CFC, (x) Polychlorinated Biphenyl - PCB, (xi) Polyvinyl Chloride - PVC, (xii) Dioxin [7]. Shagun, Ashwani Kush and Anupam Arora in their paper titled “Proposed Solution of e-Waste Management”, tried to focus on the effects of E-waste constituent on human health and proposes some solutions for E-waste management. This study found that various sources of e-waste contains different constituents, which cause various health damages [2]. Mahdi Ikhlayel in his paper titled “An integrated approach to establish e-waste management systems for developing countries” discussed some challenging issues of e-waste management in developing countries which are (a) The quantity of e-waste generated is a major concern. This is because of the lack of infrastructure to appropriately manage e-waste. Moreover, the significance of second-hand EEE is a pressing issue because its functionality may not necessarily be verified, and its content may be hazardous. (b) In many developing countries, inventory assessment of e-waste is poor or does not exist. (c) The exportation of e-waste from developed countries to developing countries for recycling leads to a situation in which EEE products become e-waste in developing countries, which worsens e-waste management in those countries (ESDO, 2011). (d) The absence of knowledge regarding the toxic nature of e-waste. (e) Portion or components of e-waste are often mixed with Municipal Solid Waste (MSW), and both may be treated inadequately. (f) Deficient knowledge of the impacts to human health and the environment of current e-waste treatment practices. (g) Legislation to regulate and control the import and disposal of the generated e-waste do not exist in many developing countries. Such legislations, if it does exist, can diminish the hazardous nature of e-waste management in those countries.

III. EXISTING E-WASTE MANAGEMENT MODEL

3.1 Centralized Theme
When the stages of testing and evaluation are centralized as depicted in Fig.3, the cost efficiency in the reverse supply chain system can be achieved. Ultimately, the products returned are tested and evaluated at the central facility and then the credit is issued. However, the resellers or retailers do not take part in the activity of product evaluation at any cost. As a result, the shipping costs can also be reduced by shipping the processed products to the manufacturers in bulk. Once the product passes through the testing phase, it is strategically disposed in the relevant category such as scrapping, restocking, salvaging, or refurbishing. This centralized
system certainly minimizes the processing costs to the great extent.

Mahdi Ikhlayel in his paper titled “An integrated approach to establish e-waste management systems for developing countries”, presented the approach based on a review and assessment of the e-waste management system of developed and developing countries with an emphasis on Switzerland experience as shown in Fig.5. In this proposed approach it has five stages: (i) Sales, (ii) Consumption, (iii) Waste Generation, (iv) Collection and (v) Treatment and disposal. The proposed approach builds on the Extended Producer Responsibility (EPR) to achieve a reduction in e-waste amounts; reduction in e-waste disposed of; reduce hazardous constituents in the e-waste; decrease the use of virgin materials and metals; mitigate environmental pollution and enhance the design for environment.

Fig.4: Decentralized based reverse supply chain [8].

3.2 Decentralized Theme
As depicted in Fig.4, the decentralized system makes use of preponement strategy. When personal computers are taken into consideration, they tend to have higher asset value over time. For such products, it’s better to prepon the testing phase and evaluation phase. Most importantly, this methodology ensures the unused products returned are immediately restocked which was not possible in the case of centralized system. The testing phase is actually conducted at the point of return by the retailers or resellers. As a whole, it must be technically feasible and might demand expertise development from among the retailers as well as resellers. It would become important to incentivize the resellers through the shared saving contracts with the manufacturers. Additionally, the establishment of inventory process managed by vendor is highly recommended in order to deal with large retailers. It would also be better if they maintain their own technicians for testing the product returns.

3.3 Integrated E-Waste Management Approach

Fig.5: Integrated e-waste management approach [1].

3.4 Drawbacks in the Existing Proposals
Drawbacks of different e-waste management discussed earlier are mentioned below:
(i) The drawbacks found in centralized theme proposed by Mr. T. Udhayakumar, Dr. R. Krishnaraj and Dr. P. Parthasarthi are (a) There is a considerable delay in
The objectives of this study are as follows:
1. To study the existing analysis method of Reverse Logistic for Electronic Waste Handling system in the developing countries.
2. To analyze how E-waste management can meet the demands for rising environmental awareness as well as economic pressures in the city.
3. To develop a supply chain model to manage E-waste.

V. METHODOLOGY
The approach that will be followed in this study consists of four stages: (i) Data Collection, (ii) Statistical Analysis, (iii) Recommendation and (iv) Supply Chain Model Proposition.

![Fig.6: Methodology](image)

The aim of the data collection is to observe the current situation of e-waste generation. Statistical analysis will be applied to try to identify common issues regarding e-waste generation. According to the findings of the analysis and result, recommendation will be put forward to reduce e-waste generation. Finally, a proposal of a supply chain model to handle e-waste will be suggested.

VI. CONCLUSION
Changes in lifestyle of people, technological development and low-cost availability of electronic gadgets have led to increased consumption rates of electronic products. Consequently, the global quantities of e-waste are on an upward trend across the globe. Due to high generation of e-waste and the lack of proper managing systems for this type of waste in the city, it is predicted that such waste would have some adverse effects on the health of citizens and the environment as well. Therefore, it is necessary to provide necessary infrastructures for separation, collection, recycling, and management of such waste.

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Tobacco Taxes in Bangladesh: Challenges and Opportunities

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Abstract – Bangladesh is one of the largest tobacco consuming countries in the world. Bangladesh has developed a complex multi-tiered ad valorem tobacco tax system. There are large variation in taxes and prices among different tobacco products. Compared with many developing countries, tobacco prices and taxes are much lower in Bangladesh. Large gaps in tobacco products have created opportunities for switching to cheaper brands in response to increased taxes. Over the years, the affordability of tobacco products has increased significantly. SLT products have emerged as the growing concern for public health and also hold the potential for enhanced revenue mobilization. The contribution of the paper is that based on evidence, it attempts to analyze the major challenges of the current tobacco tax system for effective tax policy for Bangladesh.

I. INTRODUCTION

With 37.8 million (35.3%) adults consuming tobacco products, Bangladesh is one of the largest tobacco consuming countries in the world [1]. Tobacco consumption in Bangladesh varies by gender. The smoking prevalence is far higher among males (36.2%) than females (0.8%), while the use of SLT products is much higher among females (24.8%) than males (16.2%) [1]. However, Bangladesh has achieved remarkable achievement in the reduction of tobacco consumption from 43.3% of adults in 2009 to 35.3% in 2017. The prevalence of tobacco products in both rural and urban areas declined substantially over the period. Although the consumption of biri declined substantially from 11.2% of adults in 2009 to 5.0% in 2017, the consumption of cigarettes remained almost static over the years (from 14.2% of adults in 2009 to 14.0% in 2017) [1]. The prevalence of smokeless tobacco (SLT) products declined marginally among women from 27.9% of adults in 2009 to 24.86% in 2017. Data on households from the Household Income and Expenditure Survey (HIES), 2016 of the Bangladesh Bureau of Statistics (BBS) also confirm the high rates of tobacco consumption (both smoked and smokeless) in Bangladesh [2]. Empirical evidence from regional countries shows that the prevalence of smoking any products is higher when compared with that of some regional countries [3]. The prevalence of SLT products is alarming because Bangladesh ranks the second (next to India) in 34 high SLT burden countries [4]. The high rates of tobacco consumption in Bangladesh impose an increasing health and economic burden on the country. Approximately, a quarter of all deaths among men aged 25-69 in Bangladesh are attributable to smoking [5]. The overall economic cost of tobacco was estimated at Taka 110 billion (US$1.85 billion) or over 3 per cent of gross domestic product (GDP) [6].

The WHO Framework Convention on Tobacco Control (FCTC) is the only global treaty for regulating tobacco control in the world. It may be noted that Bangladesh was the first country to sign it (June 2003) and then ratify it (June 2004). WHO FCTC emphasises on the strategies contained in the MPOWER measures: Monitoring tobacco use and prevention policies; Protecting people from tobacco smoke; Offering help to quit tobacco use; Warning about the dangers of tobacco; Enforcing bans on tobacco advertising, promotion and sponsorship; and Raising taxes on tobacco product. Article 6 of the WHO FCTC stipulates that price and tax measures are effective and important means of reducing tobacco consumption by various segments of the population, particularly young persons. Available evidence suggests that price increases on tobacco products are effective in reducing demand; a 10% price increase on a pack of cigarettes would be expected to reduce demand for cigarettes by about 4% in high-income countries and by about 5% in low- and middle-income countries [7]. Higher prices also prevent initiation of tobacco use among youth as children and adolescents are more sensitive to price increases than adults.

The motivations for government intervention in tobacco control through increasing tobacco taxes are as follows. Firstly, a fundamental principle related to the efficiency of taxation is to prefer taxes that generate substantial revenue with relatively little loss of welfare arising from higher prices caused by such taxes [8]. The Ramsey Rule [9] states that tax rates should be inversely related to the price-elasticity of demand for products (holding the price-elasticity of supply constant). Thus, goods like tobacco products with relatively inelastic demand should be taxed heavily. Secondly, as tobacco use creates negative externality to the society, there is a need for government intervention by imposing corrective taxes (Pigovian taxes). Thirdly, the government should take initiative to address other market failures like the oligopolistic nature of the cigarette market, limited
information of users regarding the deleterious effects of using tobacco products.

With the above background in mind, this paper aims at presenting major issues of tobacco taxation in Bangladesh and come up with certain implementable recommendations. The remainder of the paper is organized as follows: Section 2 gives an overview of the methodology of the study. The current tobacco tax structure in Bangladesh is discussed in Section 3. Major issues of tobacco taxes are discussed in Section 4. Section 5 focuses on taxing SLT products. Section 6 concludes the paper with certain challenges of tobacco taxation and come up with implementable recommendations for addressing the challenges.

II. METHODOLOGY

We have conducted desk review and collated and consolidated the findings and recommendations of policy documents, research reports, journal articles and other relevant materials to understand the current tax structure, tax rates, challenges of existing tax system and best practices worldwide. Primary data generated through the Tobacco Tax Research and Dissemination (TTRD) Project of BIGD, Brac University have also been used. The secondary data on tobacco tax, health surcharge, sale and revenue have been collected from the National Board of Revenue (NBR) for the period of 2006-07- 2016/17. We have also collected data on tobacco consumption by type of tobacco products (cigarettes, biri and SLT) from secondary sources including Global Adult Tobacco Surveys (GATS), 2009 and 2017, Bangladesh Demographic and Health Survey (BDHS) 2014, Household Income and Expenditure Survey, 2016 , Statistical Yearbooks of Bangladesh and annual reports of the NBR.

III. TAX STRUCTURE OF TOBACCO PRODUCTS

Tobacco tax structure matters because the structuring of tobacco taxes has implications on how increased taxes lead to reduced tobacco use and higher revenue. Bangladesh has developed a complex tax structure of cigarettes with the following characterizations:

- Administered retail prices of four price tiers of cigarettes;
- A complex multi-tiered ad valorem excise tax (value-added tax (VAT) and supplementary duty (SD));
- Large variations in tax bases and tax rates, between cigarette brands (taxed under four tiers);
- A standard VAT of 15% of retail price imposed on the cigarettes of all brands;
- A health development surcharge (HDS) of 1% of retail price; and
- A surcharge of 2.5% is imposed on cigarette company’s income.

The segment-wise market shares of the three major players in the cigarette market clearly depict the sheer dominance of the British American Tobacco Bangladesh (BATB) in all four segments. Since 2007, Dhaka Tobacco Industries (DTI) has marketed Marlboro – a Philip Morris International (PMI)’s brand under an agreement with PMI in the premium segment of the cigarette market. In August 2018, Japan Tobacco, one of the largest tobacco manufacturing companies of the world, signed an agreement with the DTI to acquire it for a deal worth $1.47 billion. This takeover is expected to change the supply dynamics of the overall cigarette industry in Bangladesh. Abul Khair Tobacco Limited (AKTL), the third largest tobacco company of the country, operates only in the low segment with the brand name Marise. These three companies account for more than 98 percent of the entire cigarette market. Since FY 2014-15, the BATB has dominated in all segments of cigarettes. The segment-wise market share of cigarettes sold from FY 2006-07 to FY 2017-18 is shown in Figure 1.

Figure 1: Segment-wise market share of cigarettes sold in Bangladesh, FY 2006-07 to FY 2017-18

Biri is divided into filtered biri and non-filtered biri. The government introduced a maximum retail price (MRP) replacing tariff value since FY 2017-18. The MRP of filtered biri increased from Taka 12 per 20 sticks in FY 2017-18 to Taka 15 per 20 sticks in FY 2018-19 with SD remaining unchanged. On the other hand, the MRP and taxes of non-filtered biri remained unchanged during the period with MRP at 12.50 per 25 sticks and SD at the rate of 30%. So, we find variation in prices and taxes between the two brands of biri.

According to the WHO FCTC, SLT is a tobacco that is consumed in un-burnt form, either orally or nasally. SLT products were historically not taxed in Bangladesh because they were treated as cottage industries. However, in June 2003, the government took SLT out of
the purview of cottage industries through a government order (S. R. O # 168 dated 12 June 2003 of the NBR). In FY 2003-04, the government brought SLT under the tobacco control mechanism with the imposition of 15% VAT on zarda (chewing tobacco) and gul (tooth powder), which are the most common forms of SLT products in the country. A 10% SD on the ex-factory price of zarda and gul was also introduced in FY 2009-10. The current retail price per 10 gram of zarda is Taka 12 with 100% SD, while the retail price of gul is Taka 6 per 10 gram with 100% SD. However, it is to be noted that, the government has changed the tax base of SLT products by replacing ex-factory price with tariff value in FY 2018-19.

There are large variations in prices and tax rates among the three major products (Table 1).

### Table 1: Tobacco tax structure in Bangladesh, FY 2018-19

<table>
<thead>
<tr>
<th>Tobacco Products</th>
<th>Category</th>
<th>Tax base</th>
<th>Price (Taka)</th>
<th>VAT</th>
<th>SD (%)</th>
<th>HDS (%)</th>
<th>TTI (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarette (10 sticks)</td>
<td>Low</td>
<td>Retail price</td>
<td>35</td>
<td>15</td>
<td>55</td>
<td>1</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td></td>
<td>48</td>
<td>15</td>
<td>65</td>
<td>1</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td></td>
<td>75</td>
<td>15</td>
<td>65</td>
<td>1</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Premium</td>
<td></td>
<td>105</td>
<td>15</td>
<td>65</td>
<td>1</td>
<td>83</td>
</tr>
<tr>
<td>Biri (Sticks)</td>
<td>Without filter (25 sticks)</td>
<td>Retail price</td>
<td>12.5</td>
<td>15</td>
<td>30</td>
<td>1</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>With filter (20 sticks)</td>
<td></td>
<td>15</td>
<td>15</td>
<td>35</td>
<td>1</td>
<td>51</td>
</tr>
<tr>
<td>Smokeless (Pouch of 10 gram)</td>
<td>Zarda</td>
<td>Tariff value</td>
<td>12</td>
<td>15</td>
<td>100</td>
<td>1</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>Gul</td>
<td></td>
<td>6</td>
<td>15</td>
<td>100</td>
<td>1</td>
<td>116</td>
</tr>
</tbody>
</table>

Source: NBR data

4. Major Issues in Tobacco Taxation in Bangladesh

#### 4.1 Tobacco taxes and prices

From the analysis of data, we observe a number of trends in tobacco products. Tax bases (maximum retail price) of all tobacco products are low when compared with those of several neighboring countries. The prices for the most widely sold brands are expressed in international purchasing power parity U. S. dollars. Tobacco prices and taxes in Bangladesh and selected countries are given in Table 2 [10].

### Table 2: Tobacco prices and taxes, Bangladesh and selected countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Cigarette</th>
<th>Biri</th>
<th>Smokeless</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Price</td>
<td>Price</td>
<td>Price</td>
</tr>
<tr>
<td></td>
<td>Tariff, % of retail price</td>
<td>Tariff, % of retail price</td>
<td>Tariff, % of retail price</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>5.4%</td>
<td>77%</td>
<td>5.5%</td>
</tr>
<tr>
<td>India</td>
<td>9.3%</td>
<td>43%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>19.4%</td>
<td>62%</td>
<td>24%</td>
</tr>
<tr>
<td>Nepal</td>
<td>6.7%</td>
<td>36%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Malawi</td>
<td>5.7%</td>
<td>43%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Thailand</td>
<td>7.1%</td>
<td>34%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>2.2%</td>
<td>80%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3.2%</td>
<td>80%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Source: WHO 2015b, 2017

If we analyze the cheapest and the most expensive brands of cigarettes in Bangladesh vis-à-vis neighboring countries, we find that cigarettes are cheaper in Bangladesh. The prices of the cigarettes (both the cheapest and the most expensive brands) 20-cigarette per pack in dollars in Bangladesh vis-à-vis several neighboring countries are shown in Figure 2 [11].

### Figure 2: Price of 20-cigarette per pack in dollars (at purchasing power parity), 2016

Source: WHO, 2017

#### 4.2 Product substitution

Large price gaps between brands create opportunities for consumers to switch to cheaper brands in response to increased taxes ([12]). They also create opportunities for tax avoidance and tax evasion. In Bangladesh, the differential tax treatment has led to product substitution from the medium tier to the low tier of cigarette. The market share of the low tier increased from about 25% in FY 2006-07 to about 71% in FY 2016-17. On the other hand, the market share of the medium tier declined from about 52% in FY 2006-07 to about 16% in FY 2016-17 (Figure 3).

### Figure 3: Market shares of medium and low tiers of cigarettes (%)

Source: Based on NBR data

Looking at the revenue shares of the two tiers of cigarettes, it is observed that the revenue share of the low tier increased from 8% in FY 2006-07 to about 53% in FY 2016-17. However, the revenue share of the medium tier declined from 45% in FY 2006-07 to about 16% in FY 2016-17 (Figure 4).
The decrease in smoking rate from 23.0% in 2009 to 18% in 2017 is reflected largely in the reduction of biri smoking from 11.2% in 2009 to 5.0% in 2017 (GATS, 2017). The tax-paid sale of biri was 51.19 billion sticks in FY 2012-13. By FY 2016-17, tax-paid sales of biri decreased by 26.7% in four years to the level of 37.53 billion sticks. An insignificant part of this decrease (14%) can be explained by the biri price increase over this period. The residual 86% decrease can be attributed to structural decline in biri demand due to shifting composition of smoked tobacco products in Bangladesh from biri to cigarettes, and other unobservable random disturbances [13].

### 4.3 Affordability of tobacco products

Tobacco products are becoming increasingly affordable in Bangladesh. The following trends are observed in the affordability of tobacco products in Bangladesh from 2009 to 2015 [14].

1. The affordability of cigarettes increased overall and across all types of brands.
2. The affordability of biri increased.
3. There was no change in the affordability of SLT.

The trends in the affordability of tobacco products in Bangladesh are displayed in Figure 5.

#### 4.4 Tobacco taxation and government revenue

In FY 2017-18, tobacco products contributed Taka 22,866.91 crore (about US$2.74 billion) as taxes, which is about 11 per cent of the NBR revenue and more than 1% of GDP. The revenue share of cigarette is 96.10 per cent while those of biri and SLT products are 3.68 per cent and 0.22 per cent respectively (Figure 6).
4.5 Taxing SLT products

The study underscores the need for enhancing taxes on SLT products due to several reasons. In the first place, the prevalence of SLT in Bangladesh is one of the highest in the world. Secondly, the impact of SLT products on its users is formidable in terms of health, economic, social, environmental and demographic impact [15]. Thirdly, the Household Income and Expenditure Survey (HIES), 2016 of the Bangladesh Bureau of Statistics (BBS) shows that on average, the consumption of SLT products accounts for the largest share, 1.4 per cent of the total household budget. Fourthly, it holds the potential for increasing the tax revenue of the government as the revenue share of SLT products is only 0.22 per cent in the tobacco tax revenue. Fifthly, the problem with the SLT taxation is the lack of database and hence lack of legal enforcement and monitoring.

According to the Global Adult Tobacco Survey 2017 (GATS 2017), 20.6% (22.0 million) of adult people use SLT, of whom 16.2% are men and 24.8% are women in Bangladesh. A large number of SLT manufacturing units are spread all over Bangladesh and they produce different kinds of SLT products including Sadapata, Zarda, Gul, Khoiniee, Nasshi and Kimam. The heterogeneity in SLT also creates the problem in taxing SLT.

A comparison of SLT use among world’s most populous countries shows that though prevalence of SLT use in Bangladesh is lower than in India, the prevalence is much higher than USA and Indonesia for both boys and girls (Figure 8).

Among the SLT users, the majority (74%) used zarda while 14% used gul (Figure 9). The TTRD survey findings are consistent with Global Adult Tobacco Survey (GATS), 2017 which suggests that zarda and gul as the most popular SLT products. Among the SLT users, two-thirds (66.3%) of the respondents use zarda, one third (33.5%) use sadapata and a little less than one in five (17.4%) use gul (GATS, 2009). Another study found that 87% of current consumers among rural Bangladeshi married women use either sadapata or zarda [17].

A case study highlights how Kaus Mia, a manufacturer of Zarda, has made his fortune by manufacturing Zarda.

Kaus Mia, the Zarda Mughal

- Kaus Mia was born in a village under Chandpur district in 1931. He got himself admitted in a school in 1936 and studied up to class eight. He is now 87 years old. He started his business in 1950 with Taka 80 (US$ 24) as capital which he took from his mother.
- Kaus Mia has been on the list of the highest taxpayers nine times and has received a long time taxpayer award from the National Board.
of Revenue (NBR). He has now different business enterprises, including the manufacturing of Hakimpuri Zarda.

- Kaus Mia initially set up a stationary shop at Purana Bazar in Chandpur town at a monthly rent at only Taka 3 (US$1) in 1951. He started the tobacco business in 1955. After initial success of the business, he moved to Narayanganj wrapping up his 20 years business in Chandpur and commenced the Zarda business in the name and style of Shantipuri Zarda with 3-4 workers.

- He left Narayanganj in 1978 and started the business as Hakimpuri Zarda in 1978. He set up the factory on a 3.5 katha (7 decimals) plot of land at Agha Nawab Dewri, Chawk Bazar, Dhaka and it has 4 floors. At present 20-21 workers are employed on a regular payroll, but sometimes he hires temporary workers too.

- Along with tobacco business, Kaus Mia is now the sole agent of 18 companies. He said that he was paying tax since 1958. According to the NBR data, he paid total taxes (both income tax and VAT & SD) to the NBR amounting to Taka 12.90 crore (US$ 1.66 million) in FY 2013-14. In FY 2017-18, he paid total taxes to the tune of Taka 49.47 crore (US$ 5.90 million), which is about 3.5 times of what he paid in FY 2013-14.

Source: TTRD Qualitative Research, 2018

Looking at the HIES 2016 data, we observe that consumption patterns vary across consumption deciles (from the poorest 10 per cent of households to the richest 10 per cent). The shares of the poorest decile in consuming SLT products and their budget share on SLT products are much larger than the richest decile. The shares of households consuming tobacco and their budget shares on tobacco products are shown in Figure 10 [18].

The growing consumption of cigarettes and SLT products underscores the need for significant increases in prices and taxes for achieving the dual objectives of

V. CHALLENGES OF TOBACCO TAXATION

- There is an increasing trend in the affordability of tobacco products because of low prices and taxes in Bangladesh.

- Adopting a pragmatic tobacco taxation policy will bring a balance between the two priority areas of the government - protecting public health and revenue mobilization from tobacco products (about 11% of the NBR revenue).

- SLT is an area of growing concern for public health and holds the potential for revenue mobilization. However, lack of data on SLT products makes the enforcement of law and monitoring difficult.

- There exists a conflict of interest among policymakers and government officials pertaining to tobacco tax which seriously impedes sound tobacco tax policy. The government has more than 10% share in BTAB and several high level government officials hold the positions in the BATB. Some Members of the Parliament have stake in biri manufacturing as well.

- There are concerns about unemployment and the opportunities of alternative livelihoods for tobacco cultivators and workers.

- National Board of Revenue (NBR) is too weak to enforce law effectively due to the shortage of trained manpower, modern equipment and tracking system.

VI. CONCLUSION AND RECOMMENDATIONS

Source: Based on HIES 2016 (cited in Carmen, Fuchs and Genoni, 2018)
protecting public health and enhancing revenue mobilization. The study makes contribution by presenting evidence based challenges of current tobacco tax system for effective tax policymaking. Some recommendations are given below:

- The increases in prices and taxes of tobacco products must outpace the real income growth of consumers.

- The multi-tied tax system needs to be phased out. Specific taxes may be imposed in lieu of ad valorem taxes.

- There is an immediate need for creating a database of all tobacco products for enforcement of law.

- The increased revenue to be collected from increased taxes may be earmarked to support the tobacco farmers and workers for building capacity for income generation. The example of Palli Karma Shahayak Foundation (Rural Employment Assistance Foundation) of Bangladesh may be followed for the transition to alternative livelihood of tobacco farmers and workers.

- Strong advocacy programs need to be undertaken by Bloomberg Initiative (BI) partners, civil society, NGOs and media to convince the government to address the conflict of interest in tobacco taxation.

- NBR may be strengthened by adopting the following measures:
  - Redefining its status and regulatory powers;
  - Restructuring it and its field formations by function and type;
  - Adopting an integrated revenue management program (business process and digitalization);
  - Developing a strategic communication and taxpayer outreach and education program;
  - Developing human resources and institutional capacity of the NBR; and
  - Activating Tobacco Tax Cell at the NBR.

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Ensuring Quality of Higher Education in Tertiary Level: An Inferential Study on Private Universities of Bangladesh

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Abstract – Nowadays quality of higher education is a debatable issue in Bangladesh. The purpose of this study is to find out several policies that may ensure quality of higher education in private universities of Bangladesh. Primary data have been collected from two main stakeholders of higher education- teachers and students of private universities with a sample size of 399. A close-ended questionnaire has been constructed by using five point Likert scale. Inferential statistics have been used for analyzing the data where factor analysis has been used to identify the potential policies for quality of higher education and regression analysis has been used to show the significant relationship among the identified policies and quality of higher education. The findings of this study may help to overcome the problems of private universities. This study also suggests some policies to ensure the quality of higher education in private universities of Bangladesh.

Keywords – Private universities, quality education, teaching-learning system.

I. INTRODUCTION

Education for all and assurance of quality education are the prime objectives of the Government of the People’s Republic of Bangladesh [1]. As defined by UNESCO [2], “A renewal of higher education is essential for the whole society to be able to face up to the challenges of the twenty-first century and to ensure its intellectual independence. Quality higher education needs to be restored to create and advance knowledge, educate and train responsible, enlightened citizens and qualified specialists, without whom no nation can progress economically, socially, culturally or politically.” Education intends to promote such values and improve people’s capacity that sustains environment and development issues of any countries. Education helps to create awareness, welfare attitudes, skills and behavior as well as a sense of ethical responsibilities among the people. Education has different levels such as primary, secondary, higher secondary and university education. Among these, university or higher education is one of the fastest growing parts of the education system. In these contexts, higher education should be standard, welfare and sustainable development oriented. One of the key aims of higher education is to anticipate the needs of the economy and prepare highly skilled workers to make it competitive [3]. It is generally agreed by academicians, education thinkers, education researchers, education policy planners and other stakeholders that the quality of higher education in Bangladesh has been deteriorating steadily, in some areas quite alarmingly, over the last two decades [4]. As such the reasons for declining the quality of higher education need to be evaluated and addressed properly. The cost of higher education in a developing country like Bangladesh is cheaper compared to developed nations [5]. But quality is more important than cost. Adequate budgetary provision and proper utilization of the same are essential to ensure the excellence in higher education. Higher education has enormous potential to promote prosperity in the developing nations. [6]

II. OBJECTIVES OF THE STUDY

The broad objective of this research is to find out the relationship between quality of higher education and most important factors to determine significance level of the variables for tertiary education in general for private universities. The specific objectives of this paper are

1. To find out the major factors to ensure the quality in higher education of private universities.
2. To measure the effectiveness of each quality factors of higher education, and
3. To recommend some policies to ensure the quality in higher education of private universities.

III. REVIEW OF LITERATURE

Many national and international researches have been conducted on quality of higher education. The researchers have reviewed some of them. According to World Bank (2007), a broad range of factors affect quality in tertiary institutions including their vision and goals, the talent and expertise of the teaching staff, admission and assessment standards, the teaching and learning environment, the employability of its graduates (relevance to the labor market), the quality of the library and laboratories, management effectiveness, governance and leadership [7]. Gibbs &
Zopaitis (2009) researched two different provision of quality for higher education: the student and teaching staff perceptions. The student evaluated quality in terms of the courses, programs, teaching and learning of the higher education institutions. The teaching staff evaluated the quality on the basis of teaching and learning facilities and student examination and assessment topicality [8]. According to the Higher Education Quality Council (HEQC, 1995), in order to produce high quality graduates all degree program should include the aspects listed below: Teaching should be research-informed so that the students may become research-aware; Students should be encouraged to develop self-motivating study habits and skills. There should be an emphasis on the development of a critical and analytical approach to the theories and concepts learned; Students should grasp the impermanence and open-ended character of a discipline’s share of, and contribution to, knowledge and understanding; Program should be provided to equip students with the necessary skills to join professional practice, including both intellectual and practical skills [9].

One of the most clearly defined sets of dimensions of quality for HEIs has been identified by Harvey and Knight (1996), who argue that quality can be broken down into five different but related dimensions: Quality as exceptional (for example, high standards); Quality as consistency (for example, zero defects); Quality as fitness for purpose (fitting customer specifications); Quality as value for money (as efficiency and effectiveness); Quality as transformative (an ongoing process that includes empowerment to take action and enhancement of customer satisfaction) [10].

For the first time in 2006, University Grant Commission (UGC) of Bangladesh prepared a 20 year long strategic planning for higher education with the help of World Bank. Till today, there is no legal body except a weak supervision, like reporting to government, of UGC, Bangladesh, to ensure the quality of higher education in private universities as the private universities do not receive any fund from the UGC [11], [12]. Andaleeb (2003) focused nine critical factors to revitalize quality of higher education. Factors are; teacher quality, method and content, peer quality, direct facilities, indirect facilities, administrative efficacy, political climate, gender effects and expected satisfaction with higher education [13].

Mobassern and Muhammed, (2010) researched that Government funding for higher education and research is not at all adequate and UGC fails to provide fund according to the need of the public universities [14]. According to Chaudhary, Iqbal, and Gillani (2009), there is a long run relationship between economic growth and higher education [15]. Better understanding among teachers and students, introduction of modern teaching methods and dedication of teachers and students can improve the quality of higher education in Bangladesh [14].

Rony and Rashid, (2009) found that the quality of education depends on quality classroom teaching. Standard of quality teaching depends on: (1) clear tasks/aims; (2) competence of the teacher; (3) use of suitable teaching methods; (4) meaningful outcome of teaching; (5) effective presentation of scientific knowledge; (6) teacher’s self-assessment [16]. Rahman emphasized that teachers should be evaluated on the basis of his teaching quality, research and publication. Politicization and favoritism of employment, posting, and promotion must be stopped. Quality and quality be the only criterion [17].

From the review of available related literature, it is clear that few researchers have used the factor analysis to determine most important factors that affect the quality of higher education. A small number of researchers showed some affecting factors of quality of higher education but they did not show that how much percentage of individual factors is significantly affecting the quality of higher education of private universities. After that no researchers showed linear regression model. In this research paper a linear regression model has been used to show the relationship between quality of higher education and most important factors to determine significance level of the variables for tertiary education in private universities of Bangladesh. Thus there is a research gap and as such this study has been planned.

IV. METHODOLOGY OF THE STUDY

The research methods are described under following sub-heads:

a) Research Design and Approach: The paper adopted with an inferential research design has been conducted in Bangladesh carried out from October and November 2018. A qualitative approach and quantitative data analysis technique were used to analyze quality of higher education in tertiary level of private universities of Bangladesh.

b) Sampling and sample size: There are around 100 private universities in Bangladesh. The researchers divided the universities into two categories. The first category is high ranking universities. According to University Grand Commission (UGC) the top ranking universities in 2018 are Brac University, North South University Bangladesh, Daffodil International University, American International University Bangladesh, Alternatives, Ahsanullah University of Science and Technology, International Islamic University Chittagong, and East West University Bangladesh. The rest of the universities belong the second category. Researchers have been collected the primary data from both categories universities, Asian
The researchers have run linear regression model between quality of higher education and most important factors to determine significance level of the variables for tertiary education in general for private universities.

The regression model is:

\[ QHE = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon \]

Here

\[ QHE = \text{Quality of higher education} \]

\[ \alpha = \text{Constant} \]

\[ X_1 = \text{factor 1} \]

\[ X_2 = \text{factor 2} \]

\[ X_3 = \text{factor 3} \]

\[ X_4 = \text{factor 4} \]

\[ X_5 = \text{factor 5} \]

\[ X_6 = \text{factor 6} \]

\[ X_7 = \text{factor 7} \]

\[ \epsilon = \text{Error term} \]

V. DATA ANALYSIS AND RESULTS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Total variance explained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>34.39%</td>
</tr>
<tr>
<td>2.</td>
<td>6.03%</td>
</tr>
<tr>
<td>3.</td>
<td>4.23%</td>
</tr>
<tr>
<td>4.</td>
<td>3.64%</td>
</tr>
<tr>
<td>5.</td>
<td>3.54%</td>
</tr>
</tbody>
</table>

c) Data Collection Techniques: A close-ended questionnaire has been constructed by using five point Likert scale. Inferential statistics have been used for analyzing the data where factor analysis has been used to identify the potential policies for quality of higher education and regression analysis has been used to show the significant relationship among the identified policies and quality of higher education.

d) Tools and Techniques for Data Analysis: Collected data processed with the help of SPSS (20.0 version) and the data will be measured with numerical value against each item of the instrument by 5 point Likert scale ranging from 5 (Strongly agree) to 1 (strongly disagree). The statement based data will be analyzed by reliability test, sample sufficiency test, factor analysis, and correlation & regression analysis test for investigating quality of higher education in tertiary level of private universities of Bangladesh. The researchers have used the quality of higher education as the dependent variable and 35 variables as the determinants independent variables. The researchers have run a factor analysis to determine most important factor that combined from 35 variables. After that the researchers have run linear regression model between quality of higher education and most important factors to determine significance level of the variables for tertiary education in general for private universities.
.......and sports facilities, interactive and supportive teaching learning system and class size should be optimum. 3.28%

6. According to respondents the assessment system will be reviewed at regular intervals.

7. In this study lesson plans/course outlines will be provided to the students in advance. 3.04%

Model Summary

<table>
<thead>
<tr>
<th>Mode</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.999*</td>
<td>.997</td>
<td>.997</td>
<td>.02773</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), REGR factor score 7 for analysis 1, REGR factor score 6 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

Comment: In the model summary, the R-square tells us the “goodness of fit” of the model. Multiple regression analysis shows that identified factors explain or represent about 99.9% of the dependent variable. This means that identified factors are highly important and have significant influences on quality education in the private universities of Bangladesh. The researchers can see from the value of adjusted $R^2 = 0.997$ that independent variables can explain 99.7% of the variability of our dependent variable.

ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>116.41</td>
<td>7</td>
<td>16.630</td>
<td>21629.17</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>.299</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>116.71</td>
<td>389</td>
<td>.001</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: DV
b. Predictors: (Constant), REGR factor score 7 for analysis 1, REGR factor score 6 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

Comment: Anova shows that identified factors are significantly related to the dependent variable. This means that identified factors or policies are significantly related to the quality education in the private university of Bangladesh.

The F-ratio in the ANOVA tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly to predict the dependent variable at 5% level of significance, $F(7, 389) = 21629.177, p < .05$ (i.e., the regression model is a good fit of the data).

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardize Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>4.221</td>
<td>.001</td>
<td>3033.387</td>
<td>.000</td>
</tr>
<tr>
<td>REGR factor score 1 for analysis 1</td>
<td>.295</td>
<td>.001</td>
<td>.544</td>
<td>212.014</td>
</tr>
<tr>
<td>REGR factor score 2 for analysis 1</td>
<td>.218</td>
<td>.001</td>
<td>.401</td>
<td>156.146</td>
</tr>
<tr>
<td>REGR factor score 3 for analysis 1</td>
<td>.212</td>
<td>.001</td>
<td>.391</td>
<td>152.160</td>
</tr>
<tr>
<td>REGR factor score 4 for analysis 1</td>
<td>.206</td>
<td>.001</td>
<td>.380</td>
<td>147.986</td>
</tr>
<tr>
<td>REGR factor score 5 for analysis 1</td>
<td>.215</td>
<td>.001</td>
<td>.395</td>
<td>153.950</td>
</tr>
<tr>
<td>REGR factor score 6 for analysis 1</td>
<td>.139</td>
<td>.001</td>
<td>.256</td>
<td>99.696</td>
</tr>
<tr>
<td>REGR factor score 7 for analysis 1</td>
<td>.081</td>
<td>.001</td>
<td>.149</td>
<td>58.141</td>
</tr>
</tbody>
</table>

a. Dependent Variable: DV

Comment: Unstandardized coefficients indicate how much the dependent variable varies with an independent variable, when all other independent variables are held constant. First policy of this study represents or influences 29.5% of quality education. After that, Second and third policies represent 21.8% and 21.2% consequently. Then, fourth and fifth policies represent 20.6% and 21.5% consequently. At last 13.9% and 8.1% are represented by sixth and seventh policies consequently.

Regression model is... Quality of Higher Education = 4.221+ 0.295 policy 1+0.218 policy 2+0.212 policy 3+0.206 policy 4+0.215 policy 5+0.139 policy 6+0.081 policy 7.

VI. DISCUSSION

Through this research the researchers try to find out the relationship between quality of higher education and most important factors to determine significance level of the variables for tertiary education in general for private universities. For this purpose, the researchers have been collected 399 samples from some private universities of Bangladesh.

According to respondents recruitment and promotional policy should be fair for academic and non academic staffs that prevail to enhance their professional knowledge, academic and non academic staff should have opportunities to take part in skill development programs and university should provide sufficient research facilities to teachers and students for smooth running their research.

In this study the researchers found that the University should have specific vision, mission and objectives and review its policy and procedures, academic decisions and
assessment systems should be fair and transparent so that student will get immediate feedback.

Respondents said that teaching and assessment strategy should be clearly stated in the curriculum, curriculum load should be optimum and admission procedure should be quit fair.

According to survey data website and modern devices should be updated to improve teaching learning process, results to be published timely and formative and summative assessment system should be duly communicated to the students.

The present study show that the university should have library and e-library with sufficient reading materials, indoor and outdoor medical and sports facilities, interactive and supportive teaching learning system and class size should be optimum.

According to respondents the assessment system will be reviewed at regular intervals.

In this study lesson plans/course outlines will be provided to the students in advance.

VII. RECOMMENDATION

1. Recruitment and promotional policy should be fair for academic and non-academic staffs that prevail to enhance their professional knowledge, academic and non-academic staff should have opportunities to take part in skill development programs and university should provide sufficient research facilities to teachers and students for smooth running their research.

2. Lesson plans/course outlines will be organized by subject and grade level. Within each lesson plan, student can find clear objectives, description of materials needed, a through procedure with and opening and closing, as well as assessments and modification. It should be committed to encourage conceptual understanding and life ling learning.

3. The assessment systems should be fair and transparent so that student will get immediate feedback.

4. Curriculum will be reviewed and updated at regular intervals in compliance with the rules of the universities.

5. Teaching and assessment strategy should be clearly stated in the curriculum, curriculum load should be optimum and admission procedure should be quit fair.

6. Website and modern devices should be updated to improve teaching learning process, and formative and summative assessment system should be duly communicated to the students.

7. The university should have library and e-library with sufficient reading materials.

8. The university should have indoor and outdoor medical and sports facilities, interactive and supportive teaching learning system and optimum (35-40 students) class size.

VIII. CONCLUSION

Higher education is considered a very significant area for any country's socio, political and economic development. In this research the researchers try to find out the relationship between quality of higher education and most important factors to determine significance level of the variables for tertiary education in general for private universities. But there are some limitations of this research. The researchers have used teachers and students as respondents. Other stakeholders of private universities are avoided. Shortage of time and money are also limitation factors.

The higher education of Bangladesh has the absence of long-term vision, incomplete education commissions and policies, traditional teaching methods, inadequate library and laboratory facilities. There is a need to introduce proper policy in order to minimize the problems that are prevailing in the higher education system. For this, it is required to the joint efforts of the government, civil society and university authority in collaboratively.

There is a limited research university in Bangladesh. Universities in Bangladesh are basically teaching universities. At this stage one of the means to achieve ‘quality education’ is through ‘quality teaching’ in order to ensure it meets the expectations of students and the requirements of employers, both today and for the future. This can be achieved through continuous upgrading in pedagogy, use of technologies, assessment models aligned with student-centered learning, creating of innovative learning platforms and also assessing impacts and documenting effectiveness of the teaching delivered.

REFERENCES


Halal Management: Translating Its Principles into Branding

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Paper ID: ICBM-19-0457

Abstract – Halal management refers to the Shari’ah compliant management, and it can be followed to branding to grab the US$2.3 trillion market targeting more than 25% of the world Muslims. A qualitative approach has guided in this study with empirical evidence cementing the selected Qur’anic verses to specify the branding procedure. As such, halal management requires positioning Islamic view whereas sign, symbol, and logo or a combination known as brand elements must be management’s own creation. Then, implementation of the planned business activities needs a careful endeavor galvanizing Islamic principles, events and occasions so that the brand is recognized as Islamic and halal. Finally, measuring brand equity, and growth must be ensured by extending product lines incorporating Islamic principles. However, findings show that halal management principles are mixed with haram branding process in some businesses. Therefore, halal management practitioners and academics need to translate Islamic principles to shape halal branding paradigm.

Keywords – Branding, consumer behavior, halal, Islamic branding, Islamic marketing, management, marketing.

I. INTRODUCTION

Branding refers to endowing products and services with the power of a brand; a brand translates name, sign, and symbol of combination of all to separate products from the competitors [1]. Branding requires simplification of four steps consisting of brand positioning, brand name selection, brand sponsorship, and brand development [2]. Reference [3] adds that strategic brand management process including identification and establishment of brand positioning and values; planning and implementation brand marketing program; measurement and interpretation of brand performance and: growing and sustaining brand equity. Halal gives a general meaning of permissible as per the teachings of Islam [4]. Halal is a phenomenon derived from the Arabic word (خال) originated from the Noble Qur’an; the book of guidance for mankind, and a complete code of life the Muslims believe, known as “Deen”. In chapter 3:19, the Nobel Qur’an says, “Truly, the Deen (religion) with Allah is Islam” (إِنَّ الدِّينَ عِندَ ٱللََّهِ ٱلإِسْلَامُ) and chapter 42:13 notes, “You should establish Deen (Islam)” (وَأَحَلَّ ٱللَّهُ ٱلْبَيْعَ وَحَرَّمَ ٱلرِّبَ). As Islam is a religion, management aspiring to cope with halal must have in-depth knowledge on Deen, Shari’ah, Islam and Halal before the go to the halal brand management.

The Muslims use “Deen”, which is much more than religion [5], submitting their will to God (Allah in Arabic) taking Islam as a code of conduct; a way of passing life chosen by Allah [6]. In the Nobel Qur’an, Deen, Islam, and Shari’ah are the three Arabic terms used for the same meaning. As such, halal management must comply with Shari’ah or Islam. Consequently, halal management should be interchanged with the Islamic management or the Shari’ah-based management. The Nobel Scripture mentions in chapter 2: 275 that “Allah has made trade halal and usury haram” (وَأَحَلَّ ٱللَّهُ ٱلْبَيْعَ وَحَرَّمَ ٱلرِّبَ). Since no direct verse regarding halal management persists in the Holy Qur’an, Islamic academics and halal centric businessmen have to borrow the essential managerial principles researching the verse related to halal trade. Necessarily, Islamic marketers need to apply the Shari’ah guidelines as managerial principles to branding- a core part in marketing.

A. Problem statement

Islamic marketing has emerged as a challenger to the traditional marketing [7]. Application of the Shari’ah guidelines with the existing marketing practices is known as Islamic marketing that satisfies the unique needs of the Muslims [8], with a halal focus [9];[10]. In addition to this, Islamic marketing must play the role of a panacea to address numerous social problems resulted from the side effect of the conventional marketing [11]. Islamic marketing, however, requires the knowledge on the Qur’anic verses, deeds and documented words of the prophet Muhammad (May Allah bless him), and findings of the conventional marketing [12]. Furthermore, an insight on Islamic culture connected to business management is a must [13]. The other principles include specialist knowledge in marketing discipline, working knowledge on codes of conduct, convention, and rules of Islam; and capability to recognize homogenous Muslim segments [14]. Muslim consumers constitute one-fourth of the global population [7] who are likely to form as much as 30% by 2025 [15]. Such diversified Muslim segments cannot be served with the traditional marketing tools [8]. Moreover, halal industry has stepped in the mainstream market [4], which is worth currently at US$2.3 trillion [16] that can be targeted with a unique halal branding managerial principles.

Islamic branding is a new and separate discipline to both the academics and practitioners [6]. Three phenomena: country of origin, target market and halal are
the center to Islamic brand [12]. Reference [18] notes Islamic branding as a Shari’ah- compliant branding approach. In addition, reference [6] points out ten principles as to halal branding including positive assertion by the organization through the brand; the nature of the product or service offering; country of origin; destination of the brand; the faith of the corporate owner(s); halal ingredient certification; the share of Muslim- and Muslim/Islam-friendly consumer base; the share of Muslim employees; positive citation of Muslim-friendly consumer with employee policies/practices; and Islamic or Islam-inspired symbolism and messages. However, Halal, Islam and Muslims will always cause brand academics and practitioners problem [6]. What is intensified to the bonding between marketers and Muslims is the fact that many brand theories have been developed in isolation form [19]. Locating this gap, this work intends to outline the simplification of the Islamic branding process translating the Shari’ah or halal management principles.

B. Literature review

Islamic marketing theory paves way of specifying four layers consisting of organic Islamic, marketing constructs, arguments and other traditional propositions [30]. However, conventional marketing is based on a theory browsed from other disciplines [33], and such borrowing tendency from other subjects have affected in shifting efforts away from theory development [32]. Therefore, reference [30] holds suggestions to source the required propositions in Islamic marketing theory from Islam. Impact of the Islamic perspective is dominant on the education theories [34] while product consumption is documented exploring directly from the Qur’an [35]. Reference [36] puts the Islamic macro marketing concept outlining that conventional macro marketing is worth to be extended to encompass Islamic principles to facilitate more societal beneficial outcomes whereas the theory of halal [31] notes halal specification must be the prime concern in Islamic marketing.

II. METHODOLOGY

Qualitative research possesses field observations and analysis of texts seeking depth rather than breadth [20] not finding data to prove or disprove the hypothesis [21] conveying its workings in its phenomenological integrity [20]. Moreover, concepts are very much important in qualitative research [22]. Qualitative approach sees the contexts as important based on its milieu [23]. This study has followed a qualitative research approach outlining the brand management process. So, qualitative Qur’anic verses have been underpinned to illustrate how the Islamic branding may look like. Reference [24] notes that the Qur’anic guidelines are qualitative and prescriptive where reference [25] assures to explore guidance from the Holy Qur’an on marketing principles that will not be a problem at all. However, reference [26] emphasizes to maintain a balance between marketing and Islamic knowledge.

Empirical evidences on halal and Islamic branding as the secondary data have been analyzed whereas prime focus has been deployed to shape the halal branding process. Selected verses of the Noble Qur’an have been linked to specify the branding procedure as the halal management principles. Importantly, conventional brand management process by reference [1], [2], and [3], have been followed in this work linking the Islamic teaching.

III. RESULTS

A. Brand positioning and values

Positioning means occupying distinctiveness in customers’ share of mind [1] resulting in a difference compared with the competitors. Reference [4] suggests that the Muslim world has to be galvanized as ‘brand Islam’. Therefore, positioning elements must result from halal considering the Qur’anic verse, “‘Allah has made trade halal and usury haram’” (chapter 2: 275).

The Qur’an, authentic sayings and deeds of Muhammad (May Allah bless him) and his closest companions must be the guiding principles of halal [4]. The belief of the Muslims is centered according to the messages of their religious texts that nurture and construct cultural values and norms [5]. As such, Islamic and halal notion must be the positioning of the halal branding process. Following Islamic branding concept, the product should be made halal; price must be set interest or usury free; promotion has to be designed truly avoiding cultural pollution not showing the private organs of the male and female models; and place or distribution is to be arranged in a justified manner [11]; [8]. Such a four unique Islamic Ps in marketing mixes can position a distinctive place in the customers’ mind.

Furthermore, the other three Ps; people, process and physical evidence in service branding can be positioned strategically. Service providers’ appearance and dress code (hijab for the female, cloth above toe and beard for the male employees, in particular) must be Islamic that will generate positive positioning in customers’ mind. Also, process should include strict halal certification. Finally, physical evidence has to be designed associating with the messages of the Holy Qur’an and hadiths, and images of the Qibla and mosques, for instance, in the working place.

Halal management cannot but enact halal marketing mixes in designing the branding process. Also, linking the relevance of Shari’ah, a distinctive place in customers’ mind as positioning ought to be ensured, because the Muslims picture Shari’ah in their hearts.

B. Planning and implementing brand elements and marketing program

Halal management should lay out planning and implementation phase to brand its products exploring the Shari’ah principles. The Holy Qur’an outlines in the 54th
verse of the 3rd chapter that, “Allah planned, and Allah is the best planner”.

Islamic brand manager needs to study the Muslim culture deeply in planning brand name, sign, symbol, logo or combination. Using a direct mentioning from the Holy Qur’an and documented hadiths might create copyright problem. ‘Halal’ for restaurant; ‘Shefa’ for medicine; Ajka for food; and Ajoa for date, for instance, will certainly be problematic since other marketers are entitled to pick up the same brand elements because the names are from the Shari’ah sources.

Elements of the Shari’ah compliance are for all, but not private property to be patented as intellectual property. Therefore, conventional brand element selection strategies will work provided that Islamic cultures are respected. Arabic text halal (حصل) must be placed in the center of the brand elements. In addition, concerned verses of the Holy Qur’an and documented hadiths have to be mentioned for developing trust and brand loyalty.

At the time of implementing the brand elements into practice, halal management cannot help following the 59th verse of chapter 2 and chapter 33, respectively. 

O you who believe, obey Allah and obey the Messenger and those of you who are in authority."

This verse should work as the focal point for halal management principles in terms of organizing, ordering, obeying, and controlling. Brand managers will motivate the concerned marketing team members to work in pursuing a halal brand keeping the teaching of that verse always in mind. In fact, marketing mix development and its implementation to construct a halal brand will have to be lined up with the Noble Qur’an, Sunnah, leader, and followers.

C. Sponsorship, measurement and interpretation of branding

Halal management principles can be explored through the 42nd verse of the 2nd chapter of the Glorious Qur’an to sponsor, measure and interpret brand performances. It says, “And mix not the truth with falsehood”.

Furthermore, the truth should be communicated effectively and easily as per the 83rd verse and 70th verse of the chapter 2 and chapter 33 respectively. Execution of brand development programs involving Islamic events and occasions in sponsorship forms is the key success factor to create brand equity. Different religious events like Islamic question-answer session inviting the prominent Muslim scholars, arranging Islamic public talk, recitation competition of the Holy Qur’an, memorizing competition of the Noble Qur’an can strengthen the brand of the halal products.

Various occasions, for instance, Eid-ul-Fitr, Eid-ul-Adha, the holy pilgrimage, the holy Ramadan, Ashura can be exploited to popularize the intended brand. Furthermore, significance of 12 Arabic months and good deeds based on those months can be prioritized among the Muslim consumers to create brand loyalty to the Islamic products.

In addition to those, every Friday is an opportunity to grab the religious consumers to develop their brand trust undertaking special program by the halal brand managers.

Islamic brand development programs will create consumers’ trust while sponsorship in other regular conventional events and occasions through integrated communication mixes will generate brand awareness. However, brand manager must look very carefully to cover the events provided that those programs are not questionable to Islamic principles. In particular, using the celebrities and models show their private organs which often pollute the Muslim culture.

Brand performance needs to be measured and interpreted in terms of sales volume and perceptions towards the Islamic product at the end. As halal management refers to a belief-centered management, belief in Allah and Shari’ah will synthesis hereafter benefits besides the economic one. The words of Allah note, “If you help Allah (in promoting Islamic messages), Allah will help you” (بِيَانِ ٱلَّذِينَ آمَنُواْ إِنَّ ۚ ۚ ۚ تَنصُرُواْ ٱللَََّّ يَنصُرُكُمْ تَحْمِلُواْ ٱللَََّّ ۖ عَلَى ۖ ۗ ۚ وَمَكَرَ ٱللََُّّ وَٱللََُّّ خَيْرُ ٱلْمَاكِرِينَ)

Halal management must measure the afterlife benefits of the halal branding management. As such, sponsorship for halal branding process generates dual benefits for management generating profit here and afterlife benefit hereafter.

D. Development, growth and sustainability of brand equity

Finally, brand equity has to be created through developing, growing and sustaining brand devising brand and product line extension strategies [1];[2];[3] leveraging halal and Shari’ah point of views. This can be attained segmenting total market into halal and Islamic brand community.

Non-Muslims also prefer halal whereas Islamic view is valued by the Muslims. Overall, a separate strategy for the non-Muslims and Muslims focusing halal and Islamic dimension is able to ensure the development, growth and sustainability of the halal branding process designed by the halal management.

IV. DISCUSSION

A. Halal management principles

Monotheism or oneness (Tawheed in Arabic), obedience (Iteba in Arabic), and afterlife belief (Akhirat in Arabic) ought to be the 3 key principles of halal management to nurture the Islamic and halal branding process. Halal and Islamic marketing mixes can be leveraged with the halal management process to branding that will produce worldly economic profit here and welfare hereafter for the halal-based managers.

A vertical relationship between the Creator and humans is meant oneness of Islam [27]. Islam always justifies business as a worship act [5] as per the 275th verse of the 2nd chapter of the Nobel Qur’an.

So, halal management should consider branding practices as an intrinsic motivation, and an inseparable part of the worship to Allah (God in English) resulting in success in their afterlife. Hence, they cannot but comply
with Shari’ah since value shall be added to their afterlife they believe.

Regardless of the halal marketing practices by the non-Muslims, Islamic marketers must position them as a moderate personality; not being an extremist. Reference [14] rightly concludes that Islam as a belief system that balances liberalist and conservative views in which variances in opinion is normal.

Muslim marketers consider Islamic marketing as a part of Deen which grounds in the oneness of Allah (Tawheed in Arabic) and obedience to Allah and His Messenger (Eteaad in Arabic). Muslim marketers surely can match their conviction in conventional management provided that it is Mobah (Neither a good deed nor a sinful act as per Shari’ah).

If any amendment of traditional management principles is proved as a sinful act then the Holy Qur’an warns about that noting, “Avoid any sinful act whether it is explicit or implicit, those who will commit any sinful deed, punishment will be accelerated” (2:276).

Consequently, halal managers have to be just in accepting any traditional conviction considering the Qur’anic verse 2:143 that “Thus we have made you a Wasat Umrah (just nation) that you be the witness over mankind” (وتذكر جعلناكم موسأemenاء وأنت من أهالي السما). People feeling doubt as to halal should ask the experts having deeper Islamic knowledge. The Nobel Qur’an says in verse 43 of chapter 16 and verse 7 in chapter 21 that, “So ask of those who know the Scripture if you know not” and “So ask the people of the Reminder if you do not know” (فأشاروا علّم الذين كنتم لا تعلمون).

Members of Shari’ah board must verify the halal management process where the mass people can rely on as per the teaching of the 59th verse in chapter 4. In particular, non-Muslim marketers’ halal management practices must be verified by the Shari’ah board.

B. Evidence of halal management principles to branding

Ingredient branding by which authenticity and heritage are evaluated since halal-conscious consumers are risk averse producing discerning and high-involvement buying behavior. Therefore, Islamic branding and halal branding are the current classification where the first one is explicitly suited for the Muslim segments and halal branding can be developed for or by the non-Muslims [6]. Furthermore, halal and Islamic brands collectively and independently encourage worship and present a promise to consumers [19].

Sensing the consumers’ mindset, non-Muslim marketer like KFC follows halal branding process in Bangladesh simply ensuring the authenticity of the production process. Pran, a multinational company originated in Bangladesh focuses halal sign in Arabic in the packaging of their food products.

Additionally, few Shari’ah-based banks in Bangladesh emphasize Islamic views investing in the halal product portfolios. They also have Shari’ah board to look at the business activities making sure that banking is Shari’ah compliant.

When they further undertake brand development campaign sponsoring Islamic programs on Friday, it promotes Islam along with the brand. This refers to the pure halal management in which product and management are halal and Islamic.

However, some conventional banks dealing with interest (usury) are observed to arrange Islamic programs. Although it is partly halal management, the Muslim scholars and consumers are embarrassed causing destruction of their brand image. As a result, halal management must combine halal products and Islamic principles to leverage its brand equity.

Branding and halal possess challenges of being halal and Islamic. Similarly, Cobra Zero beer is halal, but not Islamic in the classical sense; Mecca Bingo and Mecca USA (clothing company) carry a holy Islamic place, but it does not translate an Islamic identity. Virgin Megastore in Jeddah, Saudi Arabia (KSA), along with a Virgin Cafe ‘in the same mall, provides a halal environment for consumers adapting its logo into Arabic [17].

Nevertheless, mixing non-Islamic music, the halal environment has become questionable. Emirates Airline also uses Islamic calligraphy and Arabic symbols catering for a Muslim audience. Yet, they serve alcohol to their guests; and enforcing a uniform “half-a-hijab” for their female cabin crews [6].

Some of the cases, it is evident that halal (positive or truth) is mixed with haram (negative or falsehood) in the ongoing business practices though those practitioners do not claim that they are Islamic.

Yet, for the halal management concern, the principles should be amended in accordance with the 42nd verse of the 2nd chapter of the Noble Quran that says, “And mix not truth with falsehood” (وَلَا تَطَأُبْ النَّصِيرَ بِأَلْبَايْنَ). In addition, halal management must consider all the inputs fully from the Shari’ah sources as per the 208th verse of the 2nd chapter that indicates, “O you who believe, enter perfectly in Islam” (إِنَّمَا يَا أَيُّهَا ٱلَّذِينَ آمَنُواْ إِنَّمَا ٱلْخَيْرُ لِلَّذِينَ يَعْمَلُونَ ٱلسَّبِيلَ).
known as brand elements must be created by management itself. Third, implementation of the planned business activities needs a careful and combined endeavor galvanizing Islamic principles, events and occasions so that the brand is recognized as Islamic and halal. Lastly, measuring brand equity and branding growth have to be ensured through extending product line translating Islamic principles.

Lack of sufficient academic literature, empirical data, and conceptual argument is a key challenge for halal [6]. Therefore, halal management practitioners and academics must bridge the gaps developing theory as to the branding process. Most importantly, a separate and neutral monitoring authority constituting Islamic scholars, academicians and corporate people is a must to certify the halal management.

REFERENCES


Organizational Citizenship Behavior in Public and Private Commercial Banks: Antecedents and Precedence Relationship

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Abstract – The organizational citizenship behavior (OCB) is one of the latest widely cited constructs of positive affectivity of the human side of the enterprise. Due to the wider scholastic supports of OCB for promoting the effective functioning of the organization, this study empirically verifies the OCB construct in commercial banks. The Alpha value of the study is 0.966, therefore, the study is considered to be highly reliable. The one-way ANOVA indicates that both public and private banks do not significantly divericate in the seven dimensions of OCB. The regression results indicate that employee motivation and organizational commitment is a good predictor of OCB and job satisfaction shows insignificance association on OCB prediction. The study also asserts OCB and organizational effectiveness relationship. The study deduces to review and recognize the psychological contract of employee wellbeing. The study also prescribes the job satisfaction needs to move up for better realization of citizenship behavior for securing organizational effectiveness of commercial banks in Bangladesh.

Keywords – Commercial Bank, Employee Motivation, Job Satisfaction, OCB, Organizational Commitment

I. INTRODUCTION

Organizational citizenship behavior (OCB) describes as an employee’s voluntary contribution towards the organization ahead the assigned tasks or duties. OCB has been studied since the late 1970s. Over the several decades, the scholastic interest on OCB has increased substantially. Organizational citizenship behavior has been linked to overall organizational effectiveness, employees’ positive mental state and a variety of positive consequences in the workplace.

OCB is differing from formal structural role behaviors of employees within the organization. These discretionary informal types’ behaviors have been termed pro-social behavior [1], extra-role behavior [2], a behavior that exceeds routine expectations [3], good soldier syndrome [4], silent behaviors [5], extra mile in work [6] and citizenship behavior [7].

A person’s degree of organizational citizenship is the extent to which his or her functional behavior makes wellbeing to the organization [8]. Employees who exhibit citizenship behaviors dedicated and have a high performance ratings [9]. People are motivated to engage in citizenship behavior, not only do they help out someone else or the organization, but it also makes one feel good to perform OCBS for inner mental satisfaction [10].

The presence of OCB has been advocated for the increased organizational effectiveness [13]. OCB has been observed to encompass those behaviors which lubricate the social machinery and construct the psychological fabric of an organization. Organizations get benefit from dedicated employees for minimizing turnover rate, fostering productivity, promoting better work environment, which in turn generate greater employee dedication, satisfaction & commitment, and help the organization in many other ways [11]. OCB might enhance productivity of coworkers’ or supervisors’, help coordinate activities, increase the stability of organizational performance, and help the organization attract and retain the best employees [12]. OCB allows an employee to be sympatric to colleagues, fair deal with competitors, fair dealing with supplier, serving customers, society and other key organizational constituents.

OCB may improve performance to attract and retain the best people ever been found. Many of the best candidates and employee enjoy in the workplace due to OCB, that fosters morale of others. OCB enhances group cohesion, better social environment at work and strengthen the sense of belongingness that attract and retain best organizational participants.

OCB promotes innovative thinking, creativity at work, better quality of service, fair dealing with different stakeholder by motivated, satisfied and dedicated employees. The customer becomes better served, shareholder becomes profitable, colleagues become helping hand, employees become positive referers, and society becomes satisfied by the quality of product and service because of employees citizenship behavior.

OCB helps to maximize the organizational performance in today’s competitive environment [13]. Citizenship behavior promotes the efficiency and productivity of the employee and the organization that ultimately contribute to the effective functioning of the organization. The main goal of all organizations is promote citizenship behavior for well-functioning organization. Therefore, todays managers are proactive to understand how various factors contribute to promote OCB [17].

Commercial banks in Bangladesh is one of the optimistic, moreover leading sectors of the economy. The path of development progress of Bangladesh is become possible
due to the effort, energy, devotion, commitment, and citizenship behavior of employees of both public and private commercial banks in Bangladesh. On the basis of the relative importance of employees positive affectivities (PAs) and organizational productivity, this study is designed to empirically verify OCBs constructs in commercial banks in Bangladesh. For better understanding inter-linkages of OCB and other work-related affectivities/attitudes in the form of antecedents and precedence relationship of OCB have been verified in this study.

II. REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

A. COMPONENTS OF ORGANIZATIONAL CITIZENSHIP BEHAVIOR

There are considerable attempts are undertaken to find out dimensions of OCB, in spite of these extensive review of literature on OCB indicate a diverse pinpoint about the dimensions of OCB. In an attempt to find out dimensions of OCB first time in OCB literature, Smith, Organ, & Near [16] identified two factors: altruism and generalized compliance. Following on from these efforts, Organ [17] proposed five OCB dimensions: altruism, conscientiousness, courtesy, civic virtue, and sportsmanship.

Podsakoff, MacKenzie, Paine, & Bachrach [13] have identified 30 potentially different forms of citizenship behavior, due to conceptual overlap between the constructs. They organized them into seven common themes or dimensions of organizational citizenship behavior: (1) Helping Behavior, (2) Sportsmanship, (3) Organizational Loyalty, (4) Organizational Compliance, (5) Individual Initiative, (6) Civic Virtue, and (7) Self Development.

Helping Behavior: Helping Behavior is a discretionary behaviors that help an individual with an organizationally relevant task or problem. The individual is voluntarily helping others or preventing the occurrence of work-related problems. Helping behavior includes creating healthy and cheerful atmosphere at workplace, listening to co-workers problems and providing solutions, trying to improve working conditions, volunteering to take additional tasks, spreading goodwill in the organization, giving constructive suggestions for improvement, being enthusiastic about job and about co-workers welfare, taking initiative for new assignments, helping new employees adjust in new working environment, protecting organizational resources [15].

Sportsmanship: Sportsmanship is a witness of willingness to tolerate minor and temporary work related embarrassment and enactment of work without grievances, complaints, appeals, accusations, or protest, thus reserving organizational energies for task performance and lightening the loads of managers [32]. It is a positive attitude concerned with putting extra effort on the job, taking feedback from coworkers and superiors, opposing favoritism in the organization and encouraging near and dear to patronize organization.

Organizational Loyalty: Organizational loyalty is an individual’s identification and adherence to organizational. Organizational loyalty includes defending the organization against threats; contributing to procure good reputation; and cooperating with others to serve the interests of the whole [16]. Organizational loyalty entails promoting the organization to outsiders, protecting and defending it against external threats, and remaining committed to it even under untoward conditions [13].

Organizational Compliance: Organizational compliance is an orientation toward organizational structure, job descriptions, and HRM policies that recognizes and accepts the necessity and desirability of a rational structure of rules and regulations. The organizational compliance may be demonstrated by a respect for rules and instructions, punctuality in attendance and task completion, and stewardship of organizational resources [14].

Individual Initiative: Individual initiative is the individual performance of specific tasks above and beyond the call of duty. This is a pattern of behavior going well beyond minimal required levels of attendance, punctuality, housekeeping, conserving resources, and related matters of internal maintenance [7]. Individual initiatives include the identification future opportunity, initiate a degree of newness in product and services, proposed a create proposal, and role behavior that aggregatedly promotes others to participate in attaining organizational effectiveness.

Civic Virtue: Civic virtue is responsible, constructive involvement in the political process of the organization, including not just expressing opinions, but reading one’s mail, attending meetings, and keeping abreast of larger issues involving the organization [18]. It requires delivering a thorough knowledge of affairs occurring in the organization. It touches on how employees respond appropriately and responsibly to how the organization governs. It demonstrates the extent of employee involvement to stay up-to-date with important issues of the organization, such as in new developments, company policies, study methods and self-improvement efforts. The examples of civic virtue include voluntarily serving on committees and attending social occasions as well as spreading goodwill in the bigger community.

Self-Development: Employees perform the discretionary behavior to improve knowledge, skills, and abilities. George and Brief [19] state that this might include seeking out and taking advantage of advanced training courses, keeping abreast of the latest development in one’s field and area, or even learning a new set of skills so as to expand the range of one’s contributions to an organization [7].

B. PUBLIC VERSUS PRIVATE

The public and private organizations differ in some fundamental issues include profit versus political focus, societal versus business focus, degree of accountability,
rational versus political decisions, approaches of HRM, control over the employee, valuing time, business strategy and many other aspects [20, 21, 22]. There is an overwhelming evidence that public commercial bank is too large, over employed, inefficient, less productive in comparison with private commercial banks in Bangladesh. Public commercial banks in Bangladesh subjects to criticism being inefficient and unproductive compare to private commercial counterpart. The private commercial banks typically thin, agile, highly productive, and profitable. In public commercial banks, due to political influence, corruption, unions, and bureaucracy have been blamed for the lower performance [23]. The organizational culture of these two types of organization create a differential work attitudes among the employees. There are scholastic evidence that employees of both types of organization fundamentally differ in their perceptions relating to their work environment [24]. Therefore, the first hypothesis of the study is-

**H1:** There is a significant difference between the employees in their perceptions about the OCB of public and private commercial banks in Bangladesh.

**C. ANTECEDENTS OF OCB**

There have been great number studies conducted on OCB and antecedents of OCBs were explored since this behavior contributes to the effective functioning of an organization [25].

1) Employee Motivation: Employees’ work motives may guide their behaviors, but also their discretionary, non-task behaviors [26]. OCBs are less likely to be formally rewarded that are presumably performed by an intrinsic motivation mechanism [27]. Barbuto & Story [28] indicate that employees’ sources of motivation offer some explanation of their OCBs. When motivation factors are present in a workplace, an individual might experience high levels of satisfaction and commitment at work, which in turn lead to high levels of OCB. Extrinsic and intrinsic work motivation can directly affect employee motivation to perform voluntary behavior. The study shows a positive correlation of extrinsic and intrinsic work motivation with OCB [29]. Specifically, internal work motivation is associated with individuals’ to display of OCB. Therefore, the second hypothesis of the study is-

**H2:** There is a significant association between the work motivation and OCB of public and private commercial banks in Bangladesh.

2) Job Satisfaction: There exists a positive relationship between job satisfaction and all the dimensions of OCB [30]. Werner [31] asserts that only satisfied employees seem more likely to display positive behaviors that can effectively contribute to the overall functioning of the organization. According to Organ & Ryan [32], job satisfaction has the most robust attitudinal relationship with OCB. A number of independent studies have established a relationship between satisfaction towards one’s job and extra role behaviors [33]. Therefore, the third hypothesis of the study is-

**H3:** There is a significant association between job satisfaction and organizational citizenship behavior of public and private commercial banks in Bangladesh.

3) Organizational Commitment: Organizational commitment and OCB are two important constructs in organization behavior (OB) field [34]. The identified antecedent variables were found to be correlated with both job satisfaction and OCBs [35]. Organizational commitment can increase OCB. This means that an increase in organizational commitment will also increase OCB. Therefore, the fourth hypothesis third hypothesis of the study is-

**H4:** There is a significant association between the organizational commitment and OCB of public and private commercial banks in Bangladesh.

**D. PRECEDENCE OF OCB**

Organizational Effectiveness: OCB is one of the fundamental issues in the field of organizational behavior, accordingly, the attention has been made to promotes the citizenship behavior of employees to encourage organizational effectiveness [36]. OCB has a very strong link with individual and organizational performance, and therefore contributes to the overall productivity of the organization [37]. OCB is essential to organizational survival. It is instrumental in maximizing efficiency of the organization. OCB aims to protect the organization against destructive and undesirable behaviors, improves incumbents’ skills and abilities and increases performance and productivity of organization by effective coordination [38].

The investigation of the potential influence of OCB on an organization and individuals working in it, Podsakoff, MacKenzie, Paine, and Bachrach [13] found seven ways in which OCB might have an impact on workgroup and organizational performance such as improves managerial productivity, enhances coworkers’ productivity, frees resources for more productive purposes, reduces the need to devote scarce resources to purely maintenance functions, improves coordination among workgroups to attract and retain the best people, stabilizes organizational performance, and facilitates adaptation to environmental changes. Therefore, the fifth hypothesis of the study is-

**H5:** There is a significant association between the organizational citizenship behavior and organizational effectiveness of public and private commercial banks in Bangladesh.

**III. METHODOLOGY**

3.1 Sampling Procedure

The population of the Study: The population of this study consists of the officers/executives in different layers of management in commercial banks in Bangladesh.
Sample Frame: The target population of this study consists of 45 commercial banks in Bangladesh including 6 public banks and 39 private commercial banks incorporated in Bangladesh. Four (4) public banks, eight (8) private commercial banks have been identified for better representation of the population of the study (population coverage 70.4%). Krejcic & Morgan [39] determine optimum sample size at best 384 for finite population in their optimum sample determination formula. For the best comparison between public and private banks, this study surveyed 400 respondents, including 200 from public and 200 from private commercial banks.

3.2 Procedure for Data Collection

Primary Data: The primary data of the study collected through the questionnaire by survey method. The survey of the study conducted during 2016 to 2017. This study used a structured questionnaire to assess perception of bankers regarding OCB, employee motivation, job satisfaction, organizational commitment and organizational effectiveness. The questionnaire is developed by reviewing different literature. Five-point Likert type scale has been used to measure the perception of employee on identified factors of the study.

Focus Group Discussion (FGD): The focus discussion of the study consists of five members, including two renowned professors, who are high expertise in research in organizational behavior, two practicing managers from sample banks, including public and other private commercial banks, and the researchers of the study.

Secondary Data: The review of relevant literature is the main source of secondary data. Different published books on organizational behavior, human resource management, and industrial psychology have been reviewed for developing conceptual framework of the study. Published scientific articles, dissertations on national and international levels have been reviewed to identify the elements of OCB and its antecedents and precedence related factors.

3.3 Field Work

After identifying different leading factor of OCB, and its antecedents such as “employee motivation, job satisfaction, organizational commitment” and precedence as “organizational effectiveness”. The questionnaire is developed the for collecting employee perception regarding OCB and its antecedents and precedence. After completing the questionnaire the pilot study is conducted to ensure the items on the questionnaire was clear to the respondents.

3.4 Tools for Data Processing, Analysis, and Presentation

After a successful survey of the questionnaire, a carefully scrutinize and edit of inconsistency of the responses are verified and edited for serving the purposes of the study. The study data were analyzed by the statistical package for the social science (SPSS). The Descriptive Statistics like mean, standard deviation were used to compute the general understandings of OCBs. The inferential statistics like One-Way ANOVA and Multiple Regression Analysis were used to explain perceptions mean difference and the association of independent (Antecedents of OCB) and dependent variables (OCB and its Precedence).

3.5 Data Reliability

Reliability of data has measured by using the Cronbach's Alpha [40]. Cronbach’s Alpha is a coefficient of reliability and consistency.

Table 1., Reliability Statistics

<table>
<thead>
<tr>
<th>Factor</th>
<th>Cronbach’s Alpha</th>
<th>N. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Motivation</td>
<td>0.916</td>
<td>33</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>0.925</td>
<td>16</td>
</tr>
<tr>
<td>Organizational Commitment</td>
<td>0.796</td>
<td>7</td>
</tr>
<tr>
<td>Organizational Citizenship Behavior</td>
<td>0.858</td>
<td>7</td>
</tr>
<tr>
<td>Organizational Effectiveness</td>
<td>0.937</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>0.966</td>
<td>84</td>
</tr>
</tbody>
</table>

The Cronbach’s Alpha of The Cronbach’s Alpha of OCB is 0.858 of 7 items The Cronbach’s Alpha of Work Motivation is 0.916 of 33 items; The Cronbach’s Alpha of Job Satisfaction is 0.925 of 16 items; The Cronbach’s Alpha of Organizational Commitment is 0.796 of 7 items; The Cronbach’s Alpha of Organizational Effectiveness is 0.937 of 7 items.

Finally, the Cronbach’s Alpha of 84 items is 0.966. These Alpha value is higher than that is suggested by Nunnally [41] and therefore data collected can be considered to be highly reliable.

IV. RESULTS AND DISCUSSIONS

4.1 Descriptive Statistics on OCB

<table>
<thead>
<tr>
<th>OCB Variables</th>
<th>Public Bank</th>
<th>Private Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x</td>
<td>σ</td>
</tr>
<tr>
<td>Organizational Compliance</td>
<td>4.35</td>
<td>.67</td>
</tr>
<tr>
<td>Organizational Loyalty</td>
<td>4.29</td>
<td>.52</td>
</tr>
<tr>
<td>Helping Behavior</td>
<td>4.22</td>
<td>.52</td>
</tr>
<tr>
<td>Self- Development</td>
<td>4.04</td>
<td>.67</td>
</tr>
<tr>
<td>Individual Initiative</td>
<td>3.93</td>
<td>.76</td>
</tr>
<tr>
<td>Sportsmanship</td>
<td>3.89</td>
<td>.71</td>
</tr>
<tr>
<td>Civic Virtue</td>
<td>3.88</td>
<td>.72</td>
</tr>
</tbody>
</table>

Table 2., Descriptive Statistics on OCB

It is found in the table 2, employees’ of both public and private banks perceived mean value on “organizational compliance” is 4.35 respectively. The perceived the mean value of “organizational loyalty” is 4.29 of public banks and 4.25 of private banks. The perceived the mean value of “helping behavior” is 4.22 of public banks and 4.18 of private banks. The perceived the mean value of “self-development” is 4.04 of public banks and 4.06 of private banks. The perceived the mean value of “individual initiative” is 3.93 of public banks and 3.90 of private banks. The perceived the mean value of “sportsmanship” is 3.89 of public banks and 3.94 of private banks. The perceived the mean value of “civic virtue” is 3.88 of public banks and 3.89 of private banks commercial banks in Bangladesh.
Table 3 is a summary of findings related to employee’s perception differences on organizational citizenship behavior related dimensions (OCBs). From the above table it can be observed that perception differences of employees of public and private commercial banks regarding seven dimensions of OCBs (Helping Behavior, F=0.336, P=0.563; Sportsmanship, F=0.597, P=0.440), (Organizational Loyalty, F=0.503, P=0.479), (Organizational Compliance, F=0.000, P=1.000), (Individual Initiative, F=0.294, P=0.588), (Civic Virtue, F=0.005, P=0.944), and (Self-Development, F=0.079, P=0.779) do not significantly vary at the rate of 5% level of significance between public and private commercial banks counterpart in Bangladesh.

Therefore, the first hypothesis of the study—

H1: There is a significant difference between the employees in their perceptions about the organizational citizenship behavior of public and private commercial banks in Bangladesh” is rejected at the 95% level of confidence.

4.3 Regression Analysis

Multiple regression analysis applies to test the proposed hypotheses (H2, H3, H4, and H5) and to understand the relationship between dependent and independent variables of the study. This study considers three factors (Model-1, Table-4) as independent variables such as employee motivation, job satisfaction, and organizational commitment, and organizational citizenship behavior as the dependent variable as organizational effectiveness.

Table 4: The effect of Employee Motivation, Job Satisfaction and Organizational Commitment on OCB

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.247</td>
<td>0.159</td>
<td>14.120</td>
<td>0.000</td>
</tr>
<tr>
<td>Work Motivation</td>
<td>0.168</td>
<td>0.068</td>
<td>0.181</td>
<td>2.474</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>-0.025</td>
<td>0.060</td>
<td>-0.32</td>
<td>-0.411</td>
</tr>
<tr>
<td>Organizational Commitment</td>
<td>0.146</td>
<td>0.048</td>
<td>0.418</td>
<td>7.254</td>
</tr>
</tbody>
</table>

a. Dependent Variable: OCB
The regression test results shows \( R^2 = 0.264 \), F-value \( = 47.272 \) and p-value \( = 0.000 < 0.05 \). It indicates that work motivation, job satisfaction, and organizational commitment are good predictors organizational citizenship behavior of employee of commercial banks in Bangladesh. The value of R Square indicates that this study can explain 26% of the variance of independent variables of the study. The three independent variables show the results \( t = 2.474, p = 0.014; t = -0.411, p = 0.681; t = 7.654, p = 0.000 \); respectively which indicate the positive association of independent variables such as employee motivation and organizational commitment with the dependent variable OCB. The study also indicates the insignificant association between the independent variable as job satisfaction and dependent variable as organizational citizenship behavior of employee in commercial banks in Bangladesh. Therefore, the hypotheses \( H_2 \) and \( H_4 \) are accepted at the 95% confidence interval and \( H_3 \) is rejected at the 95% confidence level. The regression test results [Model-2, Table-5] shows \( R^2 = 0.259 \), F-value \( = 139.292 \) and p-value \( = 0.000 < 0.05 \). It indicates that OCB is a good predictor organizational effectiveness of commercial banks in Bangladesh. The value of R square indicates that this study explains 26% variance of independent variables of the study. The independent variable shows the results \( t = 11.802, p = 0.000 \), which indicate the positive association of independent variable OCB and with dependent variable organizational effectiveness. Therefore, the hypotheses \( H_5 \) is accepted at the 95% confidence level.

### Table-5: OCB on Organizational Effectiveness

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.668</td>
<td>.192</td>
<td>8.703</td>
<td>.000</td>
</tr>
<tr>
<td>OCB</td>
<td>.550</td>
<td>.047</td>
<td>.509</td>
<td>11.802</td>
</tr>
</tbody>
</table>

a Dependent Variable: Organizational Effectiveness

\( H_3 \): There is a significant association between the organizational commitment and organizational citizenship behavior of public and private commercial banks in Bangladesh. 

\( H_5 \): There is a significant association between the organizational citizenship behavior and organizational effectiveness of public and private commercial banks in Bangladesh.

**V. CONCLUSIONS**

The employee is a creative element of the organizational. The various research findings have further strengthened the fact that, if employees have become motivated, satisfied, dedicated, committed, then citizenship Behavior will be ultimately displayed and the organizations can go far away due to OCBs of its employees. There are unpredictable changes coming in the business environment today and will be in future. In order to survive in unforeseen changes, their employees must have OCBs to tackle down threats from the environment. Employees not only work for monetary compensation, but also they work for keeping themselves in a sound mental state in adult life. When the organization can create a full-fledged conductive work environment, then employees become more active in organizational goal attainment. The employees come to the organization, for the fulfillment of need from the organization and the organization has done various tasks to meet their needs and expectations. The management needs to understand the set of expectations according to their financial and non-financial mixtures. Not only financial benefits, but it is also necessary to provide employees with a social environment to work, good working environment and create opportunities for employees personal development. The organization can introduce various types of training and education program based on the need for their employees. In this case, the top management should have a patronization to promote the inner strength of work in terms of positive affectivity. Citizenship Behavior must be promoted in the case of all organizations to work for the continuous development of the human inside of the enterprise. This work specify the employee's perceptions regarding the OCBs and its antecedents and precedence of public and private commercial banks of Bangladesh. The
The ways of promoting job satisfaction for better realization of OCBs can be prescribe as-

- A consistent top management commitment requires for making a happy workforce.
- The psychological contract of employee needs to be recognized and revised regularly for making them happy.
- Need to build an effective organizational culture that promotes employee satisfaction at work.
- Management need to displays effective leadership leading to satisfying the needs of employees by accomplishing organizational as well as personal goals of employees.
- Empowerment at work creates a sense of ownership over the organization that creates enjoyment of work for everyone.
- Providing career advancement to the employees promotes their happiness at work.
- Rewarding employees reinforce them for doing worthwhile job for accomplishment at work.
- Recognizing employee as they do a worthwhile job positively affect their perception regarding the contribution in favors the organization.
- Feedback is the acknowledgment of work doing in favor of the organization; it should be non-threatening, constructive, and timely given. When it has given appropriately, create a pleasant work environment for everyone.
- Employees need to be recognized for fostering innovation at work and think creatively for pleasant innovative working atmosphere.
- Providing job security creates a hassle-free mental state for job stability and work satisfaction.
- Team building effort need to be given for cheering cake of accomplishments.
- Regular consistent counseling program should be given to relieve the pressure of work and bringing happiness at work by psychological treatment.
- An off-the-job interaction is another way to create an environment to enjoy with colleague, peers and team member of the workgroup.
- Training and development provide opportunities to learn for changing the way of work pattern. It provides the operational efficiency for doing the valuable job for the organization.
- Provide better working conditions, quality of work life for enlisting satisfaction at work.

The results show that citizenship behavior of employees of commercial banks deployed by employees to achieve the overall goal of the organization. Employees look forward to the organizational initiative and patronization for performing their level best. The behavior of employees should be understood, recognize and manage carefully by managerial interventions. The management needs to promote and utilization of organizational citizenship behavior for organizational sustain, growth, and development.

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A Study on Green Supply Chain in Bangladesh: A Literature Review

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Abstract – In the 21st century, greening the supply chain is increasingly concern for many business enterprises. But it is a challenging task for management to implement as the waste and emissions incurred by the supply chain which has great effect on environment. In the organizations, mostly the green initiative hinder due to the failings of the requirements that logistics providers need. On the other hand, if we don’t start relying on GSCM, we will be the reason for environmental hazards. Developed countries are moving forward with the help of GSCM whereas, developing countries are lagging behind. Even many of them are unaware of GSCM drivers such as green design, green purchasing, green transformation, green logistics and reverse logistics. To take a step forward towards green supply chain management, this paper aims to introduce the present and possible developments, focusing on several areas where environmental aspects could be included on the basis of Bangladesh. As expected, we figure out that minor adoption and implementation of GSCM practices can give a new progressive face to several sector of this country and this can be work as an example for other developing country.

Keywords – Green Supply Chain Management (GSCM), Bangladesh, Supply Chain Management, Environmentally Preferable, Environmental Impact, Eco-design (ECO).

I. INTRODUCTION

Green Supply chain management is an ongoing overwhelming topic of SCM in both business industry and in environmental sector. It helps to maintain environmental issues by connecting each components of supply chain to achieve environmental objectives along with achieving the organization's efficiency. SCM stands for connecting each element of the manufacturing and supply chain process from raw materials through to the end users, and handling integration of all participating firm’s contributions in the supply chain(1). Green supply chain management incorporates nature into SCM to reduce the bad impacts of nature. Developing countries like Bangladesh where environmental pollution is a common scenario, need to implement GSCM. Carbon monoxide emissions, discarded packaging materials, scrapped toxic materials; traffic congestion and as other forms of industrial activities can pose significant threat to the environment, entire SCM need to be modified. In Bangladesh, there are lacking of GSCM practices in almost every industry because of legislation implementation and mostly because insufficient knowledge. The main goal of this study was to investigate the relationship between green supply chain management activities, and supply chain performance in developing countries like Bangladesh. This study also investigated the drivers and pressures of GSCM practices and the impact of this practices on the performance. GSCM practices and organizational performance has a interrelated connection. Such as, GSCM practices have a positive impact on operational efficiency because it helps the organization being socially responsible, ethically bound and fair policy practiced organization. Along with, it help the organization to run the operation system in environment friendly process. Moreover, it facilitate to reduce lead time and improve quality reducing defects. However, the concept of the GSCM drivers are new in Bangladesh which leads to the minor adoption and implementation of GSCM practices. The main reason behind this fact is people are not aware of this management system and also they do not know the benefits of it. Renowned company Pepsi is a good example for everyone to understand the importance of GSCM; it will encourage people to implement GSCM, because Pepsi-Cola saved $44mn by switching from Corrugated to reusable plastic shipping containers for one liter and 20-ounce bottles, conserving 196mn pounds of corrugated material. Like Pepsi, if we start taking small initiatives (ex: using reusable packages, green packaging etc.) to move forward to GSCM, the day is not very far when all industries will accept this system. Most literature so far published on GSCM which is directed towards either developed countries or in a specific sector of SCM rather than reviewing as a whole. So by default, people do not have any option to learn more about pros and cons of GSCM and the sectors where it could be implemented.

We did the study on current situation of practicing GSCM in Bangladesh and by studying, it appears that the rate is not satisfactory and it could be resolved by taking some initial basic steps. In this paper, our target is to provide the general concept of GSCM and to show how several industries are spoiling nature by not implementing GSCM. Apart from it, this paper gives a simple structure of GSCM which can make any industry eco-efficiency.

While doing this study, we had some limitations. If we could recover those, we would have more spontaneous findings. Limitations are- During this study, we have not conduct any survey on this topic because very less number of respondents as most people have no idea about the topic, which means we had no primary data. Moreover, there are many research papers available on GSCM but those are either for the developed country or for on the specific part of GSCM.
Since we don’t have many years of experience on conducting researches and producing academic papers of such a large size individually, the scope and depth of discussions in this paper is compromised in many levels compared to the works of experienced scholars.

This paper will help future researchers to do in depth research on GSCM for developing countries. It will also help them to generate ideas to develop models on this topic. Future researchers will have the opportunity to gain knowledge of different Industries GSCM practices. This study reveals suitable way of practices for the companies who are looking forward to implement green to their supply chains that were uncovered. Significance of this paper is it also serves environmental experts to do their further study by giving attention on aligning the environment with the corporate business sector.

II. METHODOLOGY

The process used to collect information and data for the purpose of making business decisions. The methodology may include publication research, interviews, surveys and other research techniques. This process could include both present and historical information. This process also includes collection, identification, classification, interpretation and presentation of different data in a systematic manner. The whole process has been given below:

Since, this field is almost new in developing country and not been studied more clearly before, here we have done exploratory research. We have done this research on the basis of secondary data. We collected most of the information from the previous research papers and also from different articles. Most of the data are sourced from conference papers, journal papers and online databases.

III. Literature Review

A. Green Supply Chain Management:

Green supply Chain Management (GSCM) refers to the way in which supply chain management and industrial purchasing considered in the context of the environment. One of the most cited definitions explains GSCM as integrating environmental into supply chain management, including from the product design till the delivery of the final product to the end consumers as well as end of the product life cycle(2). Over the past few decades, SCM has played an important role for organization’s success and subsequently the green supply chain (GSC) has emerged as an important component of the supply chain strategies for a large number of companies. The two integrally related SCM concepts are GSCM and Sustainability performance. Environmental management can play critical role as both a responsibility towards society and as an important corporate duty (4). A number of researchers have focused on supply chain management and also GSCM considering the potential multi-criteria decision-making problem in recent years. (3). A burgeoning amount of research has examined the effect of environmental management practices on firm performance (5). Management that is designed for environment, improves environmental performance of the organizations and help minimizing life-cycle environmental impacts. How executive views of social responsibility have been translated into practice as it also help to increase the profitability of the organization by being socially active has been explained (6), (7) and (4). Green supply chain management practices also attributed to the increasing awareness and concern of increasing pollution, carbon emissions and deteriorating environmental conditions. As an environmental practice, resource reduction enables firms to minimize waste which results in more efficient for distribution processes (8). To implement GSCM, organizations should follow GSCM practices which consist of environmental supply chain management guidelines. Numerous studies have tried to identify GSCM practices in organization which are referred to such internal systems as environmental and quality management systems. They suggest that under rigorous quality control, organizations can improve their environmental practice by learning from experiences of their quality management programs. To improve the performance of this sector, organizations need the practical involvement of the government, suppliers, customers, and even with the competitors (8).

B. Related Review Literature in Developed Countries and Developing Countries:

The term Developed Country is used to designate nations that have high per capital income which is average income per citizen, high standards of living, long life expectancy, and other measurements which is related to high quality of life for the individual. The UN had set Millennium Development Goals from a blueprint developed by all of the world's countries and leading development institutions, in order to evaluate growth. The UN has also developed the Human Development Index (HDI), a compound indicator of some of the statistics, to gauge the level of human development for countries. Green Supply Chain Management in Developed Countries means to represent the environmentally-friendly image of products, process, systems and technologies, and how the business is conducted. A study from Australia, explored that the relationship between a customer and its suppliers has a moderate impact based on the environmental performance. One research of Portuguese examined the links between green practices of supply chain management and supply chain performance in the context of the Portuguese automotive supply chain by obtaining the conceptual model from data analysis that provide evidence which shows green practices have positive effects on quality and on customer satisfaction. A study from Japan introduced green supply chain management experiences of large by
showing that the large Japanese manufactures can green their supply chain by creating win-win relationships with their partners. It can also sustain the growth for the entire supply chain along with the whole organization. To increase the level and nature of greening the supply chain in the UK manufacturing sector, researchers have been exploring the driving forces that management practices.

The study from South Korea has identified the drivers of participation in green supply chain initiatives as small and medium-sized suppliers and their most important stakeholders are considering this. The relationship between supply chains and environmental performance in Canada also has examined by one study. This study proved that time and financial resources to deal with solid waste are the most limiting factors.

On the other hand, the concept of the developing nation is found, less than one term or another, in numerous theoretical systems having diverse orientations — for example, theories of decolonization, liberation theology, Marxism, anti-imperialism, modernization, social change and political economy. The country that has a low level of industrialization, citizens has lower life expectancy, lower educational attainment, lower per capital incomes, and higher fertility rates is considered as a developing country. In developing countries, most companies adopted the green supply chain management into their business to reduce the negative environmental effects rather than adopting an approach to reduce or reuse the sources of waste. Concern about the environmental issue has also rise the interest of researchers to investigate the adoption and implementation of GSCM practices in developing countries. Attention of the researchers on this issue has been devoted to the concern of GSCM in developing countries especially in Asian Regions (2). The GSCM concepts are new in South East Asian Region and not many companies followed these approaches. However, some countries such as Philippines, Indonesia, Malaysia, Thailand, and Singapore had started to practices green supply chain management in some of their companies. Green Supply Chain Management concept is very new in Malaysia and they are trying to adopt it in their companies, but not every company is practicing. Recent literature showed that most researchers starting investigate on GSCM practices mostly in East Asian Region especially in China (2). China has analyzed the relationship between green supply chain management level and the classified determinant factors and started practicing it. The study also examined whether Chinese manufacturers’ are aware of local and international environmental enhancing energy savings and pollution reduction compliance related to GSCM implementation. They also examined if the mediating effect of regulatory pressure plays a major role (2). In India, firms implement GSCM and it’s found that there is some improvement in environment and operational performance. In India, many manufacturing supply chain enterprises considered or initiated some GSCM practices which have not received much attention. However, a regulated manufacturing product take-back system has been in operation where it forces manufacturers to consider environmental effects in the whole life cycle, and motivates organizations to pursue GSCM practices. Thailand analyzed the recent green activities in manufacturers and also measured the level of green supply chain management in-depth regarding green procurement, green manufacturing, green distribution, and reverse logistic.

C. Review of Previous Studies on Green Supply Chain Management:

The effect of environmental management practices on firm performance has been examined by huge amount of researcher. Some studies have identified environmental management practices as a source of competitive advantage that can improve a firm’s environmental performance, market performance, operational performance, and financial performance. Green supply chain management practices can also improve a firm’s operational and economic performance (10). Based on survey data, (12) demonstrated that firms which adopt environmental management practices will improve environmental and operational performance. Now a days managers held concern for the organization toward social responsibility basis on the area of environmental (11). Thus, many companies are now focusing on sustainable strategies, including Baxter, Toyota and Walmart, by launching green supply chain programs which designed to promote environmental management practices throughout their supplier network. A steady of prior research has examined that antecedents of environmental management practices in the field of supply chain management and top management commitment, resource and management system availability and communication and training are highlighted as important operational level antecedents. Individual attitudes, preferences also have been identified as important predictors of environmental commitment. Some research from 2000 to 2002 have investigates set of insights about public policy; environmental impacts, investment analysis, and technological feasibility by using scenario analysis have been done. From 2003 to 2005, another research project explored the green supply chain scope, environmental strategy and priorities by using survey questionnaire. But these strategies differ from industry to industry. Not all industry can implement one strategy as the criteria are not similar. Some findings (13) confirmed that GSCM practices from the four different industrial sectors, including Food and Drink sector, Clothing, Textile and Tannery sector, Electronics facility sector, and Wood processing and Furniture sector, differ (14). On the other hand, some secondary data from corporate sustainability reports explored the relationship between environmental management practices and firm performance and find that environmental management practices are positively correlated to financial performance. However, there are lack of agreements of how to measure this aspect of firm performance by the researchers.
IV. DISCUSSION

Integration of environmental management and supply chain management is known as Green Supply chain management (GSCM). Ultimate goal of GSCM is to attain a greener supply chain to maintain competitive advantage and also increase business profit and market share objectives but considering all the aspects of environment. It helps to maintain environmental issues along with the organization’s efficiency. This process starts from manufacturer and ends at customers. Climate is changing rapidly and the main cause of the current global warming is the human expansion of the greenhouse effects. Bad impacts of environment can be reduced if we start practicing GSCM. External key drivers to initiate GSCM could be Government compliance, Financial ROI, Reverse Logistics, corporate responsibility. Strict standards imposed by the Government can mitigate the negative externalities caused by the organization. Internally under supply chain, manufacturers are key drivers to initiate green activities and they play vital role to follow green SCM. On the other hand, the logistics department may have less contribution compare to manufacturer. Although it has connection with both inside and outside of the organization. Most companies outsource their logistic activities, for which company does not get the chance to know whether logistic service provider is following GSCM or not. Logistic service providers need to be selected on the basis of not only the general concepts of price, quantity along, provider’s status but also with the environmental initiatives they are following. Before outsource a task, the principal company needs to evaluate how much eco-friendly the service provider is and then based on their requirement they should select the other party. Under selection process, there are 5 steps- (1) operational capability, (2) service level, (3) costs, (4) provider status and (5) environmental capability. First 4 categories can be provided by other companies, but rarely can we found a company who has environmental capability. This criteria rarely used by the companies since GSCM is not common everywhere. There are 2 type of logistics- 1. Green Logistics, 2. Reverse Logistics Service. ‘Green’ word mostly stands for the sustainability because green represents the environment and if the environment is not being hampered, the chance of doing business will be longer as the organization itself representing socially active by doing so. Green logistics is referred by the amount of pollution released, acceptance level of energy and so on. Reverse logistics services includes some specific criteria that are general in nature and useful for broader purposes with the Green logistics. Green logistics refers to providing eco-friendly methods of logistics services, directed from the manufacturer to the final consumer whereas Reverse logistics illustrate the processes physical flows backwardly, directed from the final consumer to the manufacturer. Green logistics is frontward which includes several R’s and the steps of Reduce, Reuse, Recycle, Re-produce, Re-furbish, Re-work, Reverse logistics, air and noise emission reduction etc. and this green logistics is essential for sustainability.

To maintain environmental sustainability, GSM refers the way of innovative SCM. There are 2 types of green supply management process: 1. Greening the supply process and 2. Product based green supply (19). Greening the supply chain process is basically activities of supply chain management in which all process or step of supplying is considered from environment’s perspective. On the other hand, product based green supply targeted on the variations of the product supplied and try to arrange use the by-products as an input. It will reduce cost as well as help to reduce the waste. Sustainable Green Operations are basically operations that are economically viable, socially fair, and environmentally friendly. It include eco-design, green manufacturing and closed-loop supply chains. One of the main purposes of the GSCM is to use eco-friendly green inputs and turned it into green outputs which are not only good for human beings but also beneficial for human surroundings. Main objective should be using less energy and high technology to produce the finished goods which will automatically causes the less wastages of production. Wastage will be minimized, for instance, one firm may reuse waste output from another firm. It requires advanced technology to utilize it, for which higher investment needed.

Tannery Industry of Bangladesh can be a good example of the industries which are creating huge environmental problems. Those who worked under this sector has lack of knowledge about the environmental issues, also they are not aware of GSCM practices by which they can get rid of poisonous effects of this industry. From this industry, the wastewater containing acid sludge, chromium, animal flesh and lead, that discharge the effluents and wastes into the Buriganga causing a large amount of wastage pouring into Dhaka city’s sewerage and eventually it create hazardous situations for human surroundings. The government estimates that about 21,000 cubic meters of untreated effluent is released each day. Government officials and tannery industry representatives told Human Rights Watch that not a single Hazaribagh tannery has an effluent treatment plant to treat its waste, which can have many thousands of times the legally permitted concentrations of pollutants (23). Tanning process includes both solid and liquid wastes. The solid wastes are predominantly are initial and final stages of processing while the effluence is produced mostly during the tanning and dying (23). During the tanning process at least about 300 kg chemicals (limesalt, etc.) are added per ton of hides which create hazardous pollution every now and then and are one of the reasons behind wastewater. Lung cancer and skin allergy are the common diseases causes by the air pollution. This process need to be changed for the betterment of our own environment. There are some treatments available which are followed by other countries such as Mechanical treatment, Effluent treatment, Post-purification, sedimentation and sludge handling. All these treatments
basically fall under Green supply chain. Our country should develop such treatments.

Here we have drawn a figure, which shows us a simple way of implementing green supply chain for any industry.

GSCM=Green*(Purchasing+ Manufacturing/Materials Management + Distribution/Marketing +Reverse Logistics)

**Figure:** General Green Supply Chain
Here, we have combined some figures and represent a new figure which to some extent shows that the process of GSCM starts from raw materials and ends after the product have been sold (15)(16). We tried to reflect the supply chain designed in such a way that allows everyone to perform individual task promptly and each task is concerned with environmental health that will turn that SCM into Green Supply Chain Management. This includes all the process of SCM, such as- product design, material sourcing and selection, manufacturing process, delivery of the final product as well as end-of-life time of the product after its useful life. Suppliers need to collect the green items if possible, even if they do not have the opportunity to use green materials; they should take precautions to avoid the item that pollute the environment. Eco-conscious firms prefer green purchasing which defined as an environmentally conscious purchasing initiative that tries to ensure that purchased products or materials meet environmental objectives set by the purchasing firm, such as reducing the sources of wastage, promoting recycling, reuse resource reduction, and substitution of materials (17) (18). Product design can also help to raise awareness among people. Moreover, environment is also being polluted because of product’s wrong packaging. Green packaging can be part of GSCM which will serve us to attain pollution free environment. Once the customers receive the product, the process does not ends there, it continues till the life cycle of finished goods. That is why proper monitoring needs to be made till the end of the product life-cycle. Wastages of the product can be recycled and reused for another product or for raw materials. In this entire process, there should be a team and their main job is to collect the wastages. Reusable wastages will be collected and will be kept for re-manufacture of new product whereas; other wastages will be dismissed in proper way considering all environmental aspects. To implement GSCM, sufficient resource is required. The motivation for implementing GSC may come entirely outside the firm’s normal SCM process if the firm’s capabilities are insufficient enough to launch green supply chain on its own (19).

Another example of not maintaining environmental security is manufacturing industries-specialy the textile mills can be seen as the major contributor to the environmental problems. 60% of pollution in the Dhaka watershed area are caused by this industry and known as second largest contributor of pollution after Tannery. This industry produces 56 million ton of wastages and .5 million ton of sludge per year. There are five stages of textile (spinning, weaving, knitting, wet processing and apparel or garments) that produce air, water, noise, or sound pollution. Air and sound pollution caused by spinning and weaving but wet processing (dyeing, printing, and finishing) industry creates air and water pollution. Increasing pollution, carbon emission and other hazardous incidents occurred by the suspect can be reduced if GSCM practiced appropriately. Few companies (ex: PALMAL Group) who have started implementing the GSCM and they are performing very well. Apart from environmental issues, there are few factors which have increased the demand for following GSCM. Such as, Number of customer demand for quality product is getting higher day by day, large competitive global market, inherent financial return in GSCM etc. Foreign buyers are now mostly conscious about it and they tend to know whether the organization is maintaining eco-friendly process or not. To keep foreign buyers, manufacturing industries are moving forward to GSCM. It’s an emerging field which has been created for the need of environment and for the sustainability of the business. Academics and practitioners are engaging themselves in this field to figure out the way of reducing waste, maintaining the quality of product-life and natural elements. Just to ensure these, ISO 14000 series had been established which has some objectives related to environment and organizations supply chain. GSCM has impact on purchasing policies which help to avoid the usage of perilous ingredients through the process of eco-friendly material selection criteria. Practice of GSCM is getting mature, governments and supply chain partners working together to reduce environmental problems by reducing waste, energy pollution, minimizing environmental risks and improving the good will of the community. The focus of firm performance has changed in the global environmental demands today. At present, more attention is given to environmental and social performance.

Enterprises have developed initiatives for GSCM, including screening suppliers for environmental performance, providing training to build supplier environmental management capacity, and developing reverse logistics systems to recover, reuse and re-manufacture. On the other hand, government can also act as a Green Purchasing advocate for improving buyer-supplier relationships and can document successes for promotion. An increasing number of governments have started to promote voluntary actions to achieve their environmental goals. Thus, it can be concluded that GSCM is initiative if the Earth is to be kept green by minimizing the environment pollution.

If we look into developing countries, the number of research and output is very less compared to developed country. This concept is new in Asian Region and the number of firms who actually able to implement GSCM is very low. Developing countries like Bangladesh has a number of organizations who have stated their concerns to make sustainable of the sector. As GSCM has already been known as a tool to improve the supply chain and business operation, the rapid growth of the industry has brought challenges relating to resource scarcity, energy, waste generation some adverse environmental implications. Without any concern, construction industry produces the bulk amount of waste and practices traditional supply chain. If they start following GSCM, less wastages will be generated. New technology need to use reduce the bad impact. However, environmental consciousness, climate change, natural calamities ecological imbalance, general supply chain need to upgrade to green supply chain.
V. CONCLUSION

As expressed, it is clear that GSCM is a kind of a medication for environmental unhealthy and polluted country. The way of implementation would vary based on the firm’s nature and it is very difficult to understand which strategy need to be executed. This paper gives a generalize idea of entire GSCM, so that future researchers can do in-depth research and take basic ideas from it. Adding eco-efficiency concept in the SCM and let people give general ideas about what GSCM is and how it works is the main contribution of the paper. During the study we find that to maintain healthy business environment and to reach sustainability, it is important for business to deal with problems in such a manner that allows no harm for our surroundings. Also, country like Bangladesh can make it possible to reduce cost and use of resources by adopting more efficient modes in SCM. Since we conducted our study on Bangladesh and the findings were similar as expected that GSCM can reduce our ecological bad impacts due to industrial activity. There are lack of agreements of how to measure the aspect of firm performance related to GSCM by the researchers. As this is a new concept for this country, limited data’s were available or else, it could be more informative.

REFERENCES


Three Major Challenges of 5G in Bangladesh

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Abstract – 5G or 5th Generation network will be launching in some developed countries between the years 2019 to 2020. According to our ICT affairs adviser, Bangladesh will be among the first countries to introduce 5G network in the world. However, 4G network just launched in the beginning of this year (2018) and still the network is not that stable, especially in the rural areas. 4G network is hardly found. In Bangladesh data packs for using internet is very much high than other countries and when operators introduced new generation in the market at first time, they also increased the data price and for that Bangladeshi customers have some unwillingness to purchase the data packs for using internet. This research was conducted on secondary research where the information was collected and sorted from online database accessed journals, Government website, and other authentic webpages. The authors identify three major challenges for 5G in Bangladesh: first the pricing of the service could be unaffordable; the second challenge being lack of network coverage; and the third challenge being lack of 5G enabled devices. Therefore, before going after new technology we should first fortify our existing technology.

Keywords – Bangladesh, 5G, network, speed, 4G, 3G

I. INTRODUCTION

5G is the fifth-generation cellular mobile communication. It succeeded the 4G, 3G & 2G. The data transfer rate of 5G will be at least one Gbps, which is equal to 1,000 Mbps [3]. The 5G networks being planned right now will operate in a high-frequency band of the wireless spectrum—between 30 GHz and 300 GHz. The transfer rate of data from one device to other device is very high speed [10], but they do not travel as far as the lower-frequency waves used in 4G networks. As 5G has a high frequency waves, it has difficulty getting around walls, buildings, and other obstacles.

What the authors understand about 5G is that there will be high-speed internet, people can easily download large file sized movies within few minutes and the download speed will be 10 times higher than that of 4G network speed [3]. From that speed, people can enable to ride a car without any driver; communication will be based on virtual reality and robot network. Developed countries are testing 5G network like South Korea, China, Japan, United States and they think that they can lunch 5G network between 2019 to 2020.

ICT affairs adviser, of Bangladesh Sajeeb Wazed Joy, stated on Wednesday July 25, 2018 [5] at a program titled ‘Bangladesh 5G summit 2018’ at Pan Pacific Sonargaon Dhaka, that Bangladesh will be among one of the first countries in the world to deploy the 5G (fifth generation) mobile technology in the world [1]. In this summit, Chinese telecom vendor Huawei in association with mobile operator Robi, demonstrated up to 4.17 Gbps speed for mobile network which is good for Bangladesh but we have to remember that we just recently enrolled into the 4G service in this year February (2018) [4].

The developed countries like China, Japan and United States are using 4G network services from 2011 to 2012 [2]. These countries have deployed 4G services at least 6 years prior from us. Bangladesh just started its 4G journey from this year (2018). Though the telecom operators claimed that 4G is enabled everywhere in Bangladesh but 4G network with high data transmission is only accessible in divisional cities, not in rural areas [9]. Today most of the rural areas are somewhat covering 3G network [9]. Moreover, there are some rural areas where networks are not yet accessible by the network operators.

II. METHODOLOGY

This research was conducted on secondary research where the information was collected and sorted from online database accessed journals, Government website, and other authentic webpages. The authors then matched to their identify the challenges to lay the ground for analysis.

III. RESULTS

It is understandable that, most of the people are very much excited to get access to 5G network speed without knowing its consequences. However, the authors identified 3 major challenges. The very first major challenge of 5G would be its price [6]. As we know, at the start of any revolutionary technology the prices go sky high in order to raise the expenses of the research and development of the project. All of the network operators that will provide 5G SIM will charge a relatively premium value compared to that of 4G. As a result, many of the customers who want to buy a new SIM may face problem for the price hike. As for possible solution-, free one-month 5G coverage as beta testing for the 5G
enabled SIM cards can be launched to see customer responses. As it would be free, many would be interested and can likely stay once paid offers are given [8].

The second major challenge of 5G would be its network coverage [11]. People who are paying premium to get access to 5G networks may not get it, especially those who live in rural areas as because until now 4G did not cover every part of the country. At present, many users of 4G hardly get a 4G signal in some areas and if they do, the speed is not good. Possible solutions would be- Socio economically rich users can be targeted first for coverage. These users tend to live in expensive locations, especially in the core of the city.

Lastly, the major challenge of 5G would be lack of 5G enabled devices. Still major mobile manufacturing companies are working to make their devices 5G supported [7]. Though a very few numbers of mobile devices are launched with 5G capability i.e. Motorola’s Verizon-exclusive Moto Z3 however, 5G would not be enabled until 2019. Moreover, the 1st generation of 5G phones would be a bit expensive so it would be best for all if the government exclude taxes from such devices to make it more affordable.

IV. DISCUSSION

Just before the hype of 5G began, the people of Bangladesh were blessed with 4G at the beginning of this year 2018 [12]. 4G is the fourth generation of broadband cellular network technology, following 3G. 4G network is up to 10 times faster than 3G network. 4G was made to replace 3G and it offers a connection that is more reliable and delivers much higher speeds [12]. The speed of 3G is between 144 kilobits to 2 megabits and the speed of 4G network is between 100 megabits to a max of 1 gigabit [13]. 5G mobile network is the next-generation standard for wireless communications—are scheduled to follow current 4G networks with vastly increased capacity, lower latency, and faster speeds. The speed of 5G will start from an astounding 1 gigabit to onwards [13]. With this high speed of network, 5G will open doors to new technology in the near future.

In the year 2020, the society will be a connected society. The IoT together with intelligence and incorporated sensor frameworks and in-home sensor networks will change the manner in which individuals lead their lives. To transfer movement information and IoT control directions, “Smart living” individuals will require steady and universal mobile connectivity to the network, in this way creating an “enormous reporting” uplink information stream. Moreover, in sectors of service delivery and industry operations, critical machine to machine communications will play a very crucial role.

When the amount of devices connected to the net passes tens or many billions within the returning decade, the offloading of networked knowledge on unaccredited bands can play a critical role in network load equalization, providing warranted bit rate services and a discount up to the mark sign. Hence, it’s vital that 5G can offer seamless compatibility with dense heterogeneous networks to satisfy the high demand of time period traffic, so finish users can expertise sleek connectivity to the network.

V. CONCLUSION

To conclude, the authors would like to say that, as the world is changing right before our eyes, we should definitely try to adapt to that. At the same time, it is important for us to advance in a steady pace. Too much haste might harm us in the long run if not in the short run. Deutsche Telekom CEO Timotheus Hoettges has estimated that the cost of providing 5G network in Europe will be $370 billion to $615 billion. For that to deploy or ensuring the 5G network in Bangladesh telecom operators must take massive investment in 5G. Therefore, my final verdict is that, we should fortify our existing technology to the fullest i.e. 4G and after proper testing and checking the feasibility we can hop on the 5G train eventually.

REFERENCES


Self-Perceived Employability of Undergraduate Students: Bangladesh Perspective

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Abstract – This study is based on undergraduate student’s perceptions on their employability. Though it is a western concept, but due to increased growth process and global competition; all other nations must look at the issues of employability. The research aimed to investigate the unique labor market composition in Bangladesh through reviewing literature, find the important factors affecting student’s perception, and provide suggestions to different stakeholders in relation to employability. Different international studies on the issues of employability has been taken into consideration, and used structured questionnaire for data collection. A questionnaire was designed based on the scale developed by Rothwell [1] with some sort of modifications for Bangladesh perspective. After data collection, they were analyzed by using factor analysis on SPSS 24. Through data reduction technique, four components were taken into consideration. Based on the results obtained, discussions were made with different implications for stakeholders involved; e.g.: students, their prospective employers, higher education institutions, and the government.

I. INTRODUCTION

Interest in the areas of employability has risen in the recent years due to changes in the labor markets globally. Though it was considered as a western concept, but nowadays it is essential for rising economies to look at the issues of employability for their own sustainability. This study aimed at examining Bangladeshi undergraduate student’s perception regarding their employability. A quantitative study was undertaken where structured questionnaire distributed to the participants.

Specific research questions involved in the study were:
RQ 1: What does existing research tell us about employability perceptions of the students.
RQ 2: What are the unique attributes of students and labor market in Bangladesh.
RQ 3: What are the factors that impact Bangladeshi student’s perceptions of their employability?
RQ 4: What are the implications of this research for Bangladeshi universities in curriculum development, for the government for policy development?
RQ 5: What are the implications of this research for the employers and graduates?

After data collection, they were analyzed by using factor analysis in SPSS 24. From the result it was found that, students perceive reputation of the university as most important, followed by their self-skill development, career direction, commitment of the university, and ambition. It was also found that unique cultural composition of Bangladesh played a vital role in shaping the perceptions of students regarding labor market situation and employability scenario.

It is suggested that, the issue of employability should be taken into proper consideration by the stakeholders involved, which can result in minimizing the gap in the existing mismatch between the unemployment and underemployment in Bangladesh.

II. LITERATURE REVIEW

This literature review aims to provide the theoretical basis for the rest of the study. It comprises the basic concepts of employability from different perspectives. This section sets the contexts for readers to understand the relationships between employability and skills, how the global context for graduate employment is changing, the way to measure employability.

Definitions and Categories of Employability

Although the concept of employability is not new, in the last three decades it has been the subject of growing interest due to increasingly challenging labor markets around the world, notably following extensive organisational downsizing and restructuring in many older Western economies in the 1990’s. Employability was seen as a shorter-term employment relationship [2], while emphasis was on employer’s responsibility to provide employees by emphasizing on learning and development, coaching, mentoring, and networking [3]. The concept of employability can be viewed from three different perspectives: a) Employability of the workforce, b) Employability as human resource strategy, c) Employability of individuals [4].

These three areas of work is connected with different perspectives. The first perspectives is connected with government policy, second perspective refers employability as an individual’s ability to get or retain a job, the last perspective is correlated with universities ability and willingness to provide graduate with employability skills [5]. Employability skills refer to the softer, more generic skills that students are expected to learn during their time in Higher Education beyond mere subject-specific skills and expertise [6]. Communication ability, time management, and willingness to work in team...
environment is considered as important employability skills [7].

The Changing Nature of Global Graduate Employment

If the labor market has no suitable employment in connection with an individual’s employability skills might result in dissatisfaction. This is prevalent in countries like UK and some other countries where economic instability and similar conditions resulted in less new job openings for graduates [8]. A study [9] revealed the fact that, the rate of unemployment is increasing in a rapid rate in Spain where simply having a degree from university does not necessarily guarantee employment.

A degree from the educational institutions has been regarded as a “passport to employment” in early days, but the concept of employability arisen from the second half of the 20th century [5]. In this connection, the concept of self-management has been emerged, rather than solely rely on organizations for career planning [10]. Perception of students regarding employability is often different from that of potential employers [7]. However, students own perception of their employability termed as self-perceived employability [11] helped to focus on different types of skills need to be acquired by individuals in order to succeed in their career.

It is often expected that universities prepared their graduates for entry level employability not as full-fledged practitioners. Mass participation in higher education and demand-supply disequilibrium in graduate labor market in some of the European countries and USA drawn public focus on employability, and universities are now more eager to include employability in education. University branding or reputation often impact individual’s future employability. The importance of personal contacts and networking for augmenting individual’s employability along with university reputation is being highly prioritized [12]. It is also essential for universities to prioritize on internships or placements so that students can build networks and personal contacts which is essential for their future employability. The universities should include employability in their curriculum.

Measuring Employability

The notion of employability can be seen in terms of individual attractiveness in the labor market which is essential to maintain and enhance with the time as the market is not offering the individuals long-term employment [11]. This study prioritized on the perception of what people believe their employment options are rather than employability as part of government policy, or part of the organization’s human resource strategy. They defined self-perceived employability as a “current assessment of one’s capacity to navigate the world of work in the future (especially short-term)”

Understanding the concept of self-perceived employability is essential for graduates in devising career direction, life design, and overall career development and management [12]. Employability can be measured as a ‘psycho-social construct’ that facilitated individuals to be flexible, which helps to adjust with transitions in a rapidly changing employment market [13].

A new dimension to self-perceived employability for undergraduates was incorporated [11] as the reputation or brand image of the university.

Employability and the University Sector in Bangladesh

The majority of the universities in Bangladesh (both public and private) run their business education developed in the western higher educational institutions particularly in the UK and USA [14].

A study was conducted among public and private university students [15], and found that; most opportunities for jobs are for business background students who are from private universities. This situation is more prevailing in banking sector than that of civil services, or multinational corporations. Moreover, the same study investigated that business owners and HR departments prefer business education more than that of general science, social science, and other similar disciplines.

Limited study has been conducted to ascertain generic competencies among graduates in Bangladesh. Some specific set of skills such as presentation, communication, problem solving, and analytical skills is crucial for augmenting opportunities for employability in Bangladesh [16]. Identification and assessment of graduate employability skills is crucial for universities in designing and developing new courses, redesigning the existing ones, and developing ongoing strategic relationships with the employers [17], [18].

The university education landscape in Bangladesh has seen a major changes in last two decades due to demographic pressure, session jam in public universities, a better student-teacher ratios, well established facilities, and a perception of good quality [17]. There is a gap exists in the perceptions of the employers and students perceptions regarding basic skills needed for employability [19]. The universities in Bangladesh should become more industry driven by designing and devising their academic curriculum based on the requirements of their diverse group of stakeholders [20].

The same study [20] found that, no rigorous study is yet conducted based on the perceptions of major stakeholders, the prospective employees or graduates. The National Skill Development Council of Bangladesh [21] commented that, “If the demand for skills is not understood then government, employers, workers, and other stakeholders cannot make informed decisions about what skills are required, what programs should be delivered, and where.”

In Bangladesh, corporate bodies emphasizes more on graduate’s exposure to corporate culture and analytical competence than on academic results [16]. Sustainability in job or career development was less emphasized in Bangladesh, where much emphasis is given on the abilities or attributes of the employees [22].
The mismatch between the number of educated graduates and number of graduates jobs available results in unemployment or underemployment. Structural inequalities along with poor standard of education, and concurrent operation of forces acting in the demand and supply side of the labor market compound the magnitude for which graduates become unemployed [23]. The same study also identified that, the environment and overall system of education in Bangladesh is producing some types of graduates who will not be fitted in the labor market. Giant recruiters restrict themselves in a limited number of universities [24]. It is evident from two widely browsed job sites in Bangladesh namely BD Jobs.com, and Chakri.com; large companies from telecom, garments and banking sector often targeted graduates from public universities and selected private universities like North South University, Brac University, Independent University, United International University. In a developing countries like Bangladesh, some universities lack customer focus which results in producing less qualified graduates [16]. The same study revealed the fact that, owner of the business firms believed that courses in the graduate level often not directly related to business.

While designing curriculum, it is essential to make a balance between functional areas in business with nontechnical and other transferable skills [25]. There is always a gap in Bangladeshi higher education institutions failing to meet the demand of the future employers where their student will apply for job. The education system in Bangladesh less occupied with apprenticeships programs, industrial training, and career counselling [26]. The teaching system in Bangladesh focused more on theoretical aspects of learning, while ignoring job oriented education and training. The situation is also changing slowly where a small number of business schools from private universities arranging campus placement events, job fair, and industry collaboration.

III. METHODOLOGY

Type of Research
The study is of empirical research in nature. Theoretical background sets the stage for numerical analysis. Simple and logical form has been used throughout the study for data interpretation [27].

Research Design and Data Analysis Tools:
The study used employability scale developed by Rothwell [1] in which the participants asked to respond in a 5-point likert scale which ranges from responses such as strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree. Rothwell [1] adapted some of the items from [28], [29]; and [30]. The structured questionnaire consists of 30 statements other than demographic information which address the perceptions of students regarding their employability. Some information on demography was collected for analysis which is essential for analysis purpose. Some of the items from the original questionnaire were excluded as it is not relevant in perspectives of Bangladesh. The questionnaire was broadly classified in three scales termed as, employability scale items, ambition scale items, and university scale items.

Participants:
The sample frame involves the undergraduate students from private universities in Bangladesh. The data collection involves targeting the students who are in their 3rd and 4th year of study. In total, the sample comprises 120 responses were collected, among which 100 were completed (N=100). For the purpose of comparison, some demographic data are taken into consideration; like respondent’s age, gender, year of study, and qualification level on entry.

IV. RESULTS

Some demographic data were collected through the use of questionnaire. It was revealed that, the students participated in the study with a mean age of 23 years. 47% of the participants reported were male, and 53% were female.

The survey respondents were from business studies background at their final year of study. 53% of them are from finance major, 37% from HRM, 8% from Accounting; and 2% from Marketing. Among the participants 65% have commerce background, 25% science, and 10% arts in their intermediary or college level of study. 74% of the respondents completed their Higher Secondary Certificate (HSC) study, while 25% done their A-Level from English medium backgrounds, and 1% from Alim (Religious background focused) under Madrasa Education Board. The mean score of 16-items employability scale was 3.91, where the mean score of ambition scale was at a modest level of 3.83, and for university commitment scale it was 4.16. Employability outliers were notably ‘There is generally a strong demand for graduates at the present time’ (mean 4.31), and ‘There are plenty of job vacancies in the geographical area where I am looking’ (mean 3.20). For the ambition scale the outliers were found at, ‘I want to be in a position to do mostly work which I really like’ (mean 4.30) and ‘What I do in the future is not really important’ (mean 2.66). For university commitment scale, the outliers were ‘I am proud to tell others that I am at this university’ (mean 4.43), and ‘I would have accepted almost any type of course offer in order to come to this university’ (mean 3.83).

The following study used Principal Component Analysis (PCA), where the original variables are transformed into a smaller set of linear combinations, by considering all the variance in all the variables used in the study. The 30 items of the employability scale were being subjected to study by using principal component analysis in SPSS version 24. Principal component analysis is statistically more sound, provide more accurate result, and simple to calculate and measure [31].
For the analysis purpose, the sample size taken is 100. By inspection of correlation matrix it was found the presence of many coefficients of .3 or above. From the output of data generated by SPSS, two statistical measures help me to assess whether a factor analysis is suitable or not. They are: Barlett’s test of sphericity, and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The appropriateness of factor analysis is measured by Barlett’s test of sphericity (p<.05) to be significant; and KMO index in a range of 0 to 1, with .6 as the minimum value [32], [33]. The KMO measure of sampling adequacy in this study found at .605, and Barlett’s test of Sphericity was at .000 means that factor analysis is appropriate in this study.

Two widely used techniques for the decision about the number of factors to retain is Kaiser’s criterion or eigenvalue rule, and Scree Test. Only factors with an eigenvalue of 1.0 or more are to be retained for further investigation [33]. In my study, 4 components got the eigenvalue of 1.0 or more.

The use of scree test was suggested, which measure involves plotting each eigenvalues based on the analysis and finding a point where the curve changes its direction and becomes horizontal [34]. In this study base on scree testing, I decided to take first 4 components for further investigation, because there is a clear break after the fourth component.

The next involves interpretation, where the factors are rotated. The process of rotation presents loading patterns in a way which makes the interpretation easier.

The final table we need to look at is the component matrix. For my analysis, I have taken items which loads quite strongly (above .4) for the first four components. Having specified a four-factor solution by using oblimin rotation, the four components taken into consideration respectively for 21.39, 9.00, 7.09, and 6.15 percent of the variance.
The table listed below presented the solution:

### Component Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I talk up this University to my friends as a great University to be at</td>
<td>.690</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My University has an outstanding reputation in My field(s) of study</td>
<td>.644</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am extremely glad I chose this University over others I was considering at the time I joined.</td>
<td>.625</td>
<td>-.415</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am proud to tell others that I am at this university</td>
<td>.617</td>
<td>-.446</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I really care about this University and its future</td>
<td>.612</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The status of this University is a significant asset to me in job seeking</td>
<td>.590</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would have accepted almost any type of course offer in order to come to this University</td>
<td>.581</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel I could get any job so long as my as my skills and experience are reasonably relevant</td>
<td>.556</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I regard myself as highly ambitious</td>
<td>.542</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A lot more people apply for my degree than there are places available</td>
<td>.518</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being at this University really inspires the best in me in the way of study performance</td>
<td>.515</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For me this is the best of all Universities to be a student at</td>
<td>.509</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The skills and abilities that I possess are what employers are looking for</td>
<td>.507</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am generally confident of success in job Interviews and selection events</td>
<td>.489</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My chosen subject(s) rank(s) highly in terms of social status</td>
<td>.478</td>
<td>-.473</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am satisfied with the progress I have made meeting my goals for the development of new skills</td>
<td>.474</td>
<td>.425</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is generally a strong demand for graduates at the present time</td>
<td>.419</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have clear goals for what I want to achieve in life</td>
<td>.539</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People in the career I am aiming for are in high demand in the external labor market</td>
<td>.504</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My degree is seen as leading to a specific career that is generally perceived as highly desirable</td>
<td>.452</td>
<td>.498</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employers specifically target this University in order to recruit individuals from my subject area(s)</td>
<td>.449</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can easily find out about opportunities in my chosen field</td>
<td>.748</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What I do in the future isn’t really important</td>
<td>.416</td>
<td>.429</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I regard my academic work as top priority</td>
<td>.522</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are plenty of job vacancies in the geographical area where I am looking</td>
<td>.467</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel it is urgent that I get on with my career development</td>
<td>.439</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I achieve high grades in relation to my studies</td>
<td>-.437</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis (a. 10 components extracted.

Again using oblimin rotation, four reasonably distinct components were identified. Results are presented in the table below:

### Pattern Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I really care about this University and its future</td>
<td>.759</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For me this is the best of all Universities to be a student at</td>
<td>.689</td>
<td>.521</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am proud to tell others that I am at this university</td>
<td>.681</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am extremely glad I chose this University over others I was considering at the time I joined.</td>
<td>.508</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My University has an outstanding reputation in My field(s) of study</td>
<td>.473</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have clear goals for what I want to achieve in life</td>
<td>.853</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am satisfied with the progress I have made meeting my goals for the development of new skills</td>
<td>.540</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My degree is seen as leading to a specific career that is generally perceived as highly desirable</td>
<td>.404</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel it is urgent that I get on with my career development</td>
<td>.805</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can easily find out about opportunities in my chosen field</td>
<td>.564</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would have accepted almost any type of course offer in order to come to this University</td>
<td>.555</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I regard myself as highly ambitious</td>
<td>.531</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I talk up this University to my friends as a great University to be at</td>
<td>.438</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I regard my academic work as top priority</td>
<td>-.868</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am generally confident of success in job Interviews and selection events</td>
<td>-.431</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis
The first component consists of 5 items from the original scale, 4 of which correspond with the university commitment and 1 with the employability scale developed by Rothwell [1]. These items related to the reputation the university had in the field of study, university’s brand image in the mind of students, competitiveness of the university, the status and credibility of the field of study; and demand of the graduate’s by the external labor market. The second component consists of 4 items; one from the employability scale, two from ambition scale, and one from university commitment scale developed by Rothwell [4]. Items found here relates to the specific career direction, student’s concern with career goals, development of self-skills by the graduates, and the linkage between study and performance.

Third component consists of 5 items, three of them corresponding to university commitment and two to ambition scale. These items relates to long term career planning by the students, about the opportunities they think they have, in relation to their ambition; and how the university delivers that. These items matched with the study of Rothwell [1] with a match to self-confidence and awareness of opportunities dimensions.

The fourth component consists of 2 items from the scale, both of them corresponding with the employability scale developed by Rothwell [1]. These items related to one’s personal belief and confidence in the abilities and skills to secure employment of his or her choice. But interestingly, these two items had negative scores on their part, means that students are not confident enough for success in job interviews and selection events and they regard academic work as less priority.

Reputation of the university seemed very important to the students as it resides on both 1st and 2nd component. In Bangladesh, the public university students are still having more priority than those of private university students. While searching two prominent job websites named as BDjobs.com and Chakri.com by the researcher, it was found that employers are looking for graduates form public universities and selected private universities. Another study [22] confirmed the fact of hiring foreign workers as well.

The highest positive individual loading (.853) the respondents placed on the item, ‘I have clear goals for what I want to achieve in life’.

All in all, student’s perception is heavily influenced by the perception of university’s brand reputation and strength more than anything that drives their perception about employability. The next important factors listed relates to status and credibility of the field of study, self-confidence in skills, demands in the external labor market, career direction, university commitment; and individual ambition.

V. DISCUSSION, SUGGESTIONS AND CONCLUSION

The research was conducted to investigate the Bangladeshi student’s perceptions of their employability. It also aimed to identify the unique attributes of graduate labor market in Bangladesh with a global comparison to employability scenario. Keeping all these in mind, a structured questionnaire was designed to measure the self-perceived employability of the students. From the results obtained, it was seen that, some results match with the existing literature, while some other contradict to the literature reviewed. Moreover, the study has some important implications for different stakeholders, such as for the higher education institutions, the students, and for the government.

Discussion:

The study used the scale developed by Rothwell and Arnold [11] where student’s self-perceived employability can be measured as one whole scale, or in different scales. The origin of self-perceived employability scale stems from UK by Rothwell and others [1], [4] where they developed scale for measuring undergraduate and graduate students’ perceptions regarding their self-employability. Another study [35] identified the importance of subject specific or technical skills, and developed a model of employability; where the components were categorised as learning for career development, academic knowledge, and emotional intelligence.

Another study [36] identified three measures of employability as input measures, perception measures, and outcome measures.

A number of subsequent studies have then tested to different cultural contexts such as Iran, Italy, South Africa, and Poland [9]. In Asian context, two such remarkable studies were done in Indonesia [37] and in Philippines [38].

The first components comprised in the study consists of items related to the reputation of the university, prospects of the field of study; and demand of the graduate’s by the external labor market. Reputation or brand image of the university was seen as highly important by the students [11]. The study [12] supported the same view, where emphasis placed on personal contacts and networking along with university reputation. The participants also viewed the prospects of the field of study as important factor. Prospects of the study field is essential in devising career direction for graduates, as well as their life design, and career development and management in general [11].

The second component comprised of items related to the development of self-skills by the graduates, and the linkage between study and performance. This view confirmed the skill sets as development of person’s asset, career management skill, presentation skill, and context-personal circumstances [36]. Universities in North America and some from Europe such as Denmark prioritize critical skills in their curriculum [39]. They believed that, graduate skills in Asian countries should be oriented to international perspectives.
It is also important to develop a flexible sense of self by the graduates in their study life. This could be developed by reward structure designed and offered by Higher Education Institutions (HEI).

Offering career guidance services by the HEI, facilitating on the job opportunities, and developing generic skills among the students make the students more adaptive marketable to the prospective employers [38].

Third component consists of items relates to long term career planning by the students, the opportunities they have; and how well the university delivers that. For long term career planning, it is required by the students to obtain information regarding the labor market situation. But, it is often difficult to get access to such information and as result of this there is a mismatch between the qualification of the graduates and the type of job they wish to join [40].

In terms of the opportunities the graduates have, business owners and HR departments in Bangladesh prefer business background students more than students from other disciplines [15].

The formation of ‘business advisory board’ for redesign of course curricula, using local examples matched with the module content, case analysis based on local industry, and inclusion of more updated and demanding subjects in major semesters in the course curricula can enhance the graduate’s employment opportunities [20].

Two items comprised the fourth component which had negative scores on their part, means that students are less confident for success and they regard academic work as less priority. More emphasis given on attribute of the graduates rather than sustainability or career development which results in such mismatch [22]. Moreover, giant recruiters restrict themselves in limited number of universities which results in unemployment or underemployment [24].

Male students in comparison scored higher in self-perceived employability scale than female students [9]. There is potential for me to conduct further study in this field by making the correlation between demographic variables and different employability scale.

My study is focused on the perception of employability of the undergraduate students from business studies background, so further studies can be undertaken by considering the students from other background as well.

Major Findings:

After analysing the data statistically, the study contributed to the following findings:

1. Reputation or the brand image of the university seemed the most important factor to the students for their employment opportunities.
2. Students themselves are also concerned about their career goals, skills needed; and the linkage between study and performance.
3. Students scored negative in some factors as they are less confident of success and regard academic work as less priority.
4. Some participants believe that, public universities students have given privilege over them in recruitment and selection.
5. Highest value students placed on the item as ‘I have clear goals for what I want to achieve in life’.
6. Often there is a mismatch between the skills required and jobs offered.
7. Academic training opportunities are scarce for the graduates which results in unemployment or underemployment.
8. Some of the participants want to work within their own cities which restrict their employment options.
9. Supply of foreign workers is viewed as threat by the graduates.
10. The ratio of jobs available and applications lodged suggests the scarcity of jobs availability.

Suggestions/ Implication for Different Stakeholders:

The study has multiple recommendations for different stakeholders involved. Government, business organization, and HEI have to work in collaboration for preparing the students as skilled and productive soon after they graduate. The following section implies key recommendations for the students, HEIs, employers, and government:

1. The HEI should design their course curricula and pedagogy based on industry needs by giving special emphasis on case studies, presentation skills, and group discussions to make their graduates from any discipline employable.
2. The schooling system in Bangladesh should focus more on building foundation skills, improved teaching methods, and job-specific education and training.
3. Inclusion of marketable courses in the course curricula by the Higher Education Institutions (HEI) or introduce short courses to minimize quantitative mismatches in labor supply and demand, and make the graduates more employable [38].
4. It is also required by the universities to encourage their graduates with extracurricular activities, which in turn results in the development of self-employability.
5. It is recommended that, government should undertake international benchmarking for HEIs to upgrade policies by following competency-based curricula. They can do this by inclusion of experts in the technical panels, ensuring the use of technology as a supplement to classroom based teaching and learning, and arranging industry summits on a regular basis [38]. Recently, Bangladesh government undertake faculty development project in collaboration with World Bank known as Institutional Quality Assurance Cell (IQAC).
6. Government of Bangladesh should prioritize the importance of national higher research education agenda, and technology commercialization and corporatization as a means to response to the needs to the labor market by the HEIs. Moreover, the government policies should include student financial assistance program targeting the financially disadvantaged students on the basis of need and merit.
7. Employers should establish linkages with HEIs so that study curriculum is being updated with recent trends. They also need to facilitate more internship and placement
opportunities for the students on the basis of merit and skills.
8. Focus should be changed from male domination in society, and ensure incentives for female participation in training, and hiring.
9. Build partnerships with those sectors that are not commonly sought by students as their career direction; such as Non-government/profit organizations, agro based organizations.
10. Ministry of Education (MoE) should conduct periodical study on the statistics of employment and unemployment of new graduates and assist government agencies updated so that they can address the issue of unemployment properly.

Limitations of the Study:

The study is not free from criticism though it took several measures to prevent the occurrence of such instances. First, the study is focused in a particular city in Bangladesh, so it might failed to incorporate the student’s view from the country in general. Second, a little research was being done in Bangladesh in regard to employability and graduate labor market situations. Lack of information direct the study to seek information from other cultures which is similar to Bangladeshi culture. Third, some limitations to the study arise from the choice of sample as the sample size was 100 due to several limitations. Fourth, each of the components used in the employability scale may be a subject to further independent research in the future. Finally, to some extent the researcher’s previous work experience with the undergraduate students, and the Asian ethnicity might influence the research in some of the stages. But, adequate literature review, and use of reasoning and analogy helped to minimize researcher bias.

Conclusions:

Beyond the limitations, this research has potential for contributing to further research in the field of employability. The perspectives of undergraduate students, Higher education institutions, employers, and government need to be sought together to provide a collaborative view of employability factors. It is evident from most recent study, further studies on self-perceived employability should be conducted in the future, in different student groups, universities, concentration areas, cities, and beyond national borders.

The scale used in the study can be applied within the university environment and results can be utilized for student guidance, career counselling, and self-assessment instrument for measuring performance. The findings contributed to the study of self-perceived employability in an emerging economy perspective. The students from undergraduate level can now better understand what it takes for them to prepare for the job market. They also better able to understand the perception of the employers and concomitant with that develop their skills in this regard.

This study can assist the employers to collaborate with HEIs to develop course curricula based on industry needs, and facilitates internship and placement for students. The HEIs could be benefited from this study by developing understanding for restructuring policies regarding education, devising marketable courses, developing skills for the graduates, and facilitate opportunities for students to augment their employability potential.

The study has also important implications for the government. They need to increase spending on education sector, observing the work of the agencies involved with education sector, international benchmarking of HEIs to upgrade policies by following competency-based curricula.

The study is focused only in a particular city in Bangladesh, further studies can examine the self-perceived employability of undergraduate or graduates students in other cities, or the country with similar cultural background.

Potential for Future Research:

This paper can contribute to further study with a wider research aims. This study covered the students from business background, further investigation can be made to other subject areas, such as arts or science-based subjects. The same questionnaire can be used for different major subjects; such as marketing, accounting, finance, HRM and can make comparative study among these subject areas. Further studies on self-perceived employability should be conducted in the future, in different student groups, universities, cities, and beyond national borders. There is also scope for longitudinal studies exist; whether student’s perception on employability changes over time.

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Consumer Perceptions and Expectations of Service Quality: An Assessment of the SERVQUAL Dimensions at Private Financial Institution

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Abstract – Service quality is very important to attract and retain customers in today's competitive business environment. Using the SERVQUAL model this research evaluates customers’ expectations against their perceptions of the service quality in a private financial institute at Dhaka city of Bangladesh. To measure respondent’s satisfaction level with provided service quality of financial institutes. 50 clients were interviewed where the sample were selected no-randomly. The results showed that respondents’ expectation and perception level markedly varied with the service provided by a financial institute. However, SERVQUAL tangible dimension indicated a small gap between expectation and perception level. The study concluded that level of customers’ expectations on the service quality from any private financial service providers was higher than they perceived earlier. Customer services of private financial institutes should improve further through high quality services to achieve their optimum level of businesses.

Keywords – Customer, expectation, perception, satisfaction and SERVQUAL.

I. INTRODUCTION

In today’s competitive business environment, service quality is very important to attract and retain customers as customers derive their perceptions of service quality on the levels of satisfaction they experience with a particular business. Businesses need to be able to satisfy customers and meet their expectations of service quality in order to gain competitive advantage [1]. Thus marketers need to continually assess customers’ expectations of service quality in order to avoid customer dissatisfaction [2]. A service can be offered by any business, whose main aim is to meet or satisfy customer needs. However, the problem that customer’s expectation of service quality is generally anticipated with the acceptable levels of service quality in the service providers like private financial institution. Using the SERVQUAL model, customers’ expectations against their perceptions of this kind of service quality at any financial institute like bank can be evaluated.

“SERVQUAL” is a service research instrument that measure customer satisfaction with various aspects of service quality [3]. SERVQUAL is a frequently used approach to measure service quality which compares customers’ expectations before a service encounter and their perceptions of the actual service delivered [4]. It has five generic dimensions: Reliability to perform the promised service dependably and accurately; Responsiveness to provide prompt service; Empathy for caring and individualized attention to customers; Assurance of knowledge and courtesy of employees and their ability to inspire trust and confidence; and Tangibles includes physical facilities, equipment and appearance of personnel [5]. Other than SERVQUAL model, the “GAP” model of service quality also offers an integrated view of the consumer-company relationship [2].

The scope of this study is confined to the Dhaka City of Bangladesh where survey was conducted on the customers who already open an account in any form at the private financial institute (bank) and do transaction in different branches of the same bank. In Bangladesh not much study have been conducted to measure the banking service quality SERVQUAL model. The study information could assist in improving the service quality of banking services by identifying the gaps of service quality. Therefore, the study aims to measure the customers’ expectation levels of service quality in the private financial institute (bank) and their perceptions of the service quality, to determine the gap between customers’ expectations and perceptions on the same service quality including the factors that contributed to those gaps.

II. METHODOLOGY

This is a descriptive type of research that briefly revealed the gaps between levels of customers’ expectation and perception on service quality in the bank. The target population was different types of male female bank account holders. Primary and Secondary data was required for the analysis. Primary data was collected through face-to-face interview using structured pretested questionnaire. The survey was conducted based on Non-Probability Sampling techniques. Fifty customers from the bank have been chosen conveniently for interview. The survey was conducted as the part of an assignment that fulfilled the partial requirement of the Master’s level course. The natures of questions used were mainly simple dichotomy with few determinant-choice questions and used level measuring rating scale. Some secondary data was collected from several published materials. Through SERVQUAL model, several statements measure the performance across five dimensions, using a five-point Likert scale measuring both customer expectations and perceptions [6]. Using SPSS software, analyses were done with different types of statistical tools including some mathematical calculation. Results are presented through tables, graphs and charts.
III. RESULTS

Table I
SURVEY RESPONDENT’S PROFILE

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>22</td>
<td>44.0</td>
</tr>
<tr>
<td>Business</td>
<td>10</td>
<td>20.0</td>
</tr>
<tr>
<td>Student</td>
<td>12</td>
<td>24.0</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>12.0</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>34</td>
<td>68.0</td>
</tr>
<tr>
<td>Female</td>
<td>16</td>
<td>32.0</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 25</td>
<td>9</td>
<td>18.0</td>
</tr>
<tr>
<td>25-35</td>
<td>12</td>
<td>24.0</td>
</tr>
<tr>
<td>36-45</td>
<td>19</td>
<td>38.0</td>
</tr>
<tr>
<td>46-50</td>
<td>4</td>
<td>8.0</td>
</tr>
<tr>
<td>&gt; 50</td>
<td>6</td>
<td>12.0</td>
</tr>
<tr>
<td>Account Type*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>20</td>
<td>40.0</td>
</tr>
<tr>
<td>Savings</td>
<td>34</td>
<td>68.0</td>
</tr>
<tr>
<td>Fixed Deposit</td>
<td>20</td>
<td>40.0</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Total=50; * Multiple responses

It can be seen in the Table I that among 50 respondents, 44.0% are service holder, about quarter (24.0%) of them are students, 20.0% are doing business and rest 12.0% are involved with other earning activities. In the same table, it can be seen that more than two-thirds (68.0%) are male and rest 32.0% are female respondents. About 38.0% respondents are in the middle age group (36-45 years) which followed by near to one-quarters (24.0%) of the respondents are in the age ranges from 25 to 35 years, 18.0% respondents are in the young age group, i.e. under 25 years of age. About 12.0% respondents are above 50 years of age and another 8.0% are in the group of 46-50 years. The respondent holds multiple types of accounts. Majority (68.0%) of the respondents have Savings account, which is followed by Current and Fixed deposit type of account (each 40.0%). (Table I).

Table II shows the respondents’ level of expectation and perception in regard to five different SERVQUAL dimensions considering various statements. In reliability dimension, majority (highest 84% and lowest 60%) of the respondents expected that bank keep promise as usual, problem will be solved sincerely, perform services from the beginning, keep promises like excellent bank and maintain error free records. But respondent’s perceived reliability dimension varied with all agreeable statements and prevailing lower proportion (highest 82% and lowest 46%). This is revealed from the same table that respondent’s expectation and perceived level varied widely (higher expectation vs. lower perception) with all agreeable statements under responsiveness, empathy, assurance and tangible dimensions. The proportion of these variation ranges from 60% to 80%.

The expected and perceived SERVQUAL examines different statements through five dimensions of service quality: Reliability, Responsiveness Assurance, Empathy and Tangible. Table II analyzed the customers’ (respondents’) expectation and perception towards the services levels of bank on the scale 1 to 5 with 22 statements in five dimensions. In Table III, the Gap Score for each dimension is calculated by subtracting the average perception score from the average expectation score. Reliability in the service quality dimensions means the ability to perform the services accurately and dependably. Reliability dimension shows that the average gap ranges from 0.8 to 1.30 which implies that the customer is not getting the service accurately from the bank and dependably enough to match their expectation. The service provided is below their expectation and thus making them much dissatisfied. The role of Responsiveness is that the willingness to help customers and provide a prompt service, which shows that the average gap ranges from 0.9 to 1.2. The bank has a fair lot to do to improve the service provided in these dimensional aspects to meet the customers’ expectation and satisfy their customers. Empathy contains the issues of access, communication and understanding of the customer. The average gap shows that the variation (0.6 to 1.2) is still existing which indicates the caring individual attention given is not meeting even the minimum expectation by the employees of bank. Assurance is a combination of competence, courtesy, credibility and security. The result shows that the lowest and highest gap are 0.8 and 1.1, respectively. This implies that the knowledge and courtesy of the bank’s employees and their ability to convey trust and confidence are not up to the mark. The customers do not feel adequately confident and trust the bank to provide service to their expectation. The Tangible part of the service quality dimension is the appearance of physical facilities, equipment, personnel and information materials. The gap between average scores of expectation and perception are also pronounced (0.9 to 1.1). This implies that there is gap in the appearance of the bank visually. Customer’s highest expectation was that the bank will be equipped and furnished with modern equipment. The result in the Fig.1 indicates that the overall average expectation for reliability dimension is 4.0 and perception is 3.0. The average gap for reliability dimension between expectation and perception is 1.0. Similarly, these gaps are almost same (nearly 1.0) for other dimensions; responsiveness (3.9 and 2.8), empathy (3.9 and 3.0), assurance (3.9 and 3.0), and tangible (3.9 and 2.9). On an average total score of five SERVQUAL dimensions according to customers’ (respondents) expectation and perception levels examined through various statements. The results indicate a total expectation score of 3.9 and perception score of 2.9. There is a gap of -0.98 between expectation and perception. From above summary, it is seen that bank is consistently failing to meet customer (as per responses) expectation in every dimension. As a result, customers may get dissatisfied with the service of the banks in near future.
TABLE II
EXPECTATION AND PERCEPTION ON SERVQUAL DIMENSIONS

<table>
<thead>
<tr>
<th>Statement (n=50)</th>
<th>Expectation (%)</th>
<th>Perceived (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree</td>
<td>Neutral</td>
</tr>
<tr>
<td><strong>Reliability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Keep promise as usual</td>
<td>88.0</td>
<td>8.0</td>
</tr>
<tr>
<td>2. Solve problem sincerely</td>
<td>86.0</td>
<td>14.0</td>
</tr>
<tr>
<td>3. Perform service from beginning</td>
<td>84.0</td>
<td>12.0</td>
</tr>
<tr>
<td>4. Keep promise as excellent banks</td>
<td>76.0</td>
<td>18.0</td>
</tr>
<tr>
<td>5. Error free records as excellent banks</td>
<td>60.0</td>
<td>20.0</td>
</tr>
<tr>
<td><strong>Responsiveness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Inform exact services time</td>
<td>80.0</td>
<td>14.0</td>
</tr>
<tr>
<td>2. Prompt service</td>
<td>74.0</td>
<td>22.0</td>
</tr>
<tr>
<td>3. Constant helping attitude</td>
<td>60.0</td>
<td>32.0</td>
</tr>
<tr>
<td>4. Never show busyness to respond</td>
<td>62.0</td>
<td>28.0</td>
</tr>
<tr>
<td><strong>Empathy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Give individual attention</td>
<td>74.0</td>
<td>16.0</td>
</tr>
<tr>
<td>2. Customers’ convenient operating hours</td>
<td>74.0</td>
<td>20.0</td>
</tr>
<tr>
<td>3. Give customers personal service</td>
<td>74.0</td>
<td>16.0</td>
</tr>
<tr>
<td>4. Customers’ best interest at heart</td>
<td>70.0</td>
<td>20.0</td>
</tr>
<tr>
<td>5. Understand customers’ specific needs</td>
<td>70.0</td>
<td>18.0</td>
</tr>
<tr>
<td><strong>Assurances</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Confidence in employees’ behavior</td>
<td>80.0</td>
<td>12.0</td>
</tr>
<tr>
<td>2. Feel safe transactions</td>
<td>78.0</td>
<td>16.0</td>
</tr>
<tr>
<td>3. Consistently courteous to customers</td>
<td>68.0</td>
<td>24.0</td>
</tr>
<tr>
<td>4. Able to answer customers’ questions</td>
<td>66.0</td>
<td>22.0</td>
</tr>
<tr>
<td><strong>Tangible</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Have modern equipment</td>
<td>78.0</td>
<td>18.0</td>
</tr>
<tr>
<td>2. Appealing physical facilities</td>
<td>80.0</td>
<td>16.0</td>
</tr>
<tr>
<td>3. Neat appearance of employees</td>
<td>76.0</td>
<td>14.0</td>
</tr>
<tr>
<td>4. Appealing promotional materials</td>
<td>60.0</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Note: Five points scale (Strongly agree to Strongly disagree) merged into 3 (Agree, Neutral and Disagree)

TABLE III
GAP ON AVERAGE DIMENSION SCORE OF EXPECTATION AND PERCEPTION

<table>
<thead>
<tr>
<th>SERVQUAL Dimension</th>
<th>S. No.</th>
<th>Avg. Score, E</th>
<th>Avg. Score, P</th>
<th>Gap (E-P)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reliability</strong></td>
<td>1</td>
<td>4.3</td>
<td>3.2</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4.2</td>
<td>2.9</td>
<td>1.30</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>4.1</td>
<td>2.9</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3.9</td>
<td>2.7</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3.5</td>
<td>2.7</td>
<td>0.80</td>
</tr>
<tr>
<td><strong>Responsiveness</strong></td>
<td>1</td>
<td>4.1</td>
<td>3.1</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3.9</td>
<td>3.0</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3.7</td>
<td>2.5</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3.8</td>
<td>2.7</td>
<td>1.10</td>
</tr>
<tr>
<td><strong>Empathy</strong></td>
<td>1</td>
<td>4.1</td>
<td>2.9</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4.1</td>
<td>3.5</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3.9</td>
<td>2.9</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3.7</td>
<td>2.9</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3.7</td>
<td>2.7</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Assurances</strong></td>
<td>1</td>
<td>4.1</td>
<td>3.0</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4.0</td>
<td>3.2</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3.9</td>
<td>3.0</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3.7</td>
<td>2.8</td>
<td>0.90</td>
</tr>
<tr>
<td><strong>Tangible</strong></td>
<td>1</td>
<td>4.1</td>
<td>3.1</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4.0</td>
<td>2.9</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3.9</td>
<td>2.8</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3.7</td>
<td>2.8</td>
<td>0.90</td>
</tr>
</tbody>
</table>

Note: S. No. =Statement number; E=Expectation, P=Perception

Fig.1. Average total score of SERVQUAL dimension.

IV. DISCUSSIONS

Purpose of the study was to assess consumer perceptions and expectations of service quality of banks. A total of 50 respondents were interviewed in different
branches of a selected bank located at Dhaka in Bangladesh. SERVQUAL method was used to measure the gap between expectations of the clients and their perception after receiving the services. Twenty two service quality related questions were administered through questionnaire which belongs to five major dimensions. The sample respondents respond to each question in five-point Likert scale.

It was found that clients’ expectations were comparatively higher in terms of keeping promises and solving problem sincerely. Other important indicators where clients’ expectations were higher are: bank will provide services from beginning, bank will inform exact service time, employees will give individual attention to clients, the operating hour will be convenient for the clients, the bank will have modern equipment. This is also observed that clients’ expectation regarding error free record is the least, which implies that clients are suspicious about banks’ ability to maintain error free records. At the dimension level, this was observed that the clients value almost equal expectations in all five dimensions.

By examining the perception of clients after receiving actual services from bank, this is found that there are gaps in expectations and perceptions in all indicators with varying degrees. Among all twenty two indicators, operating hour for the customers were found to meet highest satisfactions from the customers. Also a large portion of the respondents perceived that banks keep their promises and also they feel safe about the bank transactions. The highest gaps between expectations and perception are observed in terms of sincere problem solving by the bank employees. Clients’ perception regarding helping attitude of the bank is found to be lowest.

From the SERVQUAL analysis this study identified various weaknesses in the service provided by the financial institutions in Bangladesh. To improve the quality of service, the financial institutions need to focus on the areas where clients’ perceptions are low and where the gap between expectations and perceptions are large. If the minimum level of customer satisfaction can be maintained by these financial institutes, their customers will not dissatisfy and retain longer time with bank services. Also this can be concluded that acceptable levels of service quality at the bank is still higher as indicated through the gaps between respondents’ expectation and perceived level. The private financial institute like the bank should design service standards that promote reliability to customers, consistency in service delivery and give more responsive understanding to their customers and their level of service quality should be improved further.

V. CONCLUSIONS

It can be concluded from the study results that level of respondents’ expectations on the service quality in the bank were higher than they perceived for the same. The respondents who are maintaining different transactions with the financial institution had expectation towards quality services were not in the acceptable levels compared to other excellent banks. Usually a respondent expected a high level of service quality from the bank, if not met that expectation may result respondents’ dissatisfaction. Under these circumstances, the private financial institutes may lose their customers in the competitive market. The service provided by the private financial institutes, however, should be maintained at minimum level of customers’ expectations whatever they

REFERENCES

Measuring Buying Behavior of Online Shoppers

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Paper ID: ICBM-19-0513

Abstract – The aim of this study is to measure the buying behavior of internet shoppers. With the recent and forecasted high growth of e-commerce, it has the potential to measure the behavior of the online shoppers. The study has observed 390 respondent’s data. The convenience sampling used during data collection. Data were analyzed using SPSS and Excel. The results showed Bangladeshi online shoppers were predominantly males, not necessarily young and highly educated. The issue of saving time was found to be the most important factor that motivated Bangladeshi consumer adoption of online shopping. Main barriers to online shopping were the perception of risks, computer and technological skills and traditional cash-carry transaction culture. The study tries to reveal the customers intention to shop from online. The findings disclosed that there’s no important distinction in perspective towards online shopping among cluster. However, there’s a major distinction in attitude towards online shopping among income group. The analysis finds conjointly showed that there’s no important distinction in attitude towards online shopping among occupation cluster. Regression analysis was used to assess the relationship between independent variables such as perceived usefulness, perceived ease of use, attitude, perceived risk, trust, website design, and vendor’s characteristics. statistics shows 67.4% of the total variation in intention to continue online shopping can be explained by the regression model by the variation in all the independent variables mentioned above. The findings revealed that respondents are not facing any trouble while completing transaction over website. This study also indicated that the surveyed people would like to buy product online from vendor who has positive evaluation and recognition from online buyers. There is a significant relationship between product perception and attitude towards online shopping among the respondents and there is also a significant relationship between customers’ service and attitude towards online shopping among the respondents. Lastly, this result showed that there is no significant relationship between consumers’ risk and attitude toward online shopping among the respondents. Further study should explore other factors that influence consumers’ attitude toward online shopping with a broader range of population and high representative sampling method.

Keywords – Online Shopping, Buying Behavior, E-commerce.

I. INTRODUCTION

Internet makes life simple and innovative. People do business on-line and trade has become simpler and quick because of this. Internet provides new ways to promote business. Website becomes the essence of on-line business to show their services and product. Internet gathers all competitors and shoppers in one place. It brings new lane to market, advertise products and services in market (Barry Silverstein, 2002, p. 3). With growing trend of online shoppers, it is obvious to measure the buying behavior of internet shoppers. “Consumer behavior is the study of people, groups, or organizations and the processes they use to select, secure, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes wear the buyer and society.” (Kuester, 2012). With the reference of on top of cite; shopper behavior of each individual is completely different from different reckoning on shopping for selections that is influenced by shopping for habits and selections that area unit turn tampered by psychological and social drivers that have an effect on purchase decision process. (Brassington, F. and Pettitt, S., 2000) “We’re not aware of changing our minds even when we do change our minds. And the majority, after they change their minds, reconstruct their past opinion — they believe they always thought that.” (KEYS, 2011). TAM was applied to assess owners/managers intention to adopt webbased supply chain management (Choong, 2003). (Chuttur, 2009). Online shopping in India is significantly affected by various Demographic factors like age, gender, marital status, family size and income. The results of the study could be further used by the researchers and practitioners for conducting future studies in the similar area. (Dr. Gagandeep Nagra, June 2013). Namita Bhandari & Preeti Kaushal revealed that the factors like trust, information, convenience, experience, effortless shopping, and bargain because of which consumers do online shopping. (Kaushal, July August 2013). Online shopping in India is significantly affected by various Demographic factors like age, gender, marital status, family size and income. (Richa, 2012)

Objectives of the study:
The main objective of the study is to measure the behavior of online shoppers. The more specific objective of the study is to evaluate the customers intentions to shop online.
II. METHODOLOGY

This study is an empirical in nature. Quantitative method mainly used in this study while field survey used as a main technique for data collection. As the study about measuring online shoppers buying behavior, thus people who do online shopping were considered as population of the study.

Sample Design
The study has observed 390 respondents’ data from diversified age, gender and working-class group.

Collection of Data
The sample was selected using non-random opportunity sampling technique (purposive). In this study, structured questionnaire was used through scheduled interview to collect primary data from the respondents while secondary data like books, thesis papers, articles, reports etc. also used.

Instrument:
For this research study, questionnaire was designed for evaluating online shoppers buying behavior. There were 38 items at this instrument, 8 related with personal information, and 30 items related with Internet shoppers’ attitude are on a series five-point Likert-scale. (5=strongly disagree and 1=strongly agree). Besides these, the study had evaluated the frequency of buying by 5 point scale Just ones, Rarely, Sometimes, Frequently, Very Frequently.

Data Analysis:
In this study, quantitative research methods (frequencies, t-test, and regression analysis) were used in order to investigate the research problems that effect on internet shoppers. Questionnaire as survey was designed to get the online shoppers buying behavior. Descriptive statistics like frequency table, mean and various kinds of graphs have been used to analyze data efficiently through SPSS

Research hypotheses:
H1: Using the Internet for shopping helps me to make better purchase decisions.
H2: Overall, I find using the Internet for shopping useful
H3: It is easier to use the Internet to find products that I want to buy.
H4: I found my visit to online shopping website pleasant.
H5: It is hard to judge the quality of merchandise online.
H6: I believe that online shopping website can protect my privacy.
H7: Online shopping website provides in-depth information about product.
H8: I would like to buy product online from vendor who has positive evaluation and recognition from online buyers.
H9: It is quick and easy to complete transaction on online shopping through website.
H10: I intend to continue using online shopping.

III. RESULTS

Analysis & Findings:
The study has observed 390 respondents. Out of which 56.15% respondents are male and remaining 43.85% are female. Data have been collected from diverse age group. 38.21% of the respondents belong to 18-25 age group, 29.49 % of the respondents belong to 26-35 age group, 20% of the respondents belong to 36-45 age group, 9.74% of the respondents belong to 46-55 age group, the remaining 2.56 % belong to above 55 age group.

In case of educational status of respondents, data shows diversity. Data have been collected from secondary level students to post graduate level students. Out of the diversity highest respondents were graduate students (50%).

<table>
<thead>
<tr>
<th>Education</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>26</td>
<td>6.7</td>
<td>6.7</td>
<td>6.7</td>
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<tr>
<td>College</td>
<td>26</td>
<td>6.7</td>
<td>6.7</td>
<td>13.3</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>26</td>
<td>6.7</td>
<td>6.7</td>
<td>20.0</td>
</tr>
<tr>
<td>Graduate</td>
<td>195</td>
<td>50.0</td>
<td>50.0</td>
<td>70.0</td>
</tr>
<tr>
<td>Post Graduate</td>
<td>117</td>
<td>30.0</td>
<td>30.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>390</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The study has tried to collect data from diversified working classes. 40% of the respondents are students, 30% of the respondents are service holder, 20% of the respondents are doing business, and the remaining 10% of the respondents are house wife.

An obvious benchmark question to start with is How frequently did you shop from online last month?. 40% of the respondents replied that they shopped just ones during last month. 46.7% of the respondents replied that they shopped 2-4 times during last month.

How frequently did you shop from online last month?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just ones</td>
<td>156</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>2-4 times</td>
<td>182</td>
<td>46.7</td>
<td>86.7</td>
</tr>
<tr>
<td>5-10 times</td>
<td>26</td>
<td>6.7</td>
<td>93.3</td>
</tr>
<tr>
<td>More than 10 times</td>
<td>26</td>
<td>6.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>390</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In case of payment method, 70% of the respondents prefer cash on delivery payment method, 14.87% prefer debit card, and 10% prefer credit card.

Majority of the respondents (60%) prefer to shop over mobile devices.

RELIABILITY
The reliability test was performed to check reliability of scale and Cronbach’s alpha is 0.970 which indicates a high level of internal consistency for scale and can be used with other statistical procedure for further investigation.

Hypothesis test:
The study has observed some underlying assumptions regarding online shoppers’ perception about online shopping. From all of the assumptions, first one is H1: “Using the Internet for shopping helps me to make better purchase decisions.”. The observed frequency shows the mean value is 4.0256, which mean most of the surveyed respondents agreed with the statement. To measure this hypothesis the study has observed one sample t test. The calculated statistics shows that the significance two tailed value is .568 which is inside the acceptance region. So, the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may assume that at 0.05 significance level; Internet shopping help respondents to make better purchase decisions.

H2: “Overall, I find using the Internet for shopping useful”. The observed frequency shows the mean value is 4.046, which mean most of the respondents agreed with the statement. The calculated statistics shows that the significance two tailed value is .304 which is inside the acceptance region. So, the null hypothesis should be
accepted and alternative hypothesis should be rejected. And it may assume that at 0.05 significance level; Overall respondents found online shopping useful.

H3: “It is easier to use the Internet to find products that I want to buy.” The calculated statistics shows that the significance two tailed value is .020 which is outside the acceptance region. So the null hypothesis should be rejected and alternative hypothesis should be accepted. And it may assume that at 0.05 significance level; It is not easier to use the Internet to find products that respondents want to buy.

H4: I found my visit to online shopping website pleasant. The calculated statistics shows that the significance two tailed value is .612 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may assume that at 0.05 significance level; Respondents found their visit to online shopping website pleasant.

H5: It is hard to judge the quality of merchandise online. The calculated statistics shows that the significance two tailed value is .783 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may assume that It is hard to judge the quality of merchandise online.

H6: I believe that online shopping website can protect my privacy. The calculated statistics shows that the significance two tailed value is .569 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may assume that at 0.05 significance level; online shopping website can protect privacy.

H7: Online shopping website provides in-depth information about product. The calculated statistics shows that the significance two tailed value is .002 which is inside the acceptance region. So the null hypothesis should be rejected. And it may assume that at 0.05 significance level; Online shopping website provides in-depth information about product.

H8: I would like to buy product online from vendor who has positive evaluation and recognition from online buyers. The calculated statistics shows that the significance two tailed value is .329 which is inside the acceptance region. So, the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may assume that online shoppers would like to buy product online from vendor who has positive evaluation and recognition from online buyers.

H9: It is quick and easy to complete transaction on online shopping through website. The calculated statistics shows that the significance two tailed value is .783 which is inside the acceptance region. So, the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may assume that It is quick and easy to complete transaction on online shopping through website.

H10: I intend to continue using online shopping. The calculated statistics shows that the significance two tailed value is .424 which is inside the acceptance region. So, the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may assume that respondents intend to continue using online shopping.

Regression Analysis of factors affecting Online shopping: To measure the factors online shopping, the study has examined some predictors like perceived usefulness, perceived ease of use, attitude, perceived risk, trust, website design, and vendor’s characteristics. The calculated statistics shows 67.4% of the total variation in intention to continue online shopping can be explained by the regression model by the variation in all the independent variables mentioned above.

### Model Summary

<table>
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<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.821a</td>
<td>.674</td>
<td>.657</td>
<td>.51864</td>
</tr>
</tbody>
</table>

There are some factors which are highly significant with the intention to continue online shopping. I found my visit to online shopping website pleasant (.000), I believe that online shopping website can protect my privacy (.002), I would like to buy product online from vendor who has positive evaluation and recognition from online buyers (.002).

### IV. DISCUSSION

After analyzing the data, the study has found some key findings about the customers intentions to shopping from online.

- Majority of the respondents agree that internet shopping help them to make better purchase decisions.
- Most of the respondents found using the Internet for shopping useful for them.
- The respondent agree that they have pleasant website in online shopping.
- It is hard to judge the quality of merchandise online.
- Higher percentage of the respondents believe that online shopping website can protect their privacy.
- The surveyed people would like to buy product online from vendor who has positive evaluation and recognition from online buyers.
- The respondents also stated that they are not facing any trouble while completing transaction over website.
- The study has also revealed that the perceived usefulness, perceived ease of use, attitude, perceived risk, trust, website design, and vendor’s characteristics have direct impact on customers intentions to shopping from online.

**Recommendations:**
As more and more people are involved with online shopping, so it brings both opportunity and challenges for business organizations. Customers' attitude depends on various factors. So, it would be crucial for business organizations to consider those factors. The study has revealed that the vendors' characteristics play a vital role in customers' intention to continue online shopping. For that, vendor should well aware how they are approaching their customers.

V. CONCLUSION

The objective of the research is to measure the behavior of online shoppers. The study revealed that factors like perceived ease of use, vendor's characteristics, perceived usefulness, website design are important factors for online shopping. The findings revealed that there is a significant relationship between e-commerce experience and attitude towards online shopping among the respondents. However, there is no significant relationship between hours spent on internet and attitude towards online shopping among the respondents. These findings may be helpful to online marketers for the development of the marketing strategies. Further study should explore other factors that influence consumers' attitude toward online shopping with a broader range of population and high representative sampling method.

REFERENCES


Abstract – Remote work generally refers to organizational work that is done away from the office, in a remote location, especially at home. It is the long-term evaluation of companies experimenting formed outside of the normal organizational space and time. It is expected that a trend toward work-at-home would lead to an economic resurgence, a dramatic change development. The feasibility of remote work raises three significant questions; what kinds of jobs can be performed remotely? What kinds of individuals can work at home? How remote workers are best monitored and controlled? Moreover, it also raises important issues about the relationship of the individual to work and to the organization. Previous studies showed that remote working was mostly valued because of its flexibility. Surveys have also revealed the existence of a positive association between the intensity of remote working and other benefits such as enhancing the ability to alter work arrangements in support of personal circumstances. The aim of this study is to define future workers whether remote working is associated with a reduction or an enhancement of work effort, well-being and work-life balance and how it will be helpful for developing country like Bangladesh.

Keywords – Remote working, work-at-home, job quality, work effort, job-related well-being, job satisfaction, work-life balance, Bangladesh.

1. INTRODUCTION

Remote work has been recognized as one of the effective way of retaining productivity. Workplace environment has changed drastically within the last two decades. The era of automation has changed the look of workplace significantly. In addition, the fact of relocation has been considered as one of the biggest challenge for organization. Waiting hour increased because of traffic and it lead to deduce in productivity. Employees eventually lose interest their regular surfing from home to office or vice-versa. These lead organizations to think alternative to increase productivity. Another issue being found in the employee culture is the balance of work and family. They are getting distance from their close ones. In addition, some organizations are facing unreasonable variable cost i.e. extra electricity cost. Remote work concept typically helps to reduce the excess of being in the workplace and opportune employees to work from their home or convenient places. Initially it was difficult to maintain the work progress but eventually organizations started to successfully pull of the strategy. The result seems positive as we found in Athena Inc., Yahoo. The challenge was the relocation of the job site as employees were not happy at all for the location. They came up with the strategy of remote workplace with a less space and sharing the chairs of the workplace. Two facts changed significantly. One, employee’s productivity increased as they will have the flexibility. Moreover, the cost of having an unusual big office diminished and cost lowered to a tolerant level. This concept then eventually became popular and firms started to take it as an opportunity. Soon after later, firms discovered that employees faced personal and professional challenges. Researchers found that the problem was the lack allocation and maintenance of the remote work strategy. Thus research will have the purpose of identifying resource availability and associated outcomes of job performance & work-family balance.

Main problem with remote working is that people of developing country are not aware of this working system. Moreover, they do not know the benefits of it. Also, they are comfortable with traditional way of working which is another barrier. Security concern and not keeping eyes all the time on the employees make organizations feel that work could not be done properly and information will be leaked. There is very less literature published about this. So by default, people do not have any option to learn more about pros and cons of remote work and thus turn the ratio down of it.

We did the study on current situation of practicing remote working in Bangladesh and by analyzing we figure out that the rate is very low. But the interest on remote working is very high especially in young generation. In this paper, our target is to provide the general concept of Remote working system on the basis of Developing country like Bangladesh and show the main reasons of why implementation of this working system is important. While doing this study, we had to face some limitations. If we could recover those, we would have more spontaneous findings. Limitations are mentioned below-

During this study, we could not conduct any survey on this topic because very less number of respondents and mostly no idea about the topic, which means we do not have the primary data.

There is few research papers available on Remote work and among those most of them are for the developed country. The overall idea given papers are rare by which we can have the general idea of remote work in developing countries.
Since we don’t have many years of experience on conducting researches and producing academic papers of such a large size individually, the scope and depth of discussions in this paper is compromised in many levels compared to the works of experienced scholars.

This paper will help future researchers to do in depth research on Remote working. It will also help them to generate ideas to develop new models on this topic. Future researchers will have the opportunity to have knowledge in differences of developed and developing countries working system. This study reveals the best way of practices for the companies who are looking forward to implement remote working system. Significance of this paper not only ends at among future researchers. Practitioners are highly interested in this topic and this paper will serve them to fulfill their knowledge in this topic. Main objective of this paper is to figure out best and potential working system addressing the key problems.

II. METHODOLOGY

The process used to collect information and data for the purpose of making business decisions. The methodology may include publication research, interviews, surveys and other research techniques. This process could include both present and historical information. This process also includes collection, identification, classification, interpretation and presentation of different data in a systematic manner. The whole process has been given below: Since, this field is almost new in developing country and not been studied more clearly before, that’s why here we done exploratory research. This type of research does not intend to offer final and conclusive solutions to existing problems. This type of research is usually conducted to study a problem that has not been clearly defined yet. We have done this research on the basis of secondary data. We collected most of the information from the previous research papers which were based on either telework or remote working system and also from the different articles. Most of the data are sourced from conference papers, journal papers and online databases.

III. LITERATURE REVIEW

A. Remote Working:

Remote work is based on the concept that work does not need to be done in a specific place to be executed successfully. It is a working style that allows to work outside of a traditional office environment. It allows people to work from anywhere one want rather than forcing them to be present in the designated desk all the time. The idea that employees need to be present in one physical location in order to be able to collaborate effectively is entrenched in the “old school” of management (1). Remote working can be referred to various terms such as, telecommuting, flexible work, telework, work-from-home, remote work, and virtual work. However, there is a slightly difference between telework and remote work. Remote work implies that the worker lives outside of the geographic area of the company’s main headquarters or office where telecommuting and telework mean that there may or may not be some on-site work being done by the worker(2). Whether it is remote working or telecommunicating, the number of employee involved in these are increasing rapidly day by day. Individuals are now more interested in working from a comfort zone rather than usual working environment. On a survey it is examined that loud coworkers made the most distraction which can be diminished by working in one’s own and this is one of the reasons why individuals choosing it more. People of big cities like San Francisco, Hong Kong, London, Paris, and even Berlin, people tend to flock to high-density areas rather than leave these areas to enjoy empty beaches (6). Not only them, people from all over the world are now choosing to work by them own rather than choosing a density place of working. That is one of the reasons why nowadays people prefer remote working more. In some survey by the International Telework Association and council showed that the number of employee who have been worked as a remote worker, have been doubled since 1997 to 2003 which turn into 33.7 million in 2008. It has been identified that for managerial or supervisory tasks, remote working is mostly suitable. However, remote work is becoming more common in a multitude of industries such as technological sectors, freelancing, educational sectors, healthcare, law- remote works can be found in nearly any industry now a days. Rapid technological changes have the greatest impact on remote working. Technological development has enabled efficient use of space, and by it having many employees working in a small space (4).

B. Remote work management

According to Forbes (7), the average office environment now houses up to four generations under one roof, including Veterans (born before 1946), Baby Boomers (1946-1964), Generation X (1965-1979), and Millennial (1980-2000). Millennial have the most tendency to work flexibly as the characteristics of this generation are similar and they want the freedom and independency at a same time. Managing the remote worker is the most important concept of remote working. Without managing the remote workers, company will never be able to achieve its vision as remote workers would never understand what they are going to deliver clearly without a clear version of it. Establishing the objectives and goal of the organization to the employees is one of the main success factors for any organizations. Mutual trust and respect is the key for any successful remote working. Manager and employee should have a great bond where they both understand each other’s steps. Moreover, managers must put in extra effort to cultivate a positive team dynamic and ensure remote workers feel connected to other colleagues (5). There should be some ground rules and accountability that must be followed by the remote workers. These rules should be...
prepared by the manager with the permissions of high authority. Among them, the key rules of managing remote employees should be, the appropriate cadence of communications which includes how quickly employees need to respond, what follow-up steps should be taken. Employee must have a broad knowledge about what the work stands for before appointing the position. Writing a formal contract before which specifies the responsibilities and states the organization’s expectations is must. However, the way of work should pursue the employees need to be planned by the individual characteristics. A successful organization focuses more on managing the remote workers rather than emphasizes them the pressure to fulfill the demand. Google has been one of the first companies to really understand the need for employees to have a flexible schedule and work on their terms to unleash their creativity and a greater level of productivity (8). It is one of the best ways to support the creativity of an individual’s along with letting them the power to finish the work more efficiently. A success remote working arrangements focuses less on how busy on employee looks and more on the outcome he/she is providing. Management should encourage workers to be a group player and monitor them. The stronger the team is, the more values will be added to the group and the more chances of success in the remote work are. Moreover, rewarding employees based on their performance is a must process for managers as it motivates the workers most.

C. Remote working in Developed countries and Developing country:

The term Developed Country is used to designate nations that have high per capital income which is average income per citizen, high standards of living, long life expectancy, and other measurements which is related to high quality of life for the individual. The UN has developed the Human Development Index (HDI), a compound indicator of some of the statistics, to gauge the level of human development for countries where data is available. Remote workings in developed countries are more common rather than developing countries. United States ranks as the number one country in terms of flexible timing for works. It only requires 38 percent for jobs that require employees to work at the company’s physical location (9). Countries like France and Norway, flexible work has always been an advantages. They to a large extent, emphasizes on being the work done rather than on the place where the work is being proceed. However, countries like Canada, an increasing number of remote work employers are enabling professionals to “go North”(10) as the growing tech sector and emphasis on work-life balance remain appealing for both expats and foreigners.

On the other hand, the country that has a low level of industrialization, citizens has lower life expectancy, lower educational attainment, lower per capital incomes, and higher fertility rates is considered as a developing country. Most countries in Africa, Central Europe, Eastern Europe, Asia, South America, and Central America are generally regarded as developing country. Developing countries have leapfrogged to a new communication technology which is mobile phones which is a powerful development tool. According to the World Bank, a 10% increase in the number of mobile phones can bring about nearly one extra GDP point. (6) Although the idea for remote working has been around for decades now, some developing countries still faces lacking of these opportunities. Job options are limited here. However, some of the countries from developing countries can be greatly benefited by the remote working opportunities. For instance, country like Indonesia which counts tourism and banking among its top industries and is also leading the way regionally in mobile telecommunications, suffers from a drastically high unemployment rate of 40% (10). After having all the open options, they are facing this just because of the lack of knowledge and to look for traditional ways. If people of these countries start adopting this remote working options for their citizens, then the talented people can find their suitable job and it can also help to decline the unemployment rate.

IV. DISCUSSION

Remote work could be defined as a new way of doing job. It means an individual can do a particular task for a company from his/her residence. That person needs to fulfill the given task in an office time by not attending the office physically. It has several benefits. Asian Developing countries like Bangladesh, there are many people who are serving others from their home and we know them as a Freelancer. It is similar to remote working but there is a slightly difference. The main difference is, freelancers are not assigned permanently for a particular company whereas remote workers will be assigned for a company and work accordingly like a traditional employee would do. This working system is an innovative way to hunt top talents and use them as useful resource. From different surveys it came out that remote workers are more productive. It helps to reduce organization’s cost and employees are happier than other normal workers. As a result, employees are more motivated to their work, have less stress for their job and thus became healthier. Moreover, turnover ratio is also lower compare to others (11). There are some reasons why people of all over the world are choosing working remotely. The strongest reason in favor of remote working is diversity. For women, it’s a great way of dealing their office and family altogether. Women are still the primary care-givers and many do not participate in the labor force because of family responsibilities – often because they cannot manage between going to work and looking after their families. However, developed countries have all the opportunities for a working woman. But country likes Bangladesh, where women have to struggle for doing job outside and in each and every step they have to face questions of the way they will manage their family and kids while doing jobs, working outside as a full time is very difficult. Moreover, those questions started to increase along with the child’s
For the employees:

Employees conveyance will be very low since they can do work from home, and no need to show up at the office everyday unnecessary. That means transportation cost will be reduced along with some extra benefits. Flexible working hours encourage employees to work the way they want to and thus, productivity rate will increase. Some other benefits of remote working are:

- A flexible environment where people get to decide their own working hours (with the approval of the employer)
- Less distractions and stress
- Proximity to home and family members
- Reduced time of convenience
- Better health
- Better work-life balance
- Greater productivity and creativity

Disadvantages of Remote work:

Although it has potential advantages, remote workings also have some disadvantages. Remote work can cause negative impact on the office environment because of absenteeism of expert employees who choose to work remotely. Sometimes in the time of emergency, the absence of the worker in person can create huge difficulties for others. It also may cause no control over the employees if there is no proper management. Moreover, low input or unavailability can cost the organization’s synergistic capability otherwise available to all conventional office staff (11). Securing the outflow of the information of the company is very challenging in this system. There is some concern for data security when basing employees out of the office and allowing them to move information via telecommunication technology across the internet (15). Lack of data protection can create scene for any organization. Apart from these problems, another issue can be the culture and values associated with the organizations. It is way too much hard to build a culture and values to the remote workers without being involved with them in person. Controlling the workers is a hard task, because managing them whether they are working or not cannot be monitored by such a long distance. However, remote working also has some disadvantages from employees’ perspectives. The lack of feedback on the work from the coworkers is one of the main lacking of this system. Moreover, feeling of isolation is proven drawbacks of remote working. In addition, lack of organizational support increase a significant amount of stress (16).

V. CONCLUSION

The increasing competition for the ideal productivity rates makes remote working more attractive to the employers. By remote working, any work can be done anytime and anywhere. It is likely to produce more positive results such as the reduction of costs, increased productivity, and enhancement of employee satisfaction. However, in terms of working from home, it is important to consider the
nature of the work involved as not all work is suitable for remote working. For instance, some activities need collaboration while other tasks can be done without being directly involved. Technology keeps contributing to the society and thus it is easier to work from home now for everyone. Home plays a very crucial role as a healthy home life being essential for a healthy work life and a healthy environment. The modern home space is filled with the advance technologies. There is some research which indicates that the relationship between home and work needs more attention. Managing one’s home life effectively is linked to effectiveness and job satisfaction in one’s work role. The increasing participation of working remotely in developing countries is less in number then in Developed countries like Bangladesh. Although, there is lacking of researches on this topic as it is not broadly highlighted and thus, people do not have much knowledge about the benefits of this working system.

REFERENCES

Bridging Job Satisfaction and Turnover Attitude: The Mediating Role of Employee Demographics

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Abstract – Employee turnover is a very critical issue for both employees and the organization they work for. All employers prefer to keep their turnover ratio as low as possible because it is not cost effective when an employee leaves the organization and the company needs to go through the recruitment process all over again to replace that one employee. Hiring a new employee is time consuming and expensive. Therefore managers must try to minimize employee’s turnover at all costs and find out the causes behind the turnover ratio so as to minimize the reasons for leaving. Some companies perform exit interviews to find out the reasons for turnovers and they try to resolve those issues. Turnover also makes an impact in employees’ productivity, moral, corporate culture and employers’ reputation. To keep productivity and moral high organizations’ needs to keep the turnover low and in addition it spreads good reputation about the company throughout the industry. Job satisfaction of employees can definitely reduce turnover and employers can play a major role in this process. Like other countries Bangladesh also has various factors that affect the cause of employee turnover. As our nation moves into a lower middle income country from its previous low income status, it will need to ensure that it has a healthy workforce with a positive work life balance. This in turn will keep the turnover ratio down to a minimum. As Bangladesh is still in its developing stages, skilled and competent man power is very limited. Therefore it will be very critical for Bangladesh to manage its employee turnover ratio for the private, government and non-government sectors.

Keywords – Turnover, Employees, Employers, Productivity, Moral, Reputation, Cost Effectiveness, Job Satisfaction, Economy of Bangladesh, Government and Non-Government Sectors.

INTRODUCTION

Turnover is a topic of interest for both scholars and practitioners. Employee turnover has been one of the most studied subjects in organizational behavior literature. To better understand the implications of turnover, one must understand how turnover is defined. West (2000) depicts an employee's decision to voluntarily leave an organization has important consequences for the individual and the firm, and turnover has been the focus of numerous academic studies (Griffith, 2004). Employee turnover refers to the number or percentage of workers who leave an organization and are replaced by new employees (Shaw et al. 1998). It is the rotation of workers around the labor market; between firms, jobs and occupations; and between the states of employment and unemployment (Abassi et al. 2000). Measuring employee turnover can be helpful to employers that want to examine reasons for turnover or estimate the cost-to-hire for budget purposes. Therefore, managers at all costs must try to minimize employee’s turnover and find out the causes behind this incident. Although, we cannot say that there is a standard framework for understanding the employees turnover process as whole but an ample range of factors have been found useful in case of interpreting employee turnover (Kevin et al. 2004).

There are so many factors in Bangladesh that affects the cause of employee turnover. To ensure wealthy economy for a country it’s required to have low employee turnover. Same will be applicable for a developing country like Bangladesh where competent man power is very limited. In Bangladesh, it is very important to manage turnover for both government and non-government sectors (Shamsuzzoha et al. 2006). Turnover can increase organizational performance, but this effect depends on the role performance curve and contingency of the organization’s reward system. The rate of turnover varies from company to company. The highest level of turnover normally found in private sectors than public sectors. The levels of turnover also vary from region to region. However, to specify the findings we will prefer to perform analysis on some organization/industry wise employee turnover ratio as a sample (Telco, Bank or FMCG) to reflect the overall outcome scenario. So, the purpose of our research is to find out the correlation and influencing factors that may have effect on the relationship between employee satisfaction and turnover attitude in Bangladesh.

REVIEW OF LITERATURE

The rate of turnover varies from company to company. In Bangladesh, the highest level of turnover normally found in private sectors rather than the public or government sectors. The levels of turnover also vary from region to region. The highest rates are found where unemployment rate is lower and where it is easy for people to get alternative employment (Rankin, 2006). Employee turnover is not always negative. Sometimes employee turnover can create benefits for organization, positively. This might happen when a poor performer is replaced by a more skilled employee and when a retired employee replaced by a younger one (Hoppock, 2005) Employee turnover may be also costly as it requires different cost to

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take account such as administrative costs of recruitment, cost of covering during the period in which there is a vacancy, training cost for the new employee etc. (Philips, 1990). Most researchers wanted to find out what demographic factors effect the most. But, there has been little consistency in findings the reasons, which is partly due to the diversity of employed and the lack of consistency. High turnover ratio brings both direct and indirect costs (Staw, 1980) found that expenditures of selection, recruitment of new employees, training and development are called direct costs. Dess and Shaw (2001) said, the expenditures of learning, loss of social characteristics are indirect costs. Job satisfaction and turnover are opposite related. Idson & Feaster (1990) argued that large organizations can provide better chances for advancement for employees by providing higher wages and hence ensure organizational attachment.

A poor relationship with the management can also be an important reason for the employees to leave their jobs. But against his thought Carsten et al. (1987) argued it is comparatively rare for people to leave jobs in which they are happy even though they are offered by higher salary elsewhere. Local unemployment rates also interact with job satisfaction to predict turnover in the effective job market (Trevor, 2001). The conflict between different role also lead to employees’ turnover. This conflict of understanding and act upon the actual role refers to the difference between what people expect of us on the job and what we feel we should do. This causes uncertainty about what our role in a job sector should be. Kahn (1990) mentions that it can be a result of misunderstanding what is expected, how to meet the expectations, or the employee thinking the job should be different (Mishra & Spreitzer, 1998).

Sometime, an employee gains more skills and he is not compensated for it consequently. As a result, he remains unhappy with the present job description. Price & Mueller (1986) found that he will try to seek desired job which will reimburse him financially. It is very important for managers and directors to know how many employees are trying to leave their organization and secondly why they want to leave their jobs. These two concerns need to be addressed on priority basis. Annually, it becomes natural to train and guide their workers at proper level. But Weisberg, J., &Kirschbaum (1993) said new employees deserve more facilitation and support in order to make them familiar with the ups and down of the organization.

Employees have a strong need to be informed. Organization having strong communication systems enjoyed lower turnover of employee (Labov, 1997). The positions where employees are involved in some level of the decision-making process, they feel comfortable to stay longer in that position. That is employees should fully understand about issues that affect their working atmosphere (Magnier et al. 1996). But in the absence openness’ in sharing information, employee empowerment the chances of continuity of employees are minimal. High labor turnover in an organization or in a sector may mean poor personnel policies, poor recruitment policies, poor supervisory practices, poor grievance procedures or lack of motivation. All these factors contribute to high employee turnover in the sense that there is no proper management practices and policies on personnel matters hence employees are not recruited systematically, promotions of employees are not based on spelled out policies, no objection procedures in place and thus employees decide to quit (Costly et al. 1987).

Turnover of employees is one of the challenging issues because employee is the soul of an organization. With turnover of well trained employees the organization will die. One of these factors is the person-environment fit which is the degree of relevancy between the organization and employees. It is concerned with the responsibilities of human resource management to see the compatibility of workforce and business organization (Hatton and Emerson, 1998). Many researchers argue that organizations if not managed properly then high turnover rates might have negative effects on the profitability (Hogan, et al. 1993). Turnover has many hidden or invisible costs and these hidden costs are result of incoming employees. Co-workers closely associated with incoming employees and position being filled while vacant. And all these affect the profitability of the organization. On the other hand Kemal et al. (2002) said that turnover effects on customer service and satisfaction. But Catherine (2002) argued that turnover include other costs, such as lost productivity, lost sales, and management’s time, estimate the turnover costs this clearly demonstrates that turnover affects the profitability of the organization and if it’s not managed properly it would have the negative effect on the profit. Griffeth et al. (2000) noted that pay and pay-related variables have a unpretentious effect on turnover. Their analysis also included studies that examined the relationship between pay, a person’s performance and turnover, while Meaghan et al. (2002) focuses that accessibility of information would lead to strong performance from the employees and creating strong corporate culture. Information accessibility would make employees feel that they are appreciated for their effort and chances of leaving the organization are minimal.

Very few researches have been conducted related to turnover in Bangladesh so far. The owners of the business organizations do not concentrate on this important issue because of less awareness. They have little idea about how harmful the effect of turnover is into the productivity of their organizations. Production of a manufacturing organization is hampered due to labor turnover. This problem is one of the main factors for Ready Made Garment (RMG) sectors in Bangladesh. Small percentage of turnover may cause considerable amount of production lost. Turnover directly affects the production and productivity. It causes a replacement which is costly and time consuming. So many formalities must maintain to replace a person. It should be kept in mind that replacing employee with old one normally decreases the production rate. At the same time if the newly recruited workers are
much expert than old ones will benefit for the company too. Turnover therefore sometimes considered being tradeoffs among organizations.

Job satisfaction and employees’ turnover are inversely proportional. With decrease in the strength of one, there is increase in the strength of the other. Job satisfaction and turnover are negatively related (Griffeth et al., 2000). Another researcher said that future good career and turnover are opposite related (Koh and Goh, 1995). There are many other factors which seem to be the core factors of turnover and job satisfaction according to Price and Mueller (1986). They stated that promotion factor will decrease employees’ turnover. Productivity of an organization depends on the skills or expertise of its workforce. A skilled worker may be an asset for any organization. If a skilled person leaves an organization the effects will be very high where as in case of a semiskilled or un-skilled person the effect will be less.

The topic employees’ turnover is widely studied with multiple perspectives and suggested various factors are the causes of turnover of an employee in an organization. In this modern world of technologies and entrepreneurship it is considered important and crucial to equip their employees with the latest trends in business. Turnover of employees is a serious controllable side. It is natural that frequently employees want change of environment and seek new challenging job. Price and Mueller (2001) described that turnover intentions construct alternative in measuring actual turnover. Cotton and Tuttle (1986) referred to it as an individual’s estimated probability that they will stay with an employing organization. When workers perceive the working environment to cordial and genial they will stay there for long time (Moorman, 1991). High turnover ratio brings both direct and indirect costs. As Staw (1980) found that expenditures of selection, recruitment of new employees, training and development are called direct costs. Similarly, the expenditures of learning, loss of social characteristics are indirect costs (Dess and Shaw, 2001). Turnover can be possible due to over work load on employees. It can be defined as a conscious and deliberate willfulness to leave the organization (Tett and Meyer, 1993). Black and Edwards (2000) said, is the major role of financial crises along with the change in strategy of organization. These major activities lead to lack of job security and turnover of employee because it collapses the sincere behavior of workforce. Employees are the product of environment. So whatever are the environmental trends the organization must adopt for the organizational smooth operations and interests. Maslow’s (1970) and Herzberg’s (1973) theories incorporated the significance of an employee to accelerate an organization. Amabile (1997) described the extrinsic motivation need for an employee.

Demographic variables (William and Hazer, 1986) are closely related with the employee turnover. Several theories and views have been detected about the turnover and its impact on the organization’s objective but no one has suggested that retirement benefits, job security, and financial crises are the main causes of an employee turnover. The best way to ensure employees don’t leave the organization is to make sure they are hiring the right employees to begin with. Define the role clearly both to the organization and to the candidates. And then be sure the candidate is a fit not only for it, but for the company culture. As the old saying goes, “a stitch in time, saves nine.” The same goes for cutting employees loose when necessary. Sometimes even when the organization follows the advice above, they get an employee who—no matter what they try to do—just doesn’t fit. And, no matter how effective they might be at their actual work, an employee who is a bad fit is bad for their culture, and that creates culture debt. They will do more damage than good by poisoning the well of the company. Cut them loose. Be sure that the organizations are paying employees the fair going wage for their work and offer them competitive benefits. This might seem like a no brainer but they would be surprised how few companies offer raises that keep up with an employee’s development and actual rising worth. To show employees they are valued and appreciated by offering them real-time recognition that celebrates their successes and their efforts. Make it specific, social and supported by tangible reward, and they, too, will be rewarded—with their loyalty. Today’s employees crave a flexible life or work balance. That impacts retention directly.

That means, if they are not offering employees flexibility around work hours and locations, they might easily leave the organization for someone who will. This one sounds obvious, but for too many leaders interest in engagement is limited to the results of engagement surveys. It’s not enough simply to run an engagement survey once a year. The organization need save most of their energy to act based on the results and they need to work to build a culture of engagement in the company all year long. Happiness may sound a bit soft and spongy to many execs, but the numbers behind it are anything but. Employee happiness is a key indicator of job satisfaction, absenteeism and alignment with values—just for starters. Investing in the happiness of the employees will pay dividends in engagement, productivity and retention. Employees place huge value on opportunities for growth.

METHODOLOGY

Convenience sampling was used to collect survey data using face to face interview on various companies situated in Dhaka city to study the job switching patterns of employees from various age and socio-economic groups.

Problem Statement

Turnover mainly arises from the unhappiness from job placement for individual employee. But being unhappy in a job is not the only reason why people leave one company for another. If the skills that employees acquire are in
demand, they may be lured away by higher pay, better benefits or for a better job growth potential to another organization. Some empirical studies have demonstrated that turnover is associated with demographic and biographical characteristics of workers. This proposed paper will emphasize on objectives to find out the relationship between the demographic factors which effects vastly on the employee turnover in Bangladesh.

Purpose of Research
The purpose of this study is to identify if demographic factors such as differences in age, gender, educational background, location etc. affect the overall job satisfaction and rate of turnover of various employees working with small to medium organizations at entry to mid-level positions.

Scope of Research
This research paper was to evaluate the extent to which constructs from theories of turnover developed in Bangladesh, modified for the local environment, generalize to another culture. There are several types of factors to determine the employee turnover. As like, Social, Cultural and Economic factors. A model based on existing academic research on turnover, the culture of Bangladesh and the results of qualitative interviews was developed. The research emphasizes the impact of various types of satisfaction, including job satisfaction, satisfaction with supervisor and co-worker treatment, and the factors that bind employees to their current employer. Now if anyone wants to find out the political reasons for employee turnover from this research then they cannot find it from here. Because we did not discuss any political reasons here.

Study Hypothesis
Employee Demographics have moderating role in the relationship between overall Employee Satisfaction and Turnover attitude.

III. RESULTS
To better understand the employee behavior when it comes to job switching we need to first understanding the employee profile of the organizations which this study looks into. An overall picture of the average employee will make it easier for top management to understand who their employees are and that in turn can help them develop a better package for their employees so that their turnover ratio will come down to a desirable level.

Looking at the average age of the employees we find that most of the companies have about half of their employees who are between the age of 20 to 30 which needs to be addressed as historically this is the groups that is quite likely to switch jobs faster than others. The second biggest chunk of employees are between the age of 31 to 40 and although they are comparatively stable, they too can switch jobs as they are more experienced and can be easily attracted by better packages offered by competing firms. The safer group of employees are in the age bracket of 41 to 50 and above, but that is comprised of only 20% of the total employee population.

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If we look closely at the above mentioned graph we find that majority of the employees of the studied organizations are commuting from home to office using public transport (46%). It is well established that the public transport system of Dhaka city is incapable of supporting the growing demand and the government funds are not sufficient enough to develop a modern infrastructure to meet the public’s demand. Not to mention that the current infrastructure that is available for the public to use is backdated, not maintained properly due to lack of funds, the capacity is inadequate, do not come to time and is dangerously affected by the overall traffic jams that occur daily on the roads. Under these circumstances any transportation support, for instance a company bus service, provided by respective organizations for their mid-level and lower level employees would be greatly appreciated. It could be an effective fringe benefit tool for companies to use to motivate employees to stay with the firm.

An important factor that needs to be mentioned is that with most firms we find that majority of the employees do not stay with the company for more than 5 years (61%). But there is some good news for the companies, which shows that about 23% of the employees are sticking to a firm for somewhere between 5 to 10 years. This statistic could be improved if we take a close look at the 23% who are staying and try to provide the same motivation to the younger employees. We also find that most of the employees are already married (72%) at this stage of their carrier. This is a good number for the firms to work with as they can take the fact that these family men need to have a stable job which provide adequate job satisfaction and a prospect for carrier development which would provide them with more job security and an overall better package. Companies could create a corporate culture which is family friendly by providing a better work like balance which would attract any employee who are married and needs to give time to the family members. Therefore activities such as annual picnics which involve inviting the entire family could be a start. Life insurance and health insurance policies for the entire family could be lucrative to employees. Strictly maintaining office closing hours could be a great was to promote work like balance. These combined efforts could become an effective non-financial incentive package for the employees this study tries to profile. At a snapshot the employees that should be targeted would be primarily male, young, but married employees, between the age of 20 to 30, most of whom are using public transport to commute to office every day and holding entry-level to mid-level posts. A well thought out benefit package with a carrier development perspective should be sufficient to reduce employee turnover and increase long term job satisfaction.
The study asks the respondents if they feel that their current workload interferes with their work life balance. Although a good number of the respondents do not feel that there is a problem with the work life balance (29%) there is also a good number of respondents (34%) that feel that they are being overworked and that is taking away time from their families. Many (36%) of the respondents also feel that their plans with the family are sometimes under conflict with work related deadlines and may have to be postponed or canceled. This leads to unsatisfactory working conditions and could be the cause for many to look for jobs that demand less or more flexible timing.

Current mindset of today’s workers seem to be leaning towards regularly switching jobs in order to find not necessarily a better payed job, but rather a better suited job in terms of flexibility in working hours, better working conditions in terms of not only office decor, esthetics, sufficient lighting etc., but also in terms of having a friendly supervisor to work under and less office politics to deal with in general.

Taking a look at the data would suggest that majority (67%) of the employees these days genuinely believe that they need to switch their jobs more frequently in order to become successful in the current market. It was also found that about a quarter of the respondents are always doing some sort of an activity which may indicate that they are looking for a job. For example they are either reading the classified ads in the paper, browsing through the job sites in the net, filling up an application, had a job interview or at least has spoken to someone about a job opening such as a previous employee, a current co-worker, friend or family member.

This is an alarming scenario for organizations because if the corporate culture is to switch frequently than firms will need to give serious through into how to change this mindset as it may become very costly for companies if they need to hire new recruits in a regular basis. It will not only waste more resources such as time and finances, but it may also affect the overall performance of employees on any given firm given that they cannot hold on to enough employees with a good number of years under their belt whose experiences always contributes to the overall firm efficiency.
The study also probed into overall working conditions for employees and several factors were looked into such as Safety Conditions (54% satisfied) and Noise (27% satisfied) where most of the employees do not seem to have a problem with the current conditions.

Furthermore we find that factors such as Work Schedule and Jot Tanks majority of the employees are also satisfied with these issues (40% & 30% respectively). However there is a good number of workers (22% & 15% respectively) who are not at all happy with their current working schedules and the task they are given at hand. Many of the workers are also just barely happy with the current working conditions (23% & 38% respectively) and could be converted into potential workers not looking to switch jobs if their needs are addressed by the management.

Again with factors such as Job Security and Promotion it was found that majority of the workers (43% & 43% respectively) feel that they do have some job security and there is a possible chance of being promoted in their respective fields. However a group of employees are always left behind and not addressed properly where they feel that they do not have any job security or chance of being promoted (32% & 32% respectively).
Overall the study indicates that almost half of the respondents (43% & 48% respectively) are not satisfied with the current salary they are receiving for their current post as most workers still feel that they are being overworked and underpaid by their employers. If a country is operating with almost half of their employees if various different industries feel that they are underpaid it is quite natural that there will grow a corporate culture where there will be a tendency for young workers to switch their jobs more frequently than warranted. This was previously discussed where we find that about a quarter of the workforce is constantly looking to switch their jobs if the opportunity arises. Again if this number keeps on rising where about half the workforce is not satisfied with their salary packages we will find a sharp increase in this job switching tendency which in no way can be a healthy practice both for the industries and the workforce as it will not only leave a bad impression on the workers’ CVs, but will also gear up recruitment costs for the industries. As the study clearly indicates that the workforce is more dissatisfied with the fringe benefits and the overall benefit package rather than the salary itself, it goes to show that we have neglected to understand our worker’s needs. Industries needs to focus on developing more flexible benefit packages which are more customized to individual needs rather than establishing salary scales across industries and various sectors. A package better suited to their needs, keeping in mind the fast expansion of Dhaka city itself and all its interconnected issues such as traffic jams, daily commuting of the workforce, having time to complete responsibilities on the home, giving time to family and friends and overall to maintain a better work life balance is becoming more and more important for the Bangladesh workforce. This is quickly becoming as issues that cannot be overlooked by industries any longer and has to be taken into account when developing future benefit packages of workers at all levels and across industries.

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<tr>
<td></td>
<td>Marital Status</td>
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<tr>
<td></td>
<td>Between Groups (Combined)</td>
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<td>Between Groups (Combined)</td>
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<td>3</td>
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<td>.822</td>
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<td>103.402</td>
<td>119</td>
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</tbody>
</table>
IV. DISCUSSION

Comparing the Regressing factor against the Demographic Factors it was seen that Age and Marital Status are significant factors (0.018 & 0.006 respectively). This is indicative of local cultural presumptions that people who are in the older age brackets and have a family to maintain seems content with their present jobs and are less likely to switch drastically.

Again looking at the Turnover prospects we find that the turnover ratio of the older employees are better than that of the younger employees. This is indicative of common practices where the younger employee with no family responsibilities over their shoulders seem to have a higher job switching frequency.

V. CONCLUSION

Satisfactory salary structure helps to reduce turnover though job security. However it is not the only solution for the authorities. A person does not stay in an organization only for salary, but he/she may stay for many other reasons such as, rearranging employees, good stream relation, better working environment, preferable job location etc. The study can alert the top management that if they give more attention to the retirement benefits, job security and financial crises then they can reduce the level of turnover of the professional employees who could become a core asset for the organization. However, the study indicates that the older, and more matured employees with a family, if coupled with an effective fringe benefit package which supports a healthy work life balance will always stay loyal with their organization.

REFERENCES


Prospects and Challenges for E-Pharmacy in Bangladesh

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Abstract – This study aims to find out the opportunities and obstacles of E-pharmacy in Bangladesh. This study is an exploratory research and a sample of 76 respondents (medicine purchasers) in some areas of Dhaka- Gulshan, Mirpur, Dhanmondi and Mohammadpur, was reached through online survey (Google Form) and face-to-face interview. Both the pharmaceuticals and E-commerce are flourishing sectors in Bangladesh so the concept of E-pharmacy is very adaptable for the present time. Among all the variables working people, price, convenience, delivery time, quality of medicines, payment options, privacy and ease of use are the ones which highly influence the purchase decision of online medicines. There are some challenges too like influencing their purchase decision and making them trust the service but again if correct people and planning is involved then these obstacles can be overcome too.

Keywords – E-pharmacy, Trust, Purchase decision, E-commerce, Pharmaceutical industry, Prospects, Challenges.

INTRODUCTION:

Background of the Industry:
One of the most dynamic and technologically advanced industries in Bangladesh is the Pharmaceutical industry. At present there are estimated 150 active pharmaceuticals companies in operation while the top 20 companies generate 85% of the revenue. Pharmaceutical companies are expanding their business with the aim to explore the export market and at present the pharmaceutical industry of Bangladesh meets 98 percent of the local demand and exports to more than 125 countries. Not only tablets, capsules, and syrups but specialized products like HFA inhalers, CFC inhalers, suppositories, nasal sprays, and injectable IV infusions are also exported from this industry.

The Pharmacy Council of Bangladesh (PCB) was established under the Pharmacy Ordinance Act in 1976 to control the pharmacy practice in Bangladesh. The pharmaceuticals companies are very much dependent on Active Pharmaceutical Ingredient (API) exported from foreign countries like more than 90 % of Tk 4,700 crore worth of API are imported each year. As a result, the industry is susceptible to external shocks. In order to address the issue, the government has started the process of constructing an Active Pharmaceutical Ingredient (API) industrial park in Munshiganj. Almost half of the companies that got plots in the API Park are expected to commence their operation by the end of 2018. Once the API Park is completed, it will assist Bangladeshi companies to source at least half of their raw materials from the complex, reducing the dependency on imports.

Bangladesh is one of the developing countries in the world and had witnessed huge changes both socially and economically in the last few decades. One such example is the emergence of E-commerce. When E-commerce had covered almost all the sectors like food, clothing, banking, tourism, electronics, real-estate then how the pharmaceutical industry could be left behind as medicine is also one of the basic needs of human beings. E-pharmacy refers to the existence of an online pharmacy that offers medicines and over-the-counter (OTC) products to the customers. The amount of both diseases and patients are massive and alarming in our country. Therefore there is a need as well as demand for E-pharmacy especially in a mega city like Dhaka where this will be a huge relief to the people by saving their time, money and energy. E-pharmacy has started its operation in Bangladesh but very few in numbers which means the market is not fully explored and it has a lot of potential for growth in the future for this business. Therefore, this study aims to find out the prospects and challenges of this highly potential market of E-pharmacy.

List of Variables and Hypothesis:

1. Convenience:
   Online stores offer greater convenience because these are one stop shops for a variety of products. The access to written product information at these sites is way easier to obtain than in traditional storefront pharmacies. If consumer find it physically difficult to make it to the pharmacy, live in a remote rural area, or have a busy schedule, online and mail-order pharmacies enable them to avoid travel and can save their time. Many online pharmacies will also remind consumers when they can order a refill to help them to maintain their regimen. Hence consumers prescription can be submitted at any time, there is no need to rush to the pharmacy during business hours, they do not have to wait in any long lines, and refills can be set up to be sent automatically. (Jain, Tadvi and Pawar, 2017).

H1: If E-pharmacies act as a one-stop solution for all healthcare needs then it is likely to have a positive impact on the customer’s purchase decision of online medicines.

2. Privacy:
Consumers privately and conveniently order for medicines from online chemist stores as well as get to avail free delivery. Consumers may feel more comfortable purchasing their medication online, or
simply want to speak to someone about prescriptions and their health online or over the phone rather than in person. However, to prevent the use of buyer’s personal information for unauthorized purposes, it is required to make sure the pharmacy has an appropriate privacy policy. (Jain, Tadvi and Pawar, 2017)

H2: If E-pharmacy has strong privacy policies then it is likely to have a positive impact on the customer’s purchase decision of online medicines.

3. Age:
According to industry expert’s opinion obtained from Renata Limited employees when it is the matter of accessing internet age plays a big role especially in our country where most of the internet users are from 18 – 65 years and sometimes beyond it. But when it comes to online purchasing then mostly young and middle age individuals prefer that.

H3: Young and middle age customers are more likely to purchase medicines online.

4. Working People:
With rising education levels and growing workforce of the country, time is a very important factor for individuals in today’s world. E-commerce allows the customers to shop from the comfort of home or office and save quite some amount of time, energy and money.

With the advent of mobile internet, this has become even easier. Ecommerce is growing at a very fast pace in the country. Online pharmacies today have emerged as a result of the same as have the other formats of online retailing. (Basu and Shenbagaraman, 2016).

H4: Working individuals are more likely to purchase medicines online.

5. Price:
Drug shopping on the internet helps a buyer to save money. Several surveys conducted by research bodies have shown that as much as one third the price can be saved on prescribed medicines if they are bought online.

Buyers are also able to find the best prices only at these stores. Hence, one of the primary benefits people cite for using an online pharmacy is price. (Jain, Tadvi and Pawar, 2017).

H5: If medicines are found at a lower price at E-pharmacy then people are more likely to purchase medicines online.

6. Delivery Time:
While ordering routines can technically be handled via the Internet, the issue of physical delivery remains. There are two concerns. One is that delivery does not take place immediately

H6: E-pharmacy with 24 hours fast delivery service is likely to have a positive impact on the customer’s purchase decision of online medicine.

7. Family members:
According to the industry expert’s opinion obtained from Renata Limited employees it is seen that in Dhaka city mostly people live in nuclear families where almost all are very busy in their daily routine lives and often do not get the time to even buy necessary items for themselves.

H7:- People with limited family members are more likely to purchase medicines online.

8. Quality assurance:
By failing to require a prescription, one could take medication that is not appropriate for her. It could make sick or kill you. Some illegal online drug stores deal in dangerous contaminated, counterfeit or outdated drugs that can lead to dangerous drug interactions.

H8: Fear of fake products is likely to have a negative impact on the customer’s purchase decision of online medicine.

9. Purchase rate of medicine:
As per industry expert’s opinion obtained from Renata Limited employees, the people who buy medicines more frequently are more in need of E-pharmacy because they need to buy medicines more often but it happens that they do not get ample time to do that.

H9: Frequent medicine purchasers are more likely to

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.814</td>
<td>.663</td>
<td>.374</td>
<td>.541</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), EU, Price, Privacy, Payment, FM, Income, Convenience, Age, WP, TQ, DT, MP purchase medicines online.

10. Ease of use:
Ease of use refers to the measurement of how easy the finished product is to be used by its intended users. According (Lim, Osman, Salahuddin, Romle, & Abdullah, 2016), Online purchase intention significantly positively influence online shopping behavior. (Ahmed, Islam, & Qaom, 2015) Found that „Accuracy of delivered product as described in web” is considered important by 94% of the sample customers. Also, „order processing time” is considered crucial by 84% of respondents. Both of these factors can be considered part of Ease of use. As the point of contact for customers with the E-medical store is through the official website so it is crucial that it has a user-friendly interface so that the customers find it effortless to place their order and tend to come back for more service.

H10: User-friendly website is likely to have a positive impact on the customer’s purchase decision of online medicines.

11. Income level:
According to the industry expert’s opinion obtained from Renata Limited employees it can be seen that in Dhaka city mostly upper middle class and upper class people tend to buy things online. Income level plays a big role in consumers’ purchase decision.

H11: Middle class and Upper class people are more likely to purchase medicines online.

12. Payment options:
As per the industry expert’s opinion obtained from Renata Limited employees it is seen that normally online
stores of other products have flexible payment options like cash on delivery and credit card payment facilities too which acts as a lucrative approach to attract customers.

H12: Flexible payment options are likely to have a positive impact on the customer’s purchase decision of online medicines.

**ANALYSIS AND RESULTS**

A Linear Regression analysis is done to find the relation between the hypothesis and consumer’s purchase decisions of online medicine. The R Square value determines the overall strength of the Regression model. As it is seen in the table, the R Square value is above (0.5) which means that the model is moderately strong.

As shown in Table below, it can be seen that only eight of the hypotheses have met a confidence level of 95% and above. These variables being working people, Price, Convenience, Delivery Time, Quality Assurance, Payment options, Privacy and Ease of Use have a somewhat relationship with Consumer’s Purchase decision of online medicine. It can be seen that working people has a direct relation to consumer’s purchase decision with a coefficient of .021 meaning working people are more likely to buy medicines online.

It is also seen that price has a direct relation to consumer’s purchase decision with a coefficient of .028, meaning that if prices are low then people are more likely to buy medicines online.

It can be seen that convenience has a direct relation to consumer’s purchase decision with a coefficient of .032, meaning if E-pharmacies act as a one-stop solution for all healthcare needs then it is likely that people will buy medicines online.

It is seen that delivery time has an inverse relation to purchase decision with a coefficient of .018, meaning that if the delivery time of ordered medicines are less then more people are likely to purchase medicines online.

It can be seen that quality assurance is inversely related to purchase decision of online medicines with a coefficient of .044 meaning the more people will be afraid of fake products then it will have a negative impact of purchase decision.

It can also be seen that flexible payment options is directly related to purchase decisions with a coefficient of .025 meaning that the more flexible the payment options are, the more likely it is that people will buy medicines online.

It is also seen that privacy policy has a direct relation to purchase decision with a coefficient of .016 meaning that the stronger the privacy policy of E-pharmacies the more likely it is that people will buy medicines online. It can also be seen that ease of use has a direct relation to purchase decision with a coefficient of .012 meaning that the more likely it is that people will buy medicines online if the websites for the E-pharmacies are user-friendly.

The rest of the variables have a confidence level below 95% making them unreliable. These variables do have a relation with consumer’s purchase decision of online medicines but it’s not quite as significant.

The variables Age, Income level, Family members and rate of medicines purchase a relation with the purchase decision of consumers of buying medicines online but they are not significant enough.

**FINDINGS**

Prospects of E-pharmacy:

Bangladesh is a developing nation and is has turned a digital oriented country in a very short time. The economy of the country has improved more or less in the past decade giving more disposal income to the population. As a result it is seen that almost everyone has a mobile phone and especially in the Dhaka city the use of smartphones and internet is massive and with the emergence of 3G and 4G network facility in our country the use of internet has increased in a rapid way making it a daily necessity rather than a luxury. Therefore, it is seen that every aspect of daily routines of people is somehow influenced by the internet. Whether it is buying clothes, electronics, shoes or even groceries all can be bought through online stores. Similarly, purchasing airplane, train or bus tickets to hotel reservations and banking procedures are done through online process. So it is the correct time for the development of E-pharmacy as medicines are too an important necessity of daily life. Moreover, the number of working people both male and female are quite high in Dhaka and it is quite obvious that they have to lead very busy life so E-pharmacy will a huge relief for them especially who needs to buy medicines more frequently. Another trend that has emerged in the last few years is the bloom of start-ups especially by the young entrepreneurs giving a huge opportunity for some innovative and dynamic people who can be the reason of establishment of E-pharmacy in Bangladesh especially in Dhaka city. The consumers of Dhaka are quite price sensitive and the rate of diseases are even high too in the city so if they can find medicines at a lower price than it is very likely that a huge number
of people will buy medicines from online drug stores. Another blessing at present is the use of social media. Almost everyone has social media account be it Facebook, Instagram, Twitter or any other so it becomes very easy and affordable to do promotions on these social media platforms which reaches thousands of people. People are more service-oriented now days so if these online pharmacies offers the best service then they are likely to get more loyal customers which will add up to their sustainability. There are huge possibilities and opportunities for E-pharmacy to bloom especially in Dhaka but it will take some time as it is a new concept and the consumers will adapt to it slowly like they have to other E-commerce businesses.

**Challenges of E-pharmacy:**

There is a perception in people’s mind that these online stores do not have any processes of medical supervision or physical evaluation in place so there is a lack of physical evaluation and also fear that if at all there is any such process, these are not performed by a licensed health professional. According to them online pharmacies do not have the personal touch that a physical pharmacy has. One cannot talk to the pharmacist face-to-face to get advice about the side effects on the drug interactions thus many feel inhibitions to buy medicines online.

Many of the benefits to using a local pharmacy reflect the disadvantages found in an online pharmacy. Some of these include being sure a person is watching for any negative drug interactions, access to someone if one have questions about a medication, and the ability to get medications the same day they are prescribed.

It is seen that there are many websites that operate legally and offer convenience, privacy, and are safe for purchasing medicines. But there are also a lot of “rogue websites” that offer to sell potentially dangerous drugs which have not been checked for safety or effectiveness. Even if a rogue site may look professional and legal, it could actually be an illegal operation. These rogue sites often sell unapproved drugs, fake drugs that contain the wrong active ingredient and dangerous ingredients. Counterfeit drugs may be copy products that can be difficult to even identify. This deliberate and fraudulent practice of counterfeiting can apply to both brand name and generic products, where the identity of the source is often mislabeled in a way that suggests it is the authentic and approved product.

According to the drug policies of Bangladesh the medicines are sold at a similar price everywhere and if the E-pharmacies want to charge less than the regulatory body needs to modify some of the laws and bring some new ones for the efficient run of the E-pharmacies. Delivery time is one of the common problems that almost all E-commerce business in the country needs to face. Being a heavily populated there is a lot of traffic jam and it is quite impossible to reach somewhere at the designated time but the bigger challenge for E-pharmacies to deliver the drugs properly because many medicines are sensitive to weather and needs to be carried in a special way which increases the costing. Moreover, there may be times when the orders are quite urgent it is a matter of life and death and at that time doing proper delivery will be a task.

Privacy is also an issue that makes people thinks online pharmacies are not safe. They assume that these online stores might leak their personal information or facts related to their health issues that are very confidential. Another problem is making a user-friendly website because often these websites do not work properly so more IT people should be involved in maintaining them. Most of the medicines cannot be sold without prescriptions so it becomes a hassle for the customers to upload the prescription which is then checked by a pharmacist and after that the order is confirmed which makes the whole process time consuming. Another challenge is medicines are not allowed to be advertised in the traditional way like television, billboards, magazine and newspaper so the only way these e-pharmacies can do promotion is by using social media which makes the target market constricted.

**RECOMMENDATION**

E-commerce is at a blooming stage in our country and E-pharmacy specifically has not been explored much so there is a huge opportunity for growth and development in this sector as the market has great potential. The internet users are also huge and online shopping is trend right now so the E-pharmacies should plan wisely to capitalize on this lucrative group of customers. Even the rate of diseases are quite high in our country so the chances of the business becoming successful is very and people should start investing in it because as more people will be involved the industry will become more innovative and dynamic in nature. As it is a new concept and is not that established right now but has a great future ahead if the people planning to get involved handles it carefully.

Whenever a new something is being started then it is bound to face challenges so similarly E-pharmacies has a quite a few obstacles too. The main problem is to reach the target audience as the traditional way of marketing is not possible and only social media is not enough and as per the survey not many people are aware of the concept of E-pharmacy so they need to come up with more innovative ideas and promotional plans. Another problem is making people take service from online pharmacies rather than the local ones because they are so much habituated to these physical pharmacies that they feel hesitant in using this virtual medical store. Even they are many people who are afraid of buying medicines online because they think that these E-pharmacies are more likely to sell fake or harmful medicines which can be dangerous. So the people of E-pharmacy needs to articulate such plans that will help in breaking this false mindset of people and bring them out from the habit of using local pharmacies only. Not everyone is going to
buy medicines online but there is a nice target market which is very profitable if explored correctly.

CONCLUSION

This study was aimed to find out the prospects and challenges of E-pharmacy in Bangladesh especially in Dhaka city and after the completion of the research it can be concluded that Bangladesh is a developing country and has a huge number of internet users who are already involved in many other E-commerce businesses and the amount of diseases and patients are quite a lot so the concept of E-pharmacy is very adaptable for the present time and can be one of the successful businesses because both the pharmaceuticals and E-commerce are flourishing sectors. Even in the survey it has been found that people do think that there is a huge need of E-pharmacy in Dhaka especially due to the hectic life of the citizens. Among all the variables working people, price, convenience, delivery time, quality of medicines, payment options, privacy and ease of use are the ones which highly influence the purchase decision of online medicines. This purchase decision helped to determine the prospects and challenges of this sector like the opportunity of E-pharmacy is quite a lot and if proper planning is executed then it will a huge success in the long run. However there are some challenges too like influencing their purchase decision and making them trust the service but again if correct people and planning is involved then these obstacles can be overcome too. Therefore, more people should invest in this rising sector of E-pharmacy.

REFERENCES

Measuring Efficiency and Client Satisfaction of Selected Commercial Bank in Bangladesh

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Abstract – Banking sectors is known as the backbone of an economy. Sound and stable banking process is quite necessary for development of the banking sector and hence the emerging economy of Bangladesh. This paper tries to fill the academic hiatus by measuring overall efficiency in term of variable like loan and advance, deposit, operating income, net profit. It also tries to find out the gap between service expectation and perception based on SERVQUAL model. Here Bank performance measured on the secondary data (2007-2017) and satisfaction measured on the basis of primary data. The findings of the study spells out that 2nd generation bank (Dutch Bangla Bank Ltd. highest average net profit 90% and lowest score for Janata Bank Ltd. 33%). In case of loan and advance and deposit Janata Bank Ltd. occupied highest score 97% and 97% respectively, Rupali Bank Ltd. occupied lowest scorer in loan and advance and operating income 71% and 22% respectively. On the other hand customers are more satisfied with second and third generation bank like DBBL, IBBL and JBL. On the other hand the satisfaction level of customer is very poor with first generation bank like Rupali and Janata Bank Ltd. Result reveals that all the banks should improve the service to keep their client satisfied and delighted.

Keywords – Efficiency performance, client satisfaction.

I. INTRODUCTION

Today, banking sector perceived as a catalyst in economic growth of a country. The banking sector of Bangladesh has gone through revolutionary changes over last two decades by providing wide ranges of services. At present 59 banks are operating in Bangladesh. Still there exists a gap between customers’ expectation and perception. Today, banking sector of Bangladesh is facing an intensive competition. Customer satisfaction and retention is a big challenge for private and public commercial banks. There is significant positive relationship between bank efficiency and customer satisfaction. At the end of 2016 the banking sector is facing a very deep and devastating crisis and increase in the Non-Performing Loans (NPL) due to the improper selection and supervision of the borrower. Unhealthy competition, corruption and undue political influence in bank management, high interest, increase of salary and other benefits of the employees, insufficient risk management practices and bad governance. After the liberation, few banks operating in Bangladesh are nationalized. The main motto of the nationalization is to reach the common mass and financial inclusion of the country, rather make profit. After that the government liberalizes the financial sector. Which ultimately increases the numbers of private commercial banks and branches (Bangladesh Bank.2017)? The banking industry in Bangladesh today dominates the financial sector and it contributes about 74% of the whole financial industry. In the banking sector of Bangladesh, there exists unrealistic policy and implementation program, unskilled man power, inefficiency of technology, poor service quality, supervision gaps, overcapacity and market distortions. Therefore, the efficiency of the existing banks needs to be measured to provide policy implication regarding the capacity of the incumbents and level of completion of the industry. The function of the banking sector is to speed up improvement and is largely relied on the satisfaction and profitability of industry. Generally, banks with lower efficiency are likely to have a chance of failure and becoming insolvent [6]; this may lead to banking as well as financial failure leading to affecting the country’s economy adversely. Again, it is argued that a single bank’s break-down can hamper other banks’ operation. Moreover, commercial bank should be not only profitable but also be efficient, because these banks face robust competition both domestically and internationally. These types of banks should be effective for the mobilization of the economic resources from the surplus unit to deficit units. For securing efficacy in these sectors, make stronger the efficiency of implemented economic policies in the large scale, inducing continuous development, financial growth, and well-being. However, in case of a developing country like Bangladesh. It creates burden to the government to take over these banks in time of collapse. So, it is the time to identify the performance of the banks and measure the gap between the efficient the inefficient banks. Despite many technique present of the efficiency of banking sector using frontier approach, there are very few available in the context of Bangladesh.

II. OBJECTIVES OF THE STUDY

The main objectives of this study is to measure overall efficiency of some selected banks (five) in term of variable like, loans & advances and deposit, operating income, and net profit. This study also measures the gap
between customer perception and customer expectation of each bank.

III. REVIEW OF RELEVANT LITERATURE

Researches on efficiency analysis on banking industry are increasing. [11] Estimates cost efficiency of Turkish commercial banks employing stochastic frontier model. Empirical results suggest that cost efficiencies of Turkish banks is improved over time, with the effects of the 2008 and 2010 crisis. [4]Examine branch level efficiency of Sarman bank in an Iranian banking context using stochastic frontier functions and show that changes in salaries have not significant increase I total costs, increased operational costs led to an increase in the costs of the branches and increased rate of depreciation led to cost reduction.

[3] Estimates profit and cost efficiency in the banking sector of Vietnam. The paper adopted stochastic frontier analysis approach to measure the cost and profit efficiency of 45 Vietnamese commercial banks over the years from 2007 to 2012. Results show that managers and acquisition can gain potential cost efficiency and fosters banks’ competition. Sarmiento and Galan (2015) analyses the influence of risk taking on bank efficiency in the context of Colombian banking industry. The paper presents a stochastic frontier model with random inefficiency parameters for capturing the influence of risk-taking on bank efficiency. The paper finds that more capitalized banks are more cost and profit efficient, while banks assuring more credit risk are less cost efficient but more profit efficient.

[1] Evaluate profit and cost efficiency in the Italian banking industry. The paper employed trans-log stochastic frontiers. Results show that the average levels of cost and profit efficiency are both around 90% and they are quite stable over time. Afza and Asghar (2017) estimate efficiency of commercial banks in Pakistan. This study applies stochastic frontier approach to examine the overall efficiency trend of commercial banks. The efficiency trend analysis indicates that the efficiency remains similar over the examined period, especially the cost efficiency of the banks. The results, however show that the profit efficiency of the conventional banks has fallen, whereas it increases for Islamic banks.

[2] Measures efficiency on banking sector in Bangladesh. Study uses DEA approach for measuring the overall efficiency on banks. The data from annual reports of different banks are used in this study for the purpose of efficiency checking. The most efficiency bank is found here by the highest efficiency score obtained by that specific bank. Azad et. al.(2017) analyses efficiency of banks in Malaysia by unveiling a dynamic network DEA along with desired output. The paper uses a three-step network DEA model with slack-based variable returns to scale approach. The empirical results signify that only a few banks in Malaysia are performing well in converting deposits and equities into profit as well as minimizing loan loss provisions.

[7] Identify financial efficiency level of financial institutions in Bangladesh from the period of 2011 to 2015. The paper considers 24 PCBs. Technical efficiency is identified by using DEA. It also considers both input and output variables. The results reveals that at firm level 62% banks are efficient under constant returns to scale and 75% banks under variable returns to scale. This paper calculates the efficiency performance of a sample of first, second and third generation commercial banks in terms of operating income, net profit, deposit and loan & advances. The results showing that commercial banks are improved over time, with the effects of the 2008 and 2010 crisis. This paper calculates the efficiency performance of a sample of first, second and third generation commercial banks in terms of operating income, net profit, deposit and loan & advances and make a comparison of their efficiency performances. From this viewpoint, this research is different from others.

IV. METHODOLOGY OF THE STUDY

This study has taken from the descriptive research. To conduct this study, information has been collected from both secondary and primary sources. Various books, publications, online information have been used as the secondary source of information to analyze the efficiency of commercial banks in Bangladesh. Primary data was collected through administering structure questionnaire to know the satisfaction level of bank clients. There target population has been defined to be the account holder of five commercial banks in Rangpur city. Convenient sampling techniques has been used to collect information from a sample of 150 respondents (30 account holders of each banks). However, each dimension of SERVQUAL has been measured through a number of questions using 7 points likert scale. Customer satisfaction of the bank has been measured by calculating the gap between the score of customer expectation and perception across the sub call dimensions. Data are collected from the five commercial bank in Bangladesh. These banks are chosen from the first, second, and third generation banks. Among these banks, Janata Bank Ltd., Rupali Bank Ltd., and Islami Bank Ltd., are chosen from first generation banks, Dutch Bangla bank Ltd., is chosen as second generation bank and Jamuna Bank Ltd. is chosen as third generation bank. Janata bank Ltd. and Rupali Bank Ltd. are the state-owned commercial banks, while Islami bank Ltd., Dutch Bangla bank Ltd., and Jamuna bank Ltd., are private commercial banks. All the Data are collected for the period from 2007 to 2017. Output variables include loans & advance, total operating income and net profit and total deposit of the banks. Input put variables include occupancy cost, labor cost, cost of material, other expense. The environmental variables include number of branches and business per branch.

V. RESULTS AND ANALYSIS

| Table 1: Efficiency Results of Dutch Bangla Bank Ltd. |
### Table 2: Efficiency Rate of Jamuna Bank Ltd.

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<td>0.6684</td>
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<td>0.9882</td>
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<td>0.7882</td>
<td>0.9562</td>
<td>0.9782</td>
<td>0.8550</td>
</tr>
<tr>
<td>2010</td>
<td>0.8483</td>
<td>0.7701</td>
<td>0.9650</td>
<td>0.9327</td>
</tr>
<tr>
<td>2011</td>
<td>0.7819</td>
<td>0.8393</td>
<td>0.8694</td>
<td>0.9095</td>
</tr>
<tr>
<td>2012</td>
<td>0.7909</td>
<td>0.8182</td>
<td>0.8057</td>
<td>0.9292</td>
</tr>
<tr>
<td>2013</td>
<td>0.7726</td>
<td>0.8386</td>
<td>0.7316</td>
<td>0.9093</td>
</tr>
<tr>
<td>2014</td>
<td>0.8542</td>
<td>0.9094</td>
<td>0.7239</td>
<td>0.9282</td>
</tr>
<tr>
<td>2015</td>
<td>0.9496</td>
<td>0.9903</td>
<td>0.7217</td>
<td>0.9589</td>
</tr>
<tr>
<td>2016</td>
<td>0.9887</td>
<td>0.9234</td>
<td>0.6908</td>
<td>0.9277</td>
</tr>
<tr>
<td>2017</td>
<td>0.9999</td>
<td>0.9784</td>
<td>0.7006</td>
<td>0.9611</td>
</tr>
<tr>
<td>Average</td>
<td>0.8340</td>
<td>0.8442</td>
<td>0.8330</td>
<td>0.9037</td>
</tr>
</tbody>
</table>

### Table 3: Efficiency Estimates of Islami Bank Bangladesh Ltd.

<table>
<thead>
<tr>
<th>Year</th>
<th>Deposit</th>
<th>Loans and Advance</th>
<th>Operating Income</th>
<th>Net Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>0.9978</td>
<td>0.9532</td>
<td>0.866</td>
<td>0.5539</td>
</tr>
<tr>
<td>2008</td>
<td>0.9909</td>
<td>0.9335</td>
<td>0.7239</td>
<td>0.7881</td>
</tr>
<tr>
<td>2009</td>
<td>0.9952</td>
<td>0.9555</td>
<td>0.673</td>
<td>0.9075</td>
</tr>
<tr>
<td>2010</td>
<td>0.9882</td>
<td>0.9267</td>
<td>0.8027</td>
<td>0.9016</td>
</tr>
<tr>
<td>2011</td>
<td>0.9747</td>
<td>0.9347</td>
<td>0.967</td>
<td>0.8497</td>
</tr>
<tr>
<td>2012</td>
<td>0.9604</td>
<td>0.9272</td>
<td>0.9999</td>
<td>0.8243</td>
</tr>
<tr>
<td>2013</td>
<td>0.9605</td>
<td>0.849</td>
<td>0.9171</td>
<td>0.5886</td>
</tr>
</tbody>
</table>

### Dutch Bangla Bank Ltd.

### Jamuna Bank Ltd.
Table 4: Efficiency Values of Janata Bank Ltd.

<table>
<thead>
<tr>
<th>Year</th>
<th>Deposit</th>
<th>Loans and Advance</th>
<th>Operating Income</th>
<th>Net Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>0.9839</td>
<td>0.9843</td>
<td>0.6837</td>
<td>0.0737</td>
</tr>
<tr>
<td>2008</td>
<td>0.9752</td>
<td>0.9754</td>
<td>0.9553</td>
<td>0.9010</td>
</tr>
<tr>
<td>2009</td>
<td>0.9752</td>
<td>0.9760</td>
<td>0.9757</td>
<td>0.5834</td>
</tr>
<tr>
<td>2010</td>
<td>0.9733</td>
<td>0.9776</td>
<td>0.9875</td>
<td>0.2523</td>
</tr>
<tr>
<td>2011</td>
<td>0.9763</td>
<td>0.9795</td>
<td>0.9916</td>
<td>0.2972</td>
</tr>
<tr>
<td>2012</td>
<td>0.9777</td>
<td>0.9817</td>
<td>0.9902</td>
<td>0.0002</td>
</tr>
<tr>
<td>2013</td>
<td>0.9778</td>
<td>0.9786</td>
<td>0.9871</td>
<td>0.9952</td>
</tr>
<tr>
<td>2014</td>
<td>0.9771</td>
<td>0.9785</td>
<td>0.9825</td>
<td>0.2805</td>
</tr>
<tr>
<td>2015</td>
<td>0.9768</td>
<td>0.9780</td>
<td>0.9831</td>
<td>0.2052</td>
</tr>
<tr>
<td>2016</td>
<td>0.9773</td>
<td>0.9786</td>
<td>0.9852</td>
<td>0.0386</td>
</tr>
</tbody>
</table>

Average: 0.9704 0.9026 0.8729 0.6294

Table 5: Efficiency Performance of Rupali Bank Ltd.

<table>
<thead>
<tr>
<th>Year</th>
<th>Deposit</th>
<th>Loans and Advance</th>
<th>Operating Income</th>
<th>Net Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>0.9943</td>
<td>0.7823</td>
<td>0.7274</td>
<td>0.0011</td>
</tr>
<tr>
<td>2008</td>
<td>0.9152</td>
<td>0.8296</td>
<td>0.8785</td>
<td>0.5596</td>
</tr>
<tr>
<td>2009</td>
<td>0.8635</td>
<td>0.7892</td>
<td>0.1000</td>
<td>0.9708</td>
</tr>
<tr>
<td>2010</td>
<td>0.9932</td>
<td>0.9870</td>
<td>0.1000</td>
<td>0.2134</td>
</tr>
<tr>
<td>2011</td>
<td>0.9999</td>
<td>0.7656</td>
<td>0.1000</td>
<td>0.9777</td>
</tr>
<tr>
<td>2012</td>
<td>0.9992</td>
<td>0.7177</td>
<td>0.1000</td>
<td>0.9833</td>
</tr>
<tr>
<td>2013</td>
<td>0.9582</td>
<td>0.5501</td>
<td>0.1000</td>
<td>0.5376</td>
</tr>
<tr>
<td>2014</td>
<td>0.9431</td>
<td>0.9190</td>
<td>0.1000</td>
<td>0.9333</td>
</tr>
<tr>
<td>2015</td>
<td>0.9005</td>
<td>0.4066</td>
<td>0.1000</td>
<td>0.3200</td>
</tr>
<tr>
<td>2016</td>
<td>0.8784</td>
<td>0.4933</td>
<td>0.1000</td>
<td>0.0968</td>
</tr>
<tr>
<td>2017</td>
<td>0.9978</td>
<td>0.5965</td>
<td>0.1000</td>
<td>0.2234</td>
</tr>
</tbody>
</table>

Average: 0.9494 0.7124 0.2278 0.5288
Table 6: Comparative Study of Five Banks

<table>
<thead>
<tr>
<th>Name</th>
<th>Deposit</th>
<th>Loans &amp; Advance</th>
<th>Operating Income</th>
<th>Net Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dutch Bangla Bank Ltd</td>
<td>0.8340</td>
<td>0.8442</td>
<td>0.8330</td>
<td>0.9037</td>
</tr>
<tr>
<td>Jamuna Bank Ltd</td>
<td>0.9026</td>
<td>0.8929</td>
<td>0.9468</td>
<td>0.6230</td>
</tr>
<tr>
<td>Islami Bank Bangladesh Ltd</td>
<td>0.9704</td>
<td>0.9026</td>
<td>0.8729</td>
<td>0.6294</td>
</tr>
<tr>
<td>Janata Bank Ltd</td>
<td>0.9771</td>
<td>0.9788</td>
<td>0.9554</td>
<td>0.3330</td>
</tr>
<tr>
<td>Rupali Bank Ltd</td>
<td>0.9493</td>
<td>0.7124</td>
<td>0.2278</td>
<td>0.5288</td>
</tr>
</tbody>
</table>

From the above table it indicates that, In case of Deposit Janata Bank Ltd (0.9771) > Islami Bank Bangladesh Ltd (0.9704) > Rupali Bank Ltd (0.9493) > Jamuna Bank Ltd (0.9026) > Dutch Bangla Bank Ltd (0.8340).

In case of Loans and advance Janata Bank Ltd (0.9788) > Islami Bank Bangladesh Ltd (0.9026) > Jamuna Bank Ltd (0.8929) > Dutch Bangla Bank Ltd (0.8442) > Rupali Bank Ltd (0.7124).

In case of Operating Income Janata Bank Ltd (0.9554) > Jamuna Bank Ltd (0.9468) > Islami Bank Bangladesh Ltd (0.8729) > Dutch Bangla Bank Ltd (0.8330) > Rupali Bank Ltd (0.2278).

In case of Net Profit Dutch Bangla Bank Ltd (0.9037) > Islami Bank Bangladesh Ltd (06294) > Jamuna Bank Ltd (0.6230) > Rupali Bank Ltd (0.5288) > Janata Bank Ltd (0.3330).

Table 7: Relative satisfaction of Dutch Bangla Bank Ltd based on service gap

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Expected Score (Out of 7)</th>
<th>Perceived Score</th>
<th>Gap Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>6.13</td>
<td>5.38</td>
<td>-0.75</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>5.97</td>
<td>6.5</td>
<td>0.53</td>
</tr>
<tr>
<td>Assurance</td>
<td>6.22</td>
<td>6.88</td>
<td>0.66</td>
</tr>
</tbody>
</table>
The average SERVQUAL score of Dutch Bangla Bank Ltd is 0.164 which means customers are satisfied with their service quality which indicate the higher satisfaction of others bank.

Table 8: Relative satisfaction of Islami Bank Bangladesh Bank Ltd based on service gap

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Expected Score (Out of 7)</th>
<th>Perception Score</th>
<th>Gap Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>6.00</td>
<td>5.40</td>
<td>-0.60</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>6.30</td>
<td>6.10</td>
<td>-0.20</td>
</tr>
<tr>
<td>Assurance</td>
<td>6.20</td>
<td>6.50</td>
<td>0.30</td>
</tr>
<tr>
<td>Empathy</td>
<td>6.40</td>
<td>6.30</td>
<td>-0.10</td>
</tr>
<tr>
<td>Tangibles</td>
<td>5.50</td>
<td>6.50</td>
<td>1.00</td>
</tr>
<tr>
<td>Average gap</td>
<td>6.08</td>
<td>6.16</td>
<td>0.08</td>
</tr>
</tbody>
</table>

The average SERVQUAL score of Islami Bank Bangladesh Ltd is 0.08 which means customers are also satisfied with their service quality which indicate the 2nd higher satisfaction in comparison of others. But the bank could not generate a sense of reliability, responsiveness and empathy to its customer according to their customer expectation.

Table 9: Relative satisfaction of Jamuna Bank Ltd based on service gap

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Expected Score (Out of 7)</th>
<th>Perception Score</th>
<th>Gap Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>6.13</td>
<td>6.35</td>
<td>0.22</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>5.97</td>
<td>6.55</td>
<td>0.58</td>
</tr>
<tr>
<td>Assurance</td>
<td>6.32</td>
<td>6.50</td>
<td>0.18</td>
</tr>
<tr>
<td>Empathy</td>
<td>6.20</td>
<td>5.70</td>
<td>-0.50</td>
</tr>
<tr>
<td>Tangibles</td>
<td>6.50</td>
<td>6.40</td>
<td>-0.10</td>
</tr>
<tr>
<td>Average gap</td>
<td>6.224</td>
<td>6.3</td>
<td>0.076</td>
</tr>
</tbody>
</table>

The average SERVQUAL score of Jamuna Bank Ltd is -0.86 which means customers are dissatisfied with their service quality in every aspects of dimension. But the bank could not generate a sense of reliability, responsiveness and empathy to its customer according to their customer expectation.

Table 10: Relative satisfaction of Rupali Bank Ltd based on service gap

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Expected Score (Out of 7)</th>
<th>Perception Score</th>
<th>Gap Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>6.50</td>
<td>6.38</td>
<td>-0.12</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>6.00</td>
<td>5.00</td>
<td>-1.00</td>
</tr>
<tr>
<td>Assurance</td>
<td>6.10</td>
<td>5.10</td>
<td>-1.00</td>
</tr>
<tr>
<td>Empathy</td>
<td>6.20</td>
<td>5.11</td>
<td>-1.09</td>
</tr>
<tr>
<td>Tangibles</td>
<td>6.10</td>
<td>5.01</td>
<td>-1.09</td>
</tr>
<tr>
<td>Average gap</td>
<td>6.18</td>
<td>5.32</td>
<td>-0.86</td>
</tr>
</tbody>
</table>

The average SERVQUAL score of Rupali Bank Ltd is -0.86 which means customers are dissatisfied with their service quality in every aspects of dimension.

Table 11: Relative satisfaction of Janata Bank Ltd based on service gap

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Expected Score (Out of 7)</th>
<th>Perception Score</th>
<th>Gap Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>6.50</td>
<td>5.90</td>
<td>-0.60</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>6.10</td>
<td>5.58</td>
<td>-0.52</td>
</tr>
<tr>
<td>Assurance</td>
<td>6.10</td>
<td>6.00</td>
<td>-0.10</td>
</tr>
<tr>
<td>Empathy</td>
<td>6.00</td>
<td>5.30</td>
<td>-0.70</td>
</tr>
<tr>
<td>Tangibles</td>
<td>6.25</td>
<td>6.55</td>
<td>0.30</td>
</tr>
<tr>
<td>Average gap</td>
<td>6.19</td>
<td>5.87</td>
<td>-0.32</td>
</tr>
</tbody>
</table>

The average SERVQUAL score of Janata Bank Ltd is -0.32 which means customers are also very dissatisfied with their service quality in every aspects of dimension except of tangibles.
VII) CONCLUSION

Since this paper aims to evaluate the efficiency of five banks as a sample of first, second and third generation commercial banks and make a efficiency comparison. Efficiency is assessed in terms of operating income, net profit, deposits, and loans & advance. Here, on the basis of findings we may conclude that there is a strong relationship between the performance efficiency and customer satisfaction of banks clients. Third generation and second generation banks are doing well in terms of overall efficiency and customer satisfaction. First generation bank can improve their overall performance and service quality that help to make their customer satisfied and delighted which help them to survive profitability for the long run in the growing competitive banking industry. It is believed that the policy maker of bank can use the findings as an important index for and their improvement of service quality for wider acceptance and formulating effective marketing strategy. Efficiency results of first generation banks exhibit that, in terms of deposit, and loans & advance, operating income, net profit, the averages of efficiency performance of Janata Bank Ltd are 97%, 97%, 95%, and 33% respectively, those for Rupali bank Ltd are 94%, 71%, 22%, and 52% and for Islami bank Bangladesh Ltd are 97%, 90%, 97%, and 62%. Efficiency analysis for second generation bank shows that Dutch Bangla Bank Ltd is found to be, on an average, 83%, 84%, 83%, and 90% efficient in terms of deposit, and loans & advance respectively and that for third generation indicate that Jamuna Bank Ltd are 90%, 89%, 94%, and 62% efficient in terms of operating income, net profit, deposit, and loans & advance respectively.

A comparison of efficiency analysis implies that the first generation banks are in general less efficient in managing operating income and net profit than their second and third generation counterparts, while these first generation banks are more efficient in collecting deposits and providing loans & advance. In terms of earning net profit, Dutch Bangla Bank Ltd shows the highest efficiency and Janata Bank Ltd shows the lowest. Janata Bank Ltd holds the highest efficiency position in managing operating income, while Rupali Bank Ltd holds the lowest. Deposit collection efficiency of Jamuna Bank Ltd is the highest and that of Dutch Bangla Bank Ltd is the lowest. In providing loans & advance, Janata Bank Bangladesh Ltd earns highest place while Rupali Bank Ltd the lowest place. Results reveals that there are rooms for enhancing efficiencies, especially in managing more net profit and hence appropriate policy suggestions are required.

REFERENCES

Research Paper on “Customer Satisfaction on E-Commerce”

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Paper ID: ICBM-19-0537

Abstract – The purpose of this research paper is to determine the factor that explain customer’s satisfaction on E-Commerce. Secondary research and quantitative interviews were used to build the model of customer satisfaction. A structured questionnaire was employed to gather data and test the model. Sampling involved a random selection of respondent from internet survey form, students, teacher, service holder co-workers etc. Factor analysis and multiple regression were used to test the model. The regression model suggested that customer’s satisfaction on E-Commerce was influenced most by responsiveness and reliability of E-commerce market followed by Pricing. The E-commerce market should focus on two elements mainly which is responsiveness and reliability. This research helps to improve the business performance, and enhance their sound development. Now a days, local and international network on consumer psychology, inspiration and behavior have more focus on e-commerce. This paper is from the analysis the customer’s satisfaction on e-commerce.

INTRODUCTION

In simplest terms Electronic Commerce or E commerce is a narrowed version of E business where consumer and sellers can interact with each other along with other business supporting activities in object to buy and sell of goods and services in a platform provided online. The activities include Marketing, Customer Support and Transactions etc. The ability to made transaction for personal or professional use over the internet is known as electronic commerce or e-commerce [1] E-commerce is the exchange of information across electronic networks, at any stage in the supply chain, whether within an Organization, between businesses, between businesses and consumers or between the public and private sector, whether paid or unpaid[2] The world is now smaller. Smaller: to be connected with everyone, smaller: to be conducting our business within a second and smaller: to be impacted massively. And it has been all possible due to Internet. In today’s world, online shopping is becoming very much common with the advancement of technology and a connected community through Internet. People nowadays are very much busy in their day to day routine that they have no time to go to the markets to make a purchase. So, a big part of the population has shift to online shopping to make a purchase of anything they want. It’s easier to buy from online as there are varieties of products available and they offer home delivery which is not time consuming at all.

The history is E commerce in Bangladesh is quite interesting per se. Contrary to popular belief, the idea of ecommerce is older than mostly assumed. Back in the 90s, the idea of ecommerce surfaced with a serving a platform for Non Resident Bangladesh who were looking for an option to send gifts to their dearest one in the country. And from there, with a very slow pace, it gradually grew. Between 2000 to 2008 major issues were occurring related to payment gateway, delivery system and customer services. The problem started to resolve in 2008, when SSL Commerz initiates their business by being the first ever online payment gateway service in Bangladesh. This opened up a lot of potential opportunities and starting from this, we are now witness major players, both local and international, like Daraz, Ajker Deal, Kiksha, Bagdooom, Akhoni, Shaadmart etc impacting not only our lives but also our economy.

At current state, according to New Age, Bangladesh’s ecommerce sector is expected to grow at 70% valued at around 900 crore taka. According to the report of World Bank (WB), the economic growth rate of Bangladesh in 2017 is 6.8 percent and there is a significant contribution of e-commerce. Specialists predict that the number will increase in the nearest future and the reason is, by 2020, there will be 18.3 million internet subscribers in Bangladesh. Boston Consulting Group and Telenor demonstrate, 32% of the total volume of countries’ family will have at least one internet connection which will create a great impact on online purchase and e-commerce along with the economic contribution. Even though, the whole market consists of only 0.7% of nations retail market, based on trend analysis and analyzing similar situation in the neighboring country, we are expecting this sector to be flourished any time soon. Indicating this, we are seeing Major Global Players of Ecommerce like Amazon and Alibaba are on the verge of entering into our country opening up tons of possibility for both local consumers and sellers. This generation is massively expected to witness the evolution of technology and as the consequences in the business sector, ecommerce is a phenomenon. Within 5 years, this industry is expecting to be at peak of 2000 crore BDT with employing more than 75000 people.

E-commerce is nowadays a trendy growing sector but the stability and expansion of the business or industry is just a matter of time. After some years, the existing
companies will grow bigger than now. Seeing the success, more will be encouraged to start in future. So there will be a decent number of the companies in a certain amount of time span. This type of companies is now going through the embryonic stage, they are creating and expanding the target market and being familiar with the market. Basically, in this research we have tried to find the main research question “What are the factors that determine customer satisfaction in the e-commerce industry?” Given our geographic focus, we believe this study represents a small step in a series of needed studies to understand the bigger picture.

RESEARCH MODEL

E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals [3]. So, If the service providers do not pay attention to the dissatisfaction of their customers, then the customer’s negative word of mouth can create hindrance in their growth and ability to sustain in the long run. However, to complete this research on Customer satisfaction on E-Commerce we developed research model. To develop the research model we work on three independent variable and one dependent variable. The three independent variable are price, responsiveness and reliability and the dependent variable are satisfaction. Each one of the variables provides hypothesis and explains how it is related to the customer satisfaction in a research.

PRICE

Price is one of the most important factors which are unavoidable to earn customer satisfaction. Online shops are offering reasonable prices which make customers satisfied. So, Pricing is the most influential factor that fulfills the customer satisfaction. Price is the sum of all the values that customers exchange for the benefits of having or using the product or service[4]. Price should be set in relation to the delivered value and perceived value of the product Price also communicates the quality of the product.

In the beginning of E-commerce in, it was not that good; sometimes they gave bad quality products with higher prices. That time customers were very dissatisfied with online shops. However, E-commerce is now upgraded and offering reasonable prices with good quality products and services. Customers are satisfied with online shops now. So definitely price is one of the major factors. If the prices are higher, people of all the classes cannot afford. Because of reasonable price, busy people do not always go for shopping, they buy from online shops. Now people are satisfied and trust E-commerce.

Price is an independent variable and so we can hypothesize that:

H1: The lower the price, the higher the customer satisfaction.

RESPONSIVENESS

Consumer responsiveness can be considered to be based on a function of content relevance and channel acceptance disturbance [5]. It is the power to not only to discern, but also quickly to answer the altering needs of clients. The employees should follow customer instructions which are very important to track the employee behaviors. Sometimes customers do not get proper responses from few organizations and then the customers choose those organizations competitors. Same thing happens to the online shopping organizations, for example- customers are not getting the product in time or they want to take the service in a different time. It is believed that the customer responsiveness is crucial to business success. An organization whose focal point is on its customers, and is concerned about the significance of being responsive, will utilize all its reservoir, and educate its staffs to ensure that clients accept excellent assistance from the company or organization. A lack of responsiveness is probably one of the prime causes that clients quit a company or organization, which successively declines and eventually abolishes a business.

H2: Customer responsiveness positively affects customer satisfaction.

RELIABLE

In terms of E-commerce business industry, it refers to how much customers can rely on a service provider company or an organization. There are many business organizations that are providing their services online where the customers are not directly interacting with the service providers rather communicate and get the service online. If the customers cannot rely on the service provider and if they cannot maintain the consistency of the service, customer satisfaction will not be achieved and there are multiple options available for them to switch. The competitions between the competitors are getting tougher and the key to keep on the competition is to be reliable to the customers. Reliability is directly related to customer satisfaction and repeatability of it results in customer loyalty. When the customers invest their money in online service, they expect the best quality and repeatable consistency in the service they are getting. To meet the expectations of the customers they must design their services to achieve maximum customer satisfaction.

H3: The higher the customer reliability, the higher the customer satisfaction.

CUSTOMER SATISFACTION
Szymanski and Hise examined the factors that make consumers satisfied with their e-retailing experiences and found that convenience, site design, and financial security are the dominant factors in consumer assessments of e-satisfaction. Moreover, the state of satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as other products against which the customer can compare the products to shopping sites which match the predominant motives of customer have higher patronage and different product categories have different motives. In most of the time, once the customer is satisfied with one e-retailer or brand he doesn’t generally change to another one. So, All above are the factors that lead a customer satisfaction toward the service that is provided by the E-Commerce industry. And if those offerings that an industry provides that will obviously lead to customer satisfaction.

LIETRATURE REVIEW

E-Commerce is a field of trade with the utilization of various systems, for example, the Internet. So E-commerce gives online deals bolster tasks and client benefit. E-commerce can be preferred with electronic market where merchants (providers, or organizations, or shops), middle people (dealers) and purchasers, proceed in giving items and administrations in the virtual or advanced configuration, and pay the cash. All in all, it is an extensive articulation that implies any kind of business or business tasks including the trading of merchandise and ventures whenever by means of electronic channels and utilizing purported electronic installment doors. E-commerce can be accomplished through associating with the Internet, utilizing the charge card and having a location for transportation. E-Commerce offers numerous advantages; it isn't just for people yet additionally for the network of individuals and organizations to the plenitude of Internet get to and simple access to site through secure electronic installment channels. One of the essential objectives of E-Commerce is consumer loyalty. The intrigued organizations in consumer’s loyalty are the organizations that have notoriety and believability of helping spread and expansiveness of their business. The client is continually searching for quality and cost; in this manner, organizations try to win consumer loyalty by offering moderate costs and numerous administrations. As per the examination, the meaning of consumer loyalty has been broadly bantered as associations progressively endeavor to gauge it. Consumer loyalty can be knowledgeable about an assortment of circumstances and associated with the two products and enterprises. It is an exceptionally close to home appraisal that is incredibly influenced by client desires. Fulfillment additionally depends on the client's involvement of both contact with the association and personal experience results. A few analysts characterize a fulfilled client inside the private division as one who gets huge included an incentive to sum things up with a definition that may apply similarly also to open

RESEARCH METHODOLOGY

Since the main goal of this research is measuring the customer satisfaction on E-commerce, we have used and applied qualitative research technique to conduct this research. Qualitative research is designed to reveal a target audience range of behavior and perception that drives with reference to specific topic or issue. The results of qualitative research are descriptive rather than predictive; it’s more concern about human nature and human behavior.

A. Research design

This is a qualitative research, so its nature is more like descriptive. In the first step, we have collect data and information by qualitative method which help us to allow to find out the key factors and narrow down the key factors and the related item in this E-commerce industry, after that we do primary research, we have made a questionnaire based on customer satisfaction over E-commerce question, we are able to collect 94 respondent response. In the third step, for collecting some information about E-commerce industry, we use secondary data and also go through some research paper and journal on this same topic.

B. Sampling

For our research paper, respondents were selected randomly which means the respondents were not pre-determined and this basically is called non probability sampling. However, we have provided questionnaire by taking help of social media and our sample size is 94 respondents. Moreover, we have conducted all these things via Google survey form. All the 94 forms were completed and submitted by this technology.

C. Analysis

For this research factor analysis was conducted Promax rotation to examine how the selected measures loaded on expected constructs. As we know, all the components are correlated. But our target was also to contain maximum number of variables. That is why we choose pattern matrix to analyze our data. Two factors were recovered from the analysis, those are Reliability and Responsiveness.

D. Reliability

The reliability of each multiple item assessed by the coefficient alpha indicated in the diagonal table. Throughout the analysis, it has been thinking about the
Reliability check on Responsiveness Variable:

Reliability of items of Responsiveness is very well since the cronbach’s alpha shows its reliability up to the mark. It has 4 items.

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.871</td>
<td>4</td>
</tr>
</tbody>
</table>

Reliability Check on Reliability Variable:

Reliability of the items of Reliability was up to the mark. It has cronbach’s alpha of .712 which is very good and reliable.

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.717</td>
<td>2</td>
</tr>
</tbody>
</table>

Reliability Check on Customer Satisfaction:

Cronbach’s Alpha value of Customer satisfaction variable is more than 0.7, that means the model is reliable and good.

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.784</td>
<td>2</td>
</tr>
</tbody>
</table>

Validity

Validity is defined as the extent to which a concept is accurately measured in a quantitative study (Twycross, Alison, 2015). However, discriminant validity is one type validity which shows the table 1 the correlation between one scale and another is not as high as each scale’s coefficient alpha (andalleb,2006).

E. Regression:

We have run regression and found out the overview of full model, the significance of the model and coefficients of the hypothesis. In this segment, we indicate just the three principle tables required to comprehend our outcomes from the linear regression procedure, assuming that no suppositions have been damaged.

Model Summary:

The R value in this table which shows the simple correlation of .570 which indicates a very high degree of positive correlation. Besides the value of “R Square” shows 32.5% which seems very low.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Squared</th>
<th>Adjusted R Squared</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.570</td>
<td>.325</td>
<td>.300</td>
<td>1.9125</td>
</tr>
</tbody>
</table>

F. Co-efficient:

The following table shows, one of the variable in this research is Reliability. The significance of this variable is .000 which clearly defines that H1 is accepted as there is strong relationship between Customer Satisfaction and Reliability. Again, the significance of the variable Responsiveness .013 which shows that H2 is accepted and there is strong relation between Customer satisfaction and responsiveness. In other words, the third variable Price has the significance of .502 which is very high and defines that H3 is rejected as there is no relation between price and Customer Satisfaction.
In the paper multiple regression analysis was used with the three independent variables. To test the model for customer satisfaction to E-commerce market. The model was found to be significant as indicated by the F statistics which is \(p<0.000\). The regression model explains 32.5% of the variation in the dependent variable. Two of the three factors had a significant effect on customer satisfaction on e-commerce Market. These includes Responsiveness (beta value=.259, \(p<0.000\)), Reliable (beta value=.383, \(p<0.000\)).The results suggest that our modified model explain customer satisfaction of E-commerce reasonably well.

### DISCUSSION

This research study tested a model of customer satisfaction on E-commerce using the transaction specific framework. However, the result suggested that our model explains customer satisfaction and the E-commerce market should focus on two major elements which is Reliability and Responsiveness and this factor has to be treated as a strategic variable and enhanced. From the results it was determine that Responsiveness and Reliability was most important to customers rather than price. We believe our model is assessing customer satisfaction intention to the E-commerce market is a useful one. We also believe that if any online platform who are doing business over internet want to gain a competitive edge, they must continually strive to increase the level of customer satisfaction. By emphasizing the two significant factor discerned in the study and a suggested by the transaction specific model.

### CONCLUSION

“Responsiveness” and “Reliability” these two variables were emphasized more based on which customer retention and satisfaction is created. That means the customers more rely on reliability and product Responsiveness compare to price that lead the customers to satisfaction. As we have conducted this research within a very short given period of time, this might lack some necessary information. That is why it needs to go for a further research.

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Underlying causes of Skilled Migration: An analysis in the context of mid-level professionals of Bangladesh

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Paper ID: ICBM-19-0545

Abstract – The purpose of this paper is to identify the root cause behind the rapidly increasing migration of skilled workforce of Bangladesh, who are working as a mid-level employee in a company. With this purpose in mind, this research paper was constructed, based on the information accumulated from the primary research and secondary research. The findings of this paper may demonstrate a path towards the prevention of brain drain from Bangladesh and present a new avenue of study regarding the migration problem of Bangladesh.

Keywords – Migration, Skilled Migration, Immigration, Bangladesh, Challenges

I. INTRODUCTION

A 27 year old professional is currently working in the cash management operations department of a renowned private bank in Bangladesh. As an employee, He has been working diligently for the past 4 years for the bank. The department heads of the bank noticed his performance and dedication towards the department. Hence, they rewarded him with a position of associate manager, which was the highest position a person of his age group. As an associate manager, He was entitled to receive a monthly salary of BDT 60,000 taka per month, along with house fare, transport allowance and most importantly, a privilege to avail car loan at a relaxed interest rate, which the bank provides to its mid-level officials.

He should have been happy, considering that he was selected for the job from a candidate pool of around 40,000. More importantly, he got a job, in Bangladesh a country, where the unemployment rate was reported at 4.37% percent in the year 2017 [1]. Considering the total population of more than 180 million of the country, this amounts to a humongous population of 2.6 million people. Unfortunately however, with more rewards came more responsibility, as the bank where He worked, adopted a system, where the people from the branches had to simply collect the papers related to transaction and send to people like him, whose job was to complete the transaction from the back office. Since the number of people in this regard was very limited, He had to shoulder a huge responsibility every day, as it was a norm to complete the transaction within the day it was requested. Hence, he had to do overtime every day for around 3-4 hours. That too, without any payment as it was mentioned in the terms of contract, where he signed and acknowledged with this condition. The misery of this employee didn’t end there - Even though the office was closed for two days a week, he had to report on Saturdays quite often to complete several reporting related tasks to Bangladesh bank, the central bank of the country. Constant work pressure and overtime caused him to maintain a poor work-life balance. Amidst of work, he used to hear stories from his friends and peers about lifestyles in developed countries like Canada, where an individual person could easily lead a decent life with minimal effort. One day, after hearing one such stories from a gossip among the colleagues, He decided to apply for a permanent residency in Canada. While the authors are writing this paper, He has completed half of the required procedures, and is anticipating leaving the country, within the last quarter of the next year.

Even though he is one of the lucky few individuals to attain financial solvency and growth as a professional in Bangladesh, his situation is quite similar to countless other skilled professionals in this country, who forsake their accomplishment in search for a better life abroad for several particular reasons.

II. METHODOLOGY

This study initiated by identifying research question, which served as the compass for this paper. The study is based on Primary and secondary data and the method followed is an effort to gather diversity of information focusing on the topic which was collected from a variety of sources.

i) Question formulation:
The authors constructed this paper through seeking explanation for three questions: 1) what is the current scenario of mid-level employee’s migration from Bangladesh? 2) What are the initiatives the employers of Bangladesh are taking to retain employees? And 3) what can the companies in Bangladesh do to prevent migration of mid-level executives/workforce?

ii) Sources of Data:
Different papers were identified based on the topic via search engine for example, Google scholar, researchgate, JSTOR. Several academic paper were searched for topics such as, employer employee relationship, work-life balance in Bangladeshi Companies, pay and benefit practices in Bangladeshi companies and migration preferences and patterns among the Bangladeshi citizens and then information has been gathered. After collecting information from different sources this study reviewed those documents, along with the findings from primary data and summarized those information in the
Job security is also a critical concern for the employees, most notably, pharmaceutical companies, are beginning to realize the responsibility of employees, although some companies, particularly those in the private sector, are few systematic training practices for employee development. In general, training is considered the responsibility of the employer rather than an investment for organizational development, and in private sector organizations, there is a cost rather than an investment for organizational development. However, in the case of Bangladesh, the following pull factors and push factors were found applicable:

### iii) Analysis process:

The authors analyzed the articles attained by searching several reliable online sources. Articles with related objectives and insights were studied in order to get a thorough understanding of migration among the mid-level executives in Bangladesh. While studying the articles, the authors mainly assessed within the Bangladesh perspective to keep it concise and concentrated.

### Result:

Migration can occur as a result of push and pull factors. Push factors are negative home conditions that impel the decision to migrate. This can include loss of job, lack of employment opportunities, overcrowding, famine and war. Pull factors are those positive attributes perceived to exist at the new location. These include a chance of a better job, better education, and a better standard of living. [12] In the case of mid-level, educated workforce of Bangladesh, the following push factors and pull factors were found applicable:

#### i) Push Factors:

**Employer’s attitude towards employees:**

To understand the employer’s attitude towards employees, several aspects of the workplace environment have been assessed for this paper. Firstly, studies related to employee motivation in Bangladesh has been assessed. In one study, it was found that, the most important factor chosen by regular employees was good wages and salary (remuneration). The survey results reveal that good wages and salary, job security, interesting work, good working conditions were the four most important motivation factors for the regular employees. [2] However, apart from a few large organizations, employees’ pay or salary in Bangladesh is determined in an arbitrary way (e.g., through personalized pay contracts), rather than any formal structure or grade [3]. Appreciation is one of the most top desires of employees which motivate and keep them productive by enhancing their morale. [4] However, in the case of Bangladesh, Most private sector organizations tend to recruit relatives to top positions. Thus, practice related to promotion, transfer, and benefits are manipulated, according to social contacts and personal relationships. [5]

Training and development is another factor that is highly valued by the employees working in the Bangladeshi organizations. But, in Bangladesh, an economy with a huge labor surplus, training initiatives are considered a cost rather than an investment for organizational development, and in private sector organizations, there are few systematic training practices for employee development. In general, training is considered the responsibility of employees, although some companies, most notably, pharmaceutical companies, are beginning to understand its importance. [5]

Job security is also a critical concern for the employees working within the Bangladeshi companies. The large labor market means there is a permanent supply of employees, and organizations seldom find it difficult to recruit or retain suitable employees. [5] Thus, aside from few exceptions, employees working within these corporations have to operate with limited bargaining power and fear expulsion at the same time.

### Socio-economic condition of Bangladesh:

For the office-goers of Bangladesh, Surplus of labor is inducing a crisis for employees in terms of work-life balance. For instance, a study revealed that, Majority of the employees in private banking sector of Bangladesh are not familiar of this concept since their organizations (50% of the reviewed banks) don’t have any work-life balance policy. [6] A study conducted on the work-life balance issues of working women in Bangladesh reported that 38.5% of respondents often feel depressed which hampers both their personal and professional life. 48.7% of women feel depressed from time to time and 5.1% of women always feel depressed due to their imbalance work-life. [7]

Aside from difficulties in maintaining a proper work-life balance, rising cost of living throughout the country (Especially in Dhaka, the capital city of the country) has been a critical socio-economic factor that induces a migration tendency. According to the Consumers Association of Bangladesh (CAB), the cost of living for Dhaka residents has risen 71 percent over the period 2009–2016. This survey is based on a calculation of cost increases of 114 foodstuffs and 14 utility services (and does not include cost rise of education, health and daily travel). [8]

For some of the office-goers, the capital city itself is one of the many causes for migration. Dhaka City faces serious problems in almost all areas of its infrastructure, in its electricity supply, gas and fuel supply, water supply, sewerage and excreta management, solid waste management. Among all of these facilities electricity is possibly the best provided, yet there are areas of the city experiencing problems of inadequate supply, and most areas experience frequent breakdowns. [9]. But most prominently, in this megacity, people on an average spend 2.35 hours in the traffic of which 1.30 hours are due to traffic jam. [10]. Furthermore, in the last 10 years, average traffic speed has dropped from 21 km/hour to 7 km/hour, only slightly above the average walking speed. Congestion in Dhaka eats up 3.2 million working hours per day. [11]

#### ii) Pull Factors:

**Financial Solvency:**

- **Congestion in Dhaka:** People spend an average of 2.35 hours in traffic, of which 1.30 hours are due to traffic jams. [10]
- **Traffic speed in Dhaka:** The average traffic speed has dropped from 21 km/hour to 7 km/hour, only slightly above the average walking speed. Congestion in Dhaka eats up 3.2 million working hours per day. [11]
Better opportunities for financial solvency played a big part in the migration of professional workers from Bangladesh. And the result has been generally favorable for them. For instance, in USA, Bangladeshi diaspora households had a slightly higher median annual income than U.S. households overall: $54,000 versus $50,000. Thirty-two percent of Bangladeshi diaspora households reported annual incomes above $90,000, the threshold for the top 25 percent of the U.S. Households and Fifteen percent of the Bangladeshi diaspora households had annual had annual incomes exceeding $1,40,000, the threshold for the top 10 percent of U.S. households. [13]. In UK, another preferred destination for these mid-level professional workers, employees with Bangladeshi origin received an average hourly pay of 11.42 GBP in 2016. [14]. In terms of the exchange rate from British Pound to Taka in December 2016 (1 GBP = 99.62 BDT), this translated into around 1137.66 Taka per hour, which is significantly higher than BDT 520.83, an estimated amount a senior professional with BDT 1,00,000 per month salary is currently earning, (provided that he works for 5 days a week, for 8 hours per day.). Similar situation prevailed in Australia, where at the time of the 2011 Census, the median individual weekly income for the Bangladesh-born in Australia aged 15 years and over was $521. [15]

**Improvement in Lifestyle:**
Lifestyle plays a role in much migration in terms of the style of life a migrant imagines can be lived in the new destination, which in turn partly shapes the way of life actually lived after migration. Migrants are often (though of course not always) active agents in their migration, and prior to migration they are likely to project into the future ideas about where they are going and to imagine themselves living there. [18]

A study conducted by Dannecker captured this perception as aspirant immigrant stated that All aspirations and hope for a better future are projected on ‘a temporary life outside Bangladesh’ and change and development ‘are not processes that seem to be possible locally’ [19]

**Findings from the primary research:**
For the purpose of this research, a web based questionnaire was developed, which was circulated among 56 mid-level professionals, working in various local companies, banking sectors, multinational companies and in other sections. However, due to the time constraints, only 11 respondents were able to share their viewpoint for this paper.

Considering the graphical illustration generated from the responses provide by the participants, it is evident that, majority of the participants wished to migrate, as the 72.73% of the participated expressed their desire to migrate within the next 6-12 months. Regardless of their response to the decision to migrate within the next 6-12 months, respondents were asked to share their preference for their future destinations. In this case, most of the participants expressed their desire to migrate on North American countries, as 45.45% of the participants selected from that particular option. Apart from North American countries, contributors preferred oceanian countries, as 27.27% of the respondents chose the “Oceania countries” option. Surprisingly however, none of the individuals showed an interest to move towards Asean and East Asian countries. At the later stages of the paper, participated were asked to rank from the possible causes of migration, defined at the beginning of this writing. After collecting their response and performing a weighted average calculation, it was found that the key driving force behind their migration desire was the pursuit of the better lifestyle, followed by better career solutions and better pay and benefits, as the 60%. 44.44% and 60% of the respondents denoted the aforementioned response as the “first priority”, “Second priority” and “Third priority” respondents respectively.

III. DISCUSSION
After analyzing several different secondary sources, the authors of this paper found differences in the migration preferences within the different classes of people in Bangladesh. For example, the current major destinations of Bangladesh migrant workers include Bahrain, Kuwait, Oman, Qatar, Malaysia, Singapore, Saudi Arabia, and United Arab Emirates. Jordan and Lebanon are key destinations for female workers. [16]. Of these countries, Bahrain, Lebanon, Oman, and Singapore are among key destination countries to which Bangladesh has supplied labor, workers, private service, construction workers, farmers, cooks, drivers, tailors, waiters, and salespeople from 2005 to 2012. [16] Statistically, only 26 percent of its population lives below the national poverty line of US$ 2 per day, but a substantive percentage remains unemployed or underemployed. To evade...
poverty, unemployment, and underemployment, many Bangladeshis migrate to other countries. [17]

However, the scenario is entirely different for the Middle class, skilled professionals, who are working in local conglomerates, banks and in MNC’s. For Instance, even though the secondary findings presented the tendency of Bangladeshi migrants to move abroad in the Middle Eastern countries like: Bahrain, Saudi Arabia and in ASEAN countries like: Malaysia and Singapore, Middle-class, skill based professionals who participated in our survey expressed to move on countries located in North American and Oceanian regions.

Even though the prospects of better pay and benefits have been a critical factor behind their rationale towards migration, the skilled mid-level workers are mostly inspired by the idea of attaining a better lifestyle – prospect of attaining a healthy work-life balance, less polluted environment and the relief from the din and bustle of a densely populated city has been the most alluring fact for these group of people.

Conclusion

Being one of the major source of foreign remittance of the country, the migration of the people of Bangladesh has become an important topic for exploration. Unfortunately however, very little emphasis has been provided to understand the migration pattern of skilled, mid-level workers of Bangladesh, whose migration can only mean a crisis of skill in every nook and corner of the business environment of the country.

As seen in this study, supported by the primary research conducted, the migration of the skilled, mid-level work force of Bangladesh is not a problem which is related to pay and benefits - The pattern that can be commonly seen among the migrant workers. Retention of these expert workforce is heavily reliant on those factors that can ensure a better work-life balance for these individuals and the population of the Bangladesh as a whole. Thus, the participants of this research paper recommend a further analysis into this matter to avoid a severe form of brain drain from the country in the future.

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Digital Supply Chain in Academic Organizations: A Requirement Model

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Abstract – The supply chain is today one of the most important business processes for most companies. It is also a fact for the companies that produce and distribute products/services. Academic supply chain is an institution that manage and distribute the graduates in real work life or in similar institution. In fact, such supply chains must be treated more precisely. Research shows that companies that successfully complete the digital supply chain will reduce costs by an average of 20% while increasing revenues by 10%. There are several key factors in the transformation of the traditional supply chain into the digital supply chain. The key is to understand the client; This is the society in the Academic Supply Chain. The development of the Digital Supply Chain (DSC) may be the most important and most valuable conversion any organization faces and will go through in the next decade. With this, the costs of the front panel fins, the acquisitions and the production control are focused on the traditional tasks centered on the client. The traditional processes of the supply chain have some constrain to do proper management in academic supply chain. With the introduction of Industry 4.0, this transformation proved to be more relevant to the management of the digital supply chain. Different industries are moving towards the management of the digital supply chain, although supply chains are very complex. The objective of the research is to explore the possibilities and forms of digital transformation of the traditional academic supply chain and a requirement model process for the academic supply chain.

Keywords – Digital SCM, Academic Supply Chain, SCM Maturity, SCM Metrics, Digital Requirement Model.

I. INTRODUCTION

The Digital Supply Chain (DSC) is a customer-oriented platform model that captures and maximizes the use of data in real time from various sources. It allows the simulation, comparison, detection and management of the demand for performance optimization and risk minimization (DSCI). The fundamental advantage of the digital supply chain is that it offers exceptional performance to customers. The DSC allows you to create products and services that have a greater knowledge of the needs of your customers with greater efficiency and accessibility on the site for customers [2]. Companies that are currently turning to the type of supply chain in the front, create a much closer and deeper relationship with customers.

II. DIGITAL SUPPLY CHAIN

The Digital Supply Chain (DSC) is a customer-centric platform model that registers and maximizes the use of real-time data from various sources [1]. It allows the stimulation of demand, reconciliation, perception and management to optimize performance and minimize risk. An important advantage of the digital supply chain is that it offers exceptional performance to customers. DSC allows you to create products and services that are up to date with an updated knowledge of the needs of your customers in areas with efficiency and quick and easy access for customers [13]. The digital supply chains contain important information that allows the delivery of quality products to the customer with quality and quality to support the fast and easy return of these products at the end of their useful life. This is the promise and rapidly changing reality of the DSC. They are fundamentally different from traditional supply chains, which focus on minimizing the costs of institutions [12].
III. CONCEPTUAL FRAMEWORK

In Figure 2, an integrated form of university education management is mentioned in this research. The university is supported by an adequate educational management. It provides quality results to society. The researchers present three levels of decision making, which include strategic, planning, and operational levels for the university's education and research areas [15]. Each level consists of two parts, namely the development and evaluation of both wings. Development and evaluation are carried out simultaneously. The evaluation at several levels guarantees the satisfaction of the interested parties in this model [5], [6]. There are two entries, namely, students and research projects, and two outputs, that is, graduates and research results in this model. Four aspects, namely the creation of programs, the university culture, the skills of teachers and facilities, will be considered in the development and evaluation of education and research [9]. The results of the university are given until the end. Based on three levels of decision making, there are some examples of focus on four aspects of university education and research. The development and evaluation of the wings of university education [7]. On the other hand, this research presents examples of the development and evaluation of research activities in universities.
IV. RESEARCH PROCESS

Is this section we demonstrate description of methodology This research is compromises of four (4) main phases, which are:

1) Theoretical Study The theoretical study is performed by reviewing the literature in order to identify the issues and gaps related to the domain of the study. Consequently, the main ideas were gained through the literature by reading the printed and online references. In addition, the current issues of academic supply chain and digital supply chain integration is identified from the supply chain expert opinion [16]. Once the information has been gathered an analysis will be conducted on existing educational institution, which will lead to the factors of academic digital supply chain management.

2) Construction of academic digital supply system in education industry in this stage, the construction of a digital supply chain will be conducted using the identified parameters. Specific steps were developed for the digital academic supply chain. It involves three steps which are:
   i. Develop the industrial academic management.
   ii. Quantify the academic elements.
   iii. Digital supply chain system

3) Development requirement model Using the result from the previous phase, the integrated approach will be developed. This is the critical phase in this research. This phase comprised of several steps. These include:
   • Factor analysis academic
   • Impact of digital academic industry
   • Academic supply system introduces digital supply chain during this phase, a modeling tool such as PLS will be required to support and calculate the factors implement of academic digital supply chain in education industry.

4) Develop requirement model use UML The proposed integrated model will be evaluated and analyzed using several techniques, which are case study and expert review.
   • Case study The proposed integrated will be applied and validated at the selected organization. Case study will be carried out to test and evaluate
   • Expert reviews to digital academic supply chain in retail market.

DATA COLLECTION

The research is based on secondary data, including an online database, journals, conference documents, digital libraries, white papers, etc. The guidelines for the transformation were clearer in the article by industry professionals [10]. The research highlights traditional metrics, the maturity assessment of SCM and describes new digital metrics that allow the transition to a more traditional digital supply chain for the traditional academic supply chain [14].
MODEL EVALUATION

The researchers pointed out 6 hypotheses to verify the educational management model for digital academic supply chain management for institutions [8]. Hypothesis 1 stands for education development, hypothesis 2 for education assessment. Hypotheses 5 and 6 represent research development and research assessment respectively. Hypotheses 3 and 4 stand for graduates and hypotheses.

V. DISCUSSION

From the literature review and conceptual model, quality graduates and researches would be produced through proper development and appropriate assessment [11].

The quality of education is quite vague and contradictory. Philosophy in research and political debate. Other people, the definition may be different, and therefore the They can be indicators used to describe the quality of education [3], different. Some may highlight the quality of the inputs. Educational systems, while others emphasize the importance of Processes and results. It does not matter if you mean it. Input, process, result or all of them the quality of education is often associated with compliance. satisfy strategic needs Circumscriptions (for example, parents, university, faculty) Members, students, employers, etc. Requirements and expectations of strategic groups. The quality of education [4]. As follows: “The quality of education is the nature of the series. Input elements, continuous and output elements. An educational system that provides a complete service. Internal and external strategic groups Express and implicit expectations.

VI. CONCLUSION

This research is the first large-scale empirical study that systematically examines the contributions, products and processes of higher education institutions through education and research management. This empirical study was based on 435 participants from all stakeholders, including experts and administrators, instructors and university staff, employers, graduates, etc. There is ample evidence that higher education is one of the most important institutions in society. Higher education offers benefits for both society and society. Individual benefits include prosperity and a better life for those who receive education; The social benefits are generally in terms of economic growth and social welfare. Therefore, this educational management model provides fruitful results in terms of value-added graduates and significant research results in society.

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Women’s Liberation in the Industrial Sector of Bangladesh

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Abstract – Bangladesh is emerging as a country which encourages female participation in the workplace. With this view, this paper analyses the different aspects that are responsible for the inopportune women workers in Bangladesh. Female workers are employed in different categories of jobs like cleaner, operator, finishing helper etc. In nature, these jobs are very monotonous. Because of the nature and circumstances of their jobs, female workers tend to lose their interest in work and become discouraged and demotivated. Again, a large number of female workers’ job gets affected with the issue of fitness of post-maternity benefit circumstances. The communication problem is also a major problem faced by most of the female workers in the way that they are denied of the right to freedom of association, right to collective bargaining etc. A long-distance travel and family maintenance is not only physically strenuous but also mentally stressful. Their ‘overtime’ work has a major effect on their family life as well as in the working environment. Long working hours result in a number of illnesses and diseases like headache, eye trouble, earache, musculoskeletal pain etc. In addition, women are exploited easily due to lack of training and awareness which hinders them in acquiring technical knowledge.

Keywords – Women workers, Law for woman worker, Current position in Bangladesh, Women education, Steps to improve their position

I. INTRODUCTION

The industry is the key sector of Bangladesh’s economy in terms of employment, production and foreign exchange earnings and industrial production and services growth remained resilient (World Bank 2018) [1]. According to the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) [2], there are at present more than 4560 garment factories contributing about 83.49% of the country’s export earnings and 4.00 million workers employed here. This success is greatly attributable to women workers, who account for the large share of the total labor force employed in the sector and the rate is higher than the South Asian average [3]. Looking at the statistic it may consider that many women in Bangladesh have entered the labor force in recent years. In Bangladesh, women have legal protection in formal sectors that are governed by the Bangladesh Labor Act 2006 (hereafter: 2006 Act), which was subsequently amended by the Bangladesh Labor Act 2013. This Act incorporated a framework regarding rules and procedures to get benefit from an employer and for an employee (worker including man and woman).

This paper aims to highlight the underlying reasons that limit and undervalues women’s participation in Bangladesh in general which has a major reflect regarding liberty of a woman in the industrial sector. The specific objectives of this study are to review the rules and areas regarding the benefit specifically for women, to what extent do these rules give a protection i.e. current position of a woman worker by identifying the barriers of women worker to establish their position in the industry and possible remedy in promoting women’s participation in the industrial sector.

II. METHODOLOGY

Given the above objectives of the study, both qualitative and quantitative approaches have been adopted. Qualitative data have been collected from the secondary sources which have been reviewed are books, journals, reports, articles and data from various sources. On the other hand, quantitative data have been collected from the different trade union federations through the registers of respective federations, Bangladesh Garment Manufacturers and Exporters Association, Bangladesh Bureau of Statistics and World Bank etc. While both data have revealed the present gender equality situation in the industrial sector and identified the barriers and problems to and possible remedy for promoting women’s participation in the industrial sector in Bangladesh. Thus, the methodology of the study depends on information collected from both primary and secondary sources.

III. RIGHTS OF A WOMAN EMPLOYEE UNDER BANGLADESH LABOR ACT

A. Maternity benefit:

Chapter IV of the Bangladesh Labor Act 2006 [4] discussed the eligibility and conditions of getting the benefit. s. 45 of the 2006 Act confirms that no employer and no woman worker can work during the 8 (eight) weeks the immediately following the day of her delivery. The Act also states that women worker will get consideration for going back to work within 10 weeks of the delivery of a child [5]. Women will not get such a benefit if she has 2 (two) or more surviving children.

B. Discharge, Dismiss, removal:

There is a provision for discharge, dismiss or removal within 6 months before and 8 weeks after the delivery - with or without notice – for getting maternity benefit. A
woman worker will not be deprived of the maternity benefit if the employer terminated her without notice [6].
C. Maximum weighted – lifted, carried or moved:
There is a provision to make rules [7] regarding maximum weight for lifted, carried or moved in an establishment but there is no specific weight for woman.
D. Room for children including play ground:
The provision [8] includes, in every establishment, where 40 (forty) or more female workers are ordinarily employed, one or more suitable rooms shall be provided and maintained for the use of their children who are under the age of 6 (six) years, provided with adequate accommodation, light and ventilation and shall be maintained in clean and sanitary condition, and shall be under the charge of an experienced or trained woman for the care of children.
E. Working hours –limited hours of work:
As a rule, no adult worker shall ordinarily work or be required to work in an establishment for more than 8 (eight) hours in a day, even for overtime any such worker may work in an establishment up to 10 (ten) hours also in a day [9]. No woman worker shall, without her consent, be allowed to work in an establishment between 10 O’CLOCK at night and 6 O’CLOCK in the morning [10].
F. Conduct toward women:
Where any woman is employed in any work of any establishment, whatever her rank or status may be, no person of that establishment shall behave with her which may seem to be indecent or unmanners or which is repugnant to the modesty or honor of that woman [11].
G. The Penalty for contravention for maternity benefit by an employer:
According to S.286 of the 2006 Act [12], if any employer contravenes any provision of maternity benefit, he shall be punished with fine which may extend to 25,000 (twenty-five thousand) taka.
H. The Penalty for working during permitted period of absence (woman worker):
If a woman does any work for cash or kind during the period when she has been permitted by her employer to absent herself during the maternity period, she shall be punished with fine which may extend to 1,000 (one thousand) taka [13].

IV. THE FORCES DRIVING CHANGE: BARRIERS AND TRENDS
The 2006 Bangladesh Labor Law, which has regulation to protect the fundamental, rights of women workers, including the right to maternity leave. At the international level, Bangladesh has ratified the UN Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), as well as ILO Convention on Discrimination in Employment and Occupation. Though the reality is that, despite such legislation, women workers’ rights are not maintained. In many cases, women workers perform at minimum or underpaid jobs, face severe labor rights violations and do not enjoy their legal entitlements. Statutory maternity rights are poorly provided, overtime is compulsory and excessively long working days add to the burden of domestic responsibilities, denying women any rest periods or time with their children [14]. Social attitude is an important impediment to female labor force participation in Bangladesh. Including this there are different other reasons behind hindering the rights of women worker in the industrial sector which are discussed below:

a) Lack of Education and Skill:
Education and skill are one of the major parts in the industrial sector when demand side is being considered. These will result in a change of an individual’s attitude. Female education raises their employability in enterprises using modern technology and this will lead to a rise in the level of wage. In Bangladesh, the level of education of a woman worker is not so high and the labor force participation rate of women rises with education almost continuously. Therefore, because of lack of education and skill a woman worker is generally used to resort only to the inferior categories of employment, namely, casual and daily basis work and may lose their interest and become discouraged and demotivated.
The statistic shows that the literacy rate in Bangladesh has raised remarkably to an all-time high of 72.76% in 2016 but a large amount of girls drop out in the age group of 15-19. Compared to male, females’ dropout rate is increasing, in 2015, in secondary level the girls dropout rate was higher than male, and the position was 45.92%. In addition, in the year 2011 the gap between male and female was only 1.27%, whereas the rate increased to 7.77% in year 2015 [16].

B. Childcare and other family-oriented policies – child facilities:
It is one of the important aspects because of which it becomes difficult for a woman to manage to free up a significant amount of a woman’s time for allowing them to enter the labor force more easily and even more difficult to enjoy perfect health. Therefore, the annual earnings of women working become less when the children are young. Sometimes because of the necessity of money and for security of job women workers have no other alternate option but to do overtime and excessively long working days that add another burden of domestic
responsibility, consequentially denying women any rest period or time with their children or family. According to the statistic, as many as 641 workers complained that they have no child facilities in their workplace [17] and it became difficult for a woman worker to send their child to stay with their parents in the rural area or to use day-care or pre-school due to the fact that they are unable to afford them at such a minimum wage.

b) Poverty:

Poverty is expected to act as a push factor in the female labor market. The poorer women may be in a desperate situation and would be willing to work if it enables them to earn a livelihood. On the other hand, because of the economic situation women from poorer households usually enter the labor market without any school education. In reality, certain types of employment, especially salaried employment in the formal sector, need some minimum education. Therefore, because of the lack of education, the poorer women will not have access to such salaried employment. They are likely to resort only to the inferior categories of employment, namely, casual and daily basis work. Poverty can also act as a negative force on wage. This can be attributed to lower productivity and lower bargaining power of poor women. This, in turn, leads to lower earnings. Poverty is one of the important feature because of which a women worker used to compromise with their wages and working environment. Sometimes for saving money women used to walk to reach the industry that has a affect to their physical as well as mental conditions and they become stressful.

For mitigating the basic needs such as housing or rising food costs, the majority of women need to work further with paid overtime. Statistics show that 32% of women worker work a massive 100-140 hours of overtime, while 30% work 60-100 hours [18]. Whereas, the law should not allow daily working hours that exceed 10 hours.

c) Lack of awareness:

The Constitution of Bangladesh guarantees equal rights to women and men, labor laws are in place to safeguard women’s rights but lack of awareness of the most of the women worker has been the breakthrough of their rights [19]. According to World Bank report a large part of women worker (approximately 80% of garment workers are women), are unaware of the full legal entitlement about their rights [20]. Even those workers who are aware of their rights struggle to understand the complex procedure necessary to determine what they are entitled to and how can they get those support.

d) Maternal health – Ante-natal and post natal – the final stage of pregnancy and Post stage of pregnancy:

The various aspects related to maternity impose a substantial burden on women’s time, specifically biological burden uniquely borne by women in terms of health. Therefore, fertility is very important part of the women worker’s participation. Indeed, there is strong evidence of a causal link between fertility (having children) and labor market outcomes (participation, employment, wages, etc.). In a recent study Lundborg, Plug and Rasmussen (2017) [21] show that women who are successfully treated by IVF (in vitro fertilization) in Denmark earn persistently less because of having children. Not only other country, it is also very evident that the majority end up being fired by their employers when they become pregnant or sent on leave without payment and therefore they are forced to work during the final stages of the pregnancy [22] even after post stage of pregnancy. Statistics show that 60% women workers reported concerns over long period of separation from their children, particularly for women with young children who are breastfeeding [23].

Again, it is very rare that a woman enjoys ante-natal and postnatal care unless a woman suffers particularly serious medical complications. As a consequence, woman worker and young children both suffer and sometimes it causes physical and mental harm which affects their future development. In addition, there is no indicative provision regarding the discharge, dismiss or removal after 8 weeks of the delivery, which may become sometimes advantageous for employers. The employer can discharge a woman worker by giving reasons for her physical incapability or fitness.

e) Labor-unpaid employment:

According to the general concept ‘employment’ also includes self-employment, which means that in principle, the labor force includes anyone who supplies labor for the production of economic goods and services, independently of whether they do so for pay, profit or family gain [24]. Therefore, the unpaid activities should be excluded if they lead to services or goods produced and consumed within the household, on things like “Preparation and serving of meals”; “Care, training and instruction of children”; or “Cleaning, decorating and maintenance of the dwelling”. By considering this concept, it may be argued that this is as a cultural norm, Bangladeshi women carry out the burden of unpaid domestic work done early in the morning or late in the evening and are excluded from the labor force statistics. Again, at all levels, men are dominating by 24 to 72 percentage points – with largest share (86%) in plant and

Machine operating occupations and managers and compared to men, women are mostly engaged in crafts (38%) and then in agriculture, forestry and fisheries (35%) [25].

f) Lack of women’s participation in Trade Unions in Bangladesh:

The current trade union structures and policies are not geared towards empowering women to participate more in numbers and contribute more effectively. Sometimes the male trade union members are not so cooperative in bringing women to leadership positions. Again, in many times, female workers show the lack of interests though attributable to general social perceptions of women’s role in the development process because of household chores, some participants even felt that the under-representation of women in trade unions were due to the low capacity of women in trade unions activities.

In Bangladesh, there are three-tiers of trade union levels, which are (a) basic unions at the establishment level; (b) industrial unions at the sectoral level; and (c) national unions. According to the Register of Trade Unions, in Bangladesh, there is a total of 32 national federations which has 6,967 unions and a membership of 21,56,307 of whom only 2,49,092 comprises of female workers which means that the average is 14.42% [26].

V. STEPS TO IMPROVE THE CURRENT POSITION IN BANGLADESH

Awareness is one of the best ways to prevent the right of women worker. It is necessary to create social awareness among mass people including the girl and boy and their parents or guardians, husband and wife, other relations at all level of the society. Awareness is necessary to send the children to school, improved educational opportunities for children, and community mobilization to create a common sense of responsibility that protects the rights of a girl and woman. Awareness generation can be done through national campaigns, public meetings, media publicity, workshops, community forums, etc., that the people should be made fully aware of the right of the women worker.

Education is another way to develop an individual attitude and right to education is the fundamental human right of every individual irrespective of gender. Some people in our society do not understand this but we must realise that if one woman is uneducated then close to half of the population is uneducated. In addition, because of a girl’s future prosper it is very important to educate and develop her skill. In Bangladesh, many working age population are unemployed, among them, the rate is the highest among women of all age levels [27]. Without education, it will be difficult to improve the standard of the job level. To develop this aspect, it is necessary to prevent the social impediments, for example, child/early marriage, early/teenage motherhood and health status. It is necessary to increase the Trade Union’s activity and ensuring a balanced representation of women in trade unions’ decision-making bodies is an important indicator of women’s involvement and will ensure women’s empowerment. This is more important to become a strong organization by increasing the overall trade union representation specifically for women.

VI. CONCLUSION

Bangladesh has a population about 158.90 million (as on 1st July 2015), the ratio between male and female is close to half of the population. Therefore, education of girls, women are not only afforded to the rights of them but also to the society. We should ensure the fundamental rights of them according to the opportunity to go after their dreams and aspirations. The future of society will be much brighter when the younger generation has a good foundation for success.

In Bangladesh, there are two trends in developing position: rising female education levels and rising female labor force participation. These trends are interrelated, with gains in female education contributing to the increases in female labor force participation, which will change the position of the women worker and has shifted upwards enough that female labor supply has increased. As economic conditions continue to change in ways that promote female labor supply; both directly, as countries enact policies to end legal discrimination against female workers reduce the time cost of home production and child care, and indirectly, as reductions in trade costs accelerate the shift away from brawn-based activities to light manufacturing or services [28]. The basic requirements of liberty for a woman worker are being educated and skilled. After taking proper education women can develop their skill, can release themselves from the impediment of the working environment. They will get the freedom/option to change the nature of the job and they can motivate themselves to do interesting work.

For ensuring the liberty of woman employee, strict implementation of labor laws is essential to prevent exploitation both by the employer and the employee. It is necessary to secure the security to implement strict measures to control the situation, the working hours, maternity benefit (antenatal and postnatal), room for children etc. The Government may consider the number of the child for giving this benefit and that can be half of the benefit. In the Labor law, the provision indicates what types of conduct one should not do but there is no indication what a woman will do or procedure if she suffered by such kind of conduct. In addition, the labor law indicates that a woman worker need to give her consent if she wants to do work in between 10 o’clock at night and 6 o’clock in the morning but there is no indication whether she can get any facilities (transport/
It is difficult to give full satisfaction for both work and family conditions under which the married women employees experience conflict between their roles. There is a need to consider the working environment, job satisfaction, family support and the number of working hours in future development. In order to attain an in-depth understanding of one's work and family life, including multiple perspectives such as job stress, quality of life, mental health, and work demands. It is clear from this current study that married women employees indeed experience a conflict between work and family while attempting to balance their work and family lives. In addition, because of other obligations, it becomes difficult for a woman to get higher education and skill. Thus, Government, Trade Unions, different organizations like NGO etc. need to formulate guidelines for the management of work-family conflict since they are related to job satisfaction and performance of the employees. For this purpose, it is important to arrange different types of training sessions to increase the awareness of the individuals of the society for changing the structure of the cultural and social norms and policies from the prospection of a woman.

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Impact of Household and Natural Resources Characteristics on Adaptation Behavior Case of Tropical Cyclone: In Coastal Areas in Bangladesh

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Abstract – Coastal Areas in Bangladesh frequently experience natural calamities. It is becoming increasingly a great challenge for the Government to provide proper and immediate support to protect coastal communities from the natural disasters, especially cyclones. This paper aims to find out the characteristics that influence the household decision behavior for the self-defensive adaptation strategies against severe cyclone events. For empirical analysis, the multivariable linear regression model was applied. The empirical result shows that the major characteristics influencing the adaptation cost of a household’s self-defensive strategies against severe cyclone events includes household income, public adaptation programs, location of the house, natural forest protection, NGO services, and access to loans. Remittances also have impact on household’s adaptation behavior. This study finds that households living inside polders, and under natural forest protection, spent less on adaptation against cyclones. However, findings do not support significant impact of remittance on household’s adaptation decision.

Keywords – Household and Natural Characteristics and Household’s Adaptation behavior.

I. INTRODUCTION

Natural disaster is the result of a natural hazard that negatively affects the environment and leads to financial, environmental and/or human losses. These losses depend on the capacity of the population to support or resist the disaster and their resilience capacity (Hossain and Miah, 2011). Today, soil erosion, floods, droughts, and pollution threaten the livelihood of 2.6 billion people. (UNDP, Annual Report, 2007). Coastal communities in developing countries are more vulnerable to tsunamis, hurricanes/ cyclones, tidal bores, and other large storms due to their high population density and abject poverty (World Bank; 2010, IPCC, 2014a). When natural disaster occurs, developing countries suffer more than the industrialized countries. It is said that more than 95 percent of all deaths caused by disasters occur in developing countries; and losses due to natural disasters (as a percentage of GDP) are 20 times greater in developing countries than in industrialized countries (World Bank, 2009).

According to IPCC, AR5, by 2050, 27 million Bangladesh’s population is predicted at risk of sea level rise. The analysis of NAPA (National Adaptation Plan of Action), demonstrated 0.14 meter, 0.32 meter and 0.894 meter rises in the sea level of the coastal zone of Bangladesh by the year of 2030, 2050 and 2100 respectively (UNDP 2007). Asia Pacific Disaster Report 2015 has shown Bangladesh one of the most vulnerable among 15 countries with high exposure to and its risk position is 10th in terms of Exposure and 5th is terms of risks (IPCC, AR5). Besides, tropical cyclonic storms have always been a major concern to coastal plains and offshore islands of Bangladesh. In the last 200 years, 70 major cyclones hit the coastal belt of Bangladesh (Dhaka Tribune, 2017).

Since the frequency and severity of such natural disasters, especially Tropical Cyclones, are expected to rise due to global climate change, it is becoming increasingly difficult for the governments to support enough public initiatives to properly protect coastal communities (IPCC, 2014a, World Bank 2010). As a result, Coastal Communities in developing countries like Bangladesh, face considerable challenges regarding how to manage their response to actual and anticipated damage from future storm events (IPPC 2014b, Mahmud and Barbier, 2016; World Bank, 2010). However, private defensive strategies to avert and mitigate storm-inflicted damages might be influenced by the presence of public disaster relief and rehabilitation programs (Lewis, and Nickerson, 1989, Mahmud and Barbier, 2016), the level of assets (Prowse and Scott, 2008), and access to remittances from abroad (Clarke and Wallsten, 2003). Therefore, the goal of this study is to examine the impact of household and natural resources; Characteristics on adaptation behavior case of Tropical cyclone in coastal area in Bangladesh by answering the following question:

a. Whether remittance has any influence on household’s choice of adaptation?

b. Whether Government adaptation programs have any impact on household’s defensive activities to prevent the natural disaster?

c. Whether private assets play any role on household’s decision on adaptation against the natural disaster?

II. LITERATURE REVIEW

The economics literature on natural disasters is relatively new. However, recent papers have examined the impact of natural disasters on macroeconomic output (Noy, 2009) and international financial flows (Yang, 2006). Moreover,
there are studies showing, international donor agencies' role in assisting countries coping with natural catastrophes and understanding how countries can reduce risks and mitigate the impact from natural disasters (Laframboise, & Loko, B. (2012), and possible role of private defensive expenditures to reduce the likelihood and severity from a major storm event (Mahmud and Barbier, 2016).

The literature suggests that migrant remittances flows increase in the aftermath of natural Disasters. "The macro and micro-evidence indicate a positive role of remittances in preparing for and in coping with the consequences of natural disasters" (Sanket Mohapatra George Joseph Dilip Rath, 2009). There were about 200 million international migrants and a large share of these international migrants or about 156 million people are from developing countries (Ratha and Shaw 2007). This number has reached 244 million (including 20 million refugees) in 2015.

To examine the impact of remittances on ex-post disaster relief for the affected households, and to ex-ante preparedness against future natural disasters, Mohapatra, Joseph and Rath have done the study on several developing countries: Bangladesh, Burkina Faso, Ethiopia and Ghana. They found out that remittances increase in the aftermath of natural disasters with food consumption being high (e.g.in Bangladesh: flood 1998). They also found out that the International remittance-receiving households in Burkina Faso and Ghana, especially those that receive remittances from high-income OECD countries, have housing built of concrete rather than mud. Moreover, they have greater access to communications which can help in coping during natural disasters (Mohapatra, Joseph and Rath 2009). Similar study done by Suleri and Savage in four villages in Pakistan (earthquake, 2005) reveals that migrant remittances were important factors in disaster recovery and reconstruction (Suleri and Savage, 2006).

With the intention of protecting the coastal area from tidal flooding and frequent storm surges and improving agricultural production and reducing saline water intrusion, the Bangladesh Government committed to develop a safe and inhabitable coastal zone far back in 1960s. Between 1960 and 1990 agricultural production increased markedly because the original 46 polders had grown to 126, and the length of protective embankments from 2,600 kilometers to 4,800 kilometers (World Bank, 2005).” About 7,555 kilometers (km) of embankment including 4,000 km coastal embankment is constructed so far.

In 1960s, the first cyclone center structures were built. But after the devastating cyclone in 1972, Bangladesh government took initiative to build cyclone shelters for coastal residents. According to Local Government Engineering Department, in 2006, there were about 2500 cyclone shelters in the country (Islam, 2006). According to the Bangladesh government, there are some 3,700 cyclone shelters in coastal areas. Each shelter can put up 1,000-1,300 people and 450-500 cattle (Alakdia, 2012). This can only accommodate 27% of the population at risk (Islam 2004). However, 2000 more cyclone shelters are planned to be built soon in the low-lying coastal districts. Cyclone center distance from home is an important matter. If the cyclone shelter is further than 1.5 km of a house, it may be considered to be too far. Therefore, the local people are afraid and hesitate to leave their belongings, postpone leaving the house, and fall into danger (Rahman and Islam,2004).

Cyclone Preparedness Program (CPP), a joint program of the Government of Bangladesh and Bangladesh Red Crescent Society, provides a vigorous early warning system for the coastal population of 13 districts in Bangladesh. (Chowdhury, et al. 1993). The Cyclone Preparedness Program (CPP) plays a leading role for the pre-disaster planning for the country. The Cyclone Preparedness Program have at its stock of 42,675 trained and devoted volunteers who keep their communities informed of the cyclonic status and in particular the evacuation order. Through the extensive network and radio communication facility, CPP warns people to move to the safe zone and the cyclone shelter. Despite the sincere efforts of the Bangladesh Government, Cyclone Sidr (2007), took 3,406 lives since many people did not move to safer shelters despite the warnings sent before the Cyclone Sidr event. The reasons were: (1) Shelter characteristics: its distance, not enough space, lack of safety for female, and (2) Warning systems: such as warning messages were incomplete, people couldn’t hear warning due to strong wind and (3) People’s different perception about the characteristics of a cyclone sever events and their expectation that embankments will be able to protect them from danger (Bimal K. Paul and Sohini Dutt, 2016).

According to different reports, natural barriers, such as the, coastal forests ameliorated death and damage caused by the December 2004 tsunami in the Indian Ocean (Alexander, et. Al, 2016). To protect the coastal community and reduce the wind speed and water surge formulated by cyclone, many organizations have promoted replanting of forests as a natural barrier against tsunamis, especially the World Conservation Union (IUCN) promoted “Mangroves for the Future,” and donated $62 million program that aims to build natural barriers of mangroves in 12 countries in Asia and Africa (Alexander, 2016).

To justify the impact of forest on household’s decision making behavior, an empirical analysis was executed which reveals that households located in a mangrove protected area invest more in self-protection (investment that reduced the probability of storm surge risk) and less in self-insurance (expenditures that reduced the impact of damage if a storm hits) (Mahmud and Barbier, 2016).

The Literature review suggests that many studies have been done regarding the 1) remittance and Natural Disasters, 2) Government- aided programs: such as building Embankment and cyclone center, Cyclone Preparedness Program and Risk Reduction Resilience Programs in response to the natural disasters, and 3) role of Natural resources in protecting the households from the Natural disasters, especially from cyclones. By examining an
Household’s Adaptation behavior, the following equation is fitted to the household level data.

\[ Y = a + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k + \varepsilon \]

**APC = \textit{f}(\text{LINC, RMT, HL, HLA, HOP, HLL, FR, W(T)}, W(M), NL, AFR, RML) where**

**APC = Adaptation Cost (BDT)**  
**LINC = Long Income**  
**RMT= Remittance home and abroad**  
**HL= House Loan**  
**HLA = House loan amount**  
**HOP = House located outside polder**  
**HLL= House located low land**  
**NP= Natural Protection**  
**W(T)= Wall material (Tin)**  
**W(M/T)= Wall material Mud**  
**NH = NGO Help**  
**AR = Affected by Roanu**  
**FR= Forest**  

**IV. DATA SUMMARY STATISTICS**

Summary statistics presents that the 31.15% of the households’ houses are located inside the embankment and the empirical results found that those whose houses are built inside the embankment spend Tk. 6,1641.89/- less than those houses are built outside the embankment. It also shows that 11.94% of houses located besides the forest and 23.45% houses are located on the river bank and those household. The data summary statistics presents that the households, whose houses are protected by the forest spent Tk. 5,227 less money compared to those who are not protected by the forest. The Survey presents that 33.45% households are living on lowland, they spent Tk. 3,227 more for adaptation.

**V. EMPIRICAL TEST AND RESULT:**

**Model Technique**

A multiple or multivariable linear regression model is used to analyze data for the study.

**Model Specifications:**

\[ \text{Adaptation Cost} = f(\text{Asset ownership, Public program and Remittance, Nature, Cyclone damage}) \]

The Adaptation cost is the amount of money that a household spent after the Cyclone Roanu to improve their houses. Public programs include government embankment program, position of the house, NGO help. Asset is family income, structure of house. Remittance is household’s earning from both within a country and abroad. Natural protection is forest, and cyclone damage means, damaged caused by Roanu.

**Determinants of Adaptation Cost of Households**

Household money spent after the cyclone Roanu. In order to assess the impact of the characteristics that influence the Tropical cyclones.

**III. METHODOLOGY**

According to Bangladesh Disaster Related Statistics 2015 conducted by BBS (Bangladesh Bureau of Statistics), significant number of households (78.31%) have been affected by the cyclones during 2009-2014 period. Therefore, for this study first the three Southern districts of Bangladesh: Bhola, Barguna and Patuakhali have been selected. Secondly, from each district one Upazila was chosen. After selection of Upazilas, two most cyclone affected Unions from the selected Upazilas (based on DMB information) were chosen. Finally, from each Union two villages and 50 households from each village were randomly selected for survey.

The Multivariable Linear Regression results reported in this paper are based on primary data, the full sample of the 610 household survey from three districts: Patuakhali, Barguna and Bhola, in the Coastal Area of Bangladesh. In the Regression model, there are 13 independent variables and one (1) dependent variable which is the Adaptation Cost. The R2 is .225. The independent variables explained about 22.5% of the variation of Adaptation Cost in model. The major determinants of the Adaptation Cost are: income, house located outside polder, Natural protection, forest, household affected by Roanu and NGO’s help at 1% level of significant. The second major determinants of the Adaptation cost are: number of households that took house loans, Amount of house loans, wall with mud and thatch material at 5% level of significant. Third stage of determinants are: remittance, house located in the low-land, house loan and house with mud/thatch wall at 10% level of significant. The significant positive coefficient of Adaptation costs are Income, House loan, House located in on outside polder, Lowland, wall materials with Tin and Mud and NGO link, affected by Roanu, NGO help.

**Elasticity of Adaptation Cost:**

It is found the 31.15% of the households’ houses are located inside the embankment and the empirical results found that those whose houses are built inside the embankment spend Tk. 6,1641.89/- less than those houses are built outside the embankment. It is also shows that 11.94% of houses located besides the forest and 23.45% houses are located on the river bank and those household. It presents that the households, whose houses are protected by the forest spent Tk. 5,227 less money compared to those who are not protected by the forest. It also presents that

**Estimation Result:**

The Multivariable Linear Regression results reported in this paper are based on primary data, the full sample of the 610 household survey from three districts: Patuakhali, Barguna and Bhola, in the Coastal Area of Bangladesh.
33.45% household are living on lowland, they spent Tk. 3,227 more for adaptation.

VI. CONCLUSION AND POLICY RECOMMENDATION
The study was intended to discover the impact of Household and Natural Resources Characteristics on Adaptation behavior to undertake the defensive actions against the natural disasters, especially cyclone, to reduce the risk of being affected by the natural calamity or prevent the damage caused by the natural catastrophe. This study was done in the three most cyclone affected districts, in the coastal areas of Bangladesh.

By using a multivariable linear regression model, this paper tried to explained what factors made a household spend more or less money as the Adaption Cost as his/her defensive strategies. It was found that public programs such as building embankment, different NGO services, house-loan, natural barrier, forest, income, remittance have impact on household’s decision on spending money for adaption purpose. It is shown that those households’ houses are inside the polder, those houses are surrounded by forest, spend less money because may be their houses were less damaged by cyclone Roanu. It shows that those who have access to the house-loan, spent more money. It was surprisingly reveal that remittance house-hold member spent less money after the cyclone Roanu. From the survey data analysis, it was found that remittance receiving household’s house structure is better than non-remittance households. Since their houses were in better condition, they weren’t affected by the cyclone.

This study reveal, that a) households who are living inside the polder, b) households who are adjacent to mangrove forests, and c) houses that are well-built, had experienced less damage on their properties due to cyclone and as a result, they spent less money for rehabilitating them. It is also observed that households who had links with NGO, had higher ability to take self-defensive actions to prevent themselves from the future natural disaster, as a result they needed less public support.

POLICY RECOMMENDATION
Based on the finding of the study, it can be recommended that if the government takes action for forestation, build more embankments or reconstruct the embankment and put coastal people inside the polder, then the coastal people will be safe or minimize the danger of devastating cyclone and reduce the damage and loss of lives and property. This will also lessen government’s financial pressures. Since remittance plays an important role to improve people’s social standard, life-style and economic well-being, if more people have access to go abroad, they will eventually, be more self-reliant and have more resilience capacity to cope with the natural disaster and be less burden on government and on the society. Non-governmental organization also play an important role providing loan to the NGO members which help the members to take the necessary adaption strategies against the natural disaster, particularly tropical cyclone.

REFERENCE
How Middle-Actors of Vegetable Supply Chain Affect Transportation Cost

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Paper ID: ICBM-19-0577

Abstract – The aim of this exploratory research is to find the impact of middle-actors of supply chain on the transportation cost of vegetables in Bangladesh. It is also aimed to find a relation between transportation cost and number of middle-actors of supply chain of vegetables. The research was conducted by taking 349 primary samples. The sample of the research was designed as the lots of vegetables from farmer’s point of sales to consumer’s point of purchase. Sample data was collected from farmer, rural retailer, wholeseller, aratdar, urban whole-seller, urban retailer, transporter and from consumer. Secondary data was collected from the extracts from literature, journals, books and different publications. Multiple regression model and percentile techniques were used to analyze data. It was found that transportation cost is on an average 31% with a standard deviation of 23% of the farmers’ price of vegetables. It was observed that there were up to six intermediate actors like rural and urban whole-seller, retailer, transporter, aratdar, etc. in the supply chain of vegetables. From the research it was also found that there was a direct relation between number of middle-actor in the supply chain and transportation cost of vegetables; transportation cost of vegetables is increased with the rise of number of middle-actors in the supply chain.

Keywords – Vegetables, supply chain, transportation cost, middle-actor, aratdar, consumers’ point, farmer’s point, lots of vegetable, multiple regression and percentile.

I. INTRODUCTION

Consumer’s price of vegetables in cities of Bangladesh is very high compare to the farmer’s price. Middle – actors do business by making flow of vegetables from farmers to consumers of the cities. For the business of the middle-actors retention time and transportation costs of the vegetables increased which lead higher prices of vegetables in the cities. Other factors like season, use of e-technology, weather, political unrest, transport strike, etc. are also responsible for the huge gap between farmer’s price and consumer’s price. It is revealed from the studies that increased number of middle-actors are catalyst for the rise up of consumer’s price of vegetables [3]. Moreover, most of the creams are eaten up by the middle actors. As a result, farmers do not get benefit by cultivating vegetables. So extended research on middle-actors and factors of costs like transportation is very much needed.

II. RESEARCH OBJECTIVES

The objectives of the research are:

a. Finding the numbers of middle-actors in the supply chain of vegetables.

b. Determining the impact of middle-actors on the transportation cost of vegetables from farm to Dhaka city.

c. Establishing a transportation cost model taking number of middle-actors as independent variables and transportation cost as dependent variable.

III. METHODOLOGY

Research data were collected from the flow of vegetables from farmer’s point of sales to retail market of the city. All types of farmers (small, medium and large farms) of the selected producing areas, middle actors (Foria, Aratdar, Bepari, whole seller, retailer) and consumers of Dhaka city were surveyed. Farmer’s prices, number of middle actors, consumer’s prices and transportation costs were identified from the survey.

A lot of vegetable (vegetables that were taken to market by the farmers for sales) from farmer’s point of sales to retail market of Dhaka city was considered as a sample. Eleven upazillas of the district Bogra, Jamalpur, Dhaka, Narshingdi and Gaibandha were taken as sampling area for farmers, foria and bepari. To collect information, other middle actors (Aratdar, Wholesalers, and Retailers) and consumers of Dhaka city were surveyed. Flows of vegetables-lot were marked from the above areas to retail markets of Dhaka city. One hundred twenty-seven farmers, their 349 lots of vegetables were marked and followed; 95 middle-actors and 290 consumers of Dhaka city were surveyed.

Initially a linear regression model was proposed for transportation cost model and it was statistically accepted. Descriptive statistics and charts were used to find the impact of middle actors on the transportation cost of vegetables.
IV. LITERATURE REVIEW

Bangladesh produces a diversity of fruits and vegetables on a seasonal basis. Simultaneous harvesting often leads to a glut situation in the market and to reduced prices to farmers. Overcoming periodic gluts necessitates the preservation of fruits and vegetables. It is therefore necessary for Bangladesh to formulate professional and specific development plans in conjunction with various government initiatives to promote the establishment of agro-based processing industries in the country. [2]

Both quantitative and qualitative losses occur in fruits and vegetables between harvest and consumption. Qualitative losses such as loss in edibility, nutritional quality, caloric value and consumer acceptability of fresh produce, are much more difficult to assess than are quantitative losses. Postharvest losses vary greatly across commodity types, with the location of production and with the season of production. [2]. Transportation is a major cause of both qualitative and quantitative losses of vegetables. Postharvest losses in food grains in Bangladesh are reported at an estimated 15%, while in fruits and vegetables they are estimated at 20–25%. For highly perishable fruits and vegetables, these losses may go as high as 40%. The problem of postharvest losses is compounded by the lack of proper processing, preservation and storage systems. The absence of a well-developed marketing network and rapid transportation in the country also contributes significantly to high postharvest losses in fruits and vegetables. (Rolle, 2006) [1].

Processing technologies have been developed for a few fruits, while a number of processing technologies are still under development. Potatoes and tomatoes are the only vegetables that are processed. Given the high perishability of fruits and vegetables and the absence of proper processing and storage facilities, there is wide price variation along the producer-consumer chain. [2]

Fruits and vegetables are marketed primarily in the fresh form. Produce is prepared for market either in the field or at the packing house. Preparation involves cleaning, sanitizing and storage according to quality and size, and where appropriate, treatment with a fungicide prior to packaging and marketing. Packaging protects the produce from mechanical injury and contamination during marketing. Fruit jams, jellies, juices, vegetable pickles and ketchup etc. are the main processed products produced in Bangladesh. These products are consumed on the domestic market. Small quantities of fresh fruits and vegetables are also exported. The Agricultural Marketing Company Ltd. (AMCL) in Bangladesh recently began exporting processed fruit and vegetable products. [2]

Produce in rural areas is sold either to commission agents or to wholesalers in nearby markets. These wholesalers then sell the produce either to local retailers and major buyers or to exporters. The major share of the profit goes to the middleman. Market information systems do not exist. A co-operative marketing infrastructure is also lacking. Centralized grading, packing, transit storage facilities, transportation and bulk storage facilities are greatly lacking. [2]

Middle-actors greatly affect the price of vegetable and spoilage of vegetables [3]. Transportation cost is also a part of price of vegetables and middle-actors are responsible for rise of transportation cost. In the post-harvest periods transportation starts from the fields to local market to whole-seller market to cities to retail market of the cities. So tracking lot of vegetables is the only way to determine transportation cost.

V. ANALYSIS AND FINDINGS

Samples were collected; four factors (Farmer’s price, total transport cost and number of middle-actors and consumer’s price) of each sample were identified and analyzed.

3.1 Middle-actors in the supply chain of vegetables

From analysis it was found that there were up to six middle-actors in the supply chain of vegetables. Some farmers directly sold their vegetables in the retail market of Dhaka city.

It was also found that middle-actor(s) are the main factor for the rise of transportation cost and consumer’s price of vegetables in Dhaka city.

Middle-actors number in the supply chain of vegetables are shown with the following chart.

![Middle-actors in the supply chain of vegetables](chart)

**Figure 1:** Numbers of middle Actor in the sample (percentage)

Analyzing samples it was identified that around 1% lot of vegetables were sold by the farmer in Dhaka city. There was one middle actor in 12% cases, two in 21% cases, three in 27%, four in 19%, five in 15% and six middle-actors were in 5% cases.

3.2 How Middle-actor Numbers Affect Transportation Cost of Vegetables

Average transportation cost with the number of middle-actors in the supply chain was calculated to find the impact of middle-actors on transportation costs. It was found that average transportation cost is Tk2.05 while there was only
one middle-actor, Tk2.81 for two, Tk3.62 for three, Tk4.53 for four, Tk5.38 for five and Tk6.30 for six middle-actors.

![Graph](image)

**Figure 2**: Average Transportation Costs of vegetables vs number of middle actors in the supply chain.

### 3.3 Transportation Cost Model of Vegetables

From the above presentation and using regression analysis transportation cost model was formed and shown in the box below.

**Box 1**: Transportation Cost Model

Microsoft Excel output for the regression model that include number of middle-actors is shown in the following table.

Table 1: Excel output of Linear Regression Analysis for Transportation Cost as function of middle-actors.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUMMARY OUTPUT</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Regression Statistics</strong></td>
<td></td>
</tr>
<tr>
<td>Multiple R</td>
<td>0.900</td>
</tr>
<tr>
<td>R Square</td>
<td>0.8119</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>0.8111</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.5367</td>
</tr>
<tr>
<td>Observations</td>
<td>348</td>
</tr>
<tr>
<td><strong>ANOV A</strong></td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>SS</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Regression</td>
<td>1</td>
</tr>
<tr>
<td>Residual</td>
<td>347</td>
</tr>
<tr>
<td>Total</td>
<td>348</td>
</tr>
<tr>
<td><strong>Coefficients</strong></td>
<td>Standard Error</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.4029</td>
</tr>
<tr>
<td>NUMBER OF MIDDLE ACTORS</td>
<td>0.7818</td>
</tr>
</tbody>
</table>

**TRANSPORTATION COST** =

\[ 1.41 + 0.78 \times \text{NUMBER OF MIDDLE ACTORS} \]

\[ \text{NOM} = \text{Numbers of middle actors (0 to 6)} \]

Kg. On the other hand, it is found that around 31% cost of vegetables is increased due to transportation cost. So cost of vegetables would be reduced by reducing number of middle-actors in the supply chain of vegetables.

### REFERENCES


### VI. DISCUSSION

From findings, analysis and transportation cost model it is clear that for each additional middle-actor on an average transportation cost of vegetables is increased by Tk0.78 per Kg.
Managerial Skills and Roles Relationship for Organizational Effectiveness: A Study on Public Commercial Banks in Bangladesh

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Abstract – The management exponents advocate the need for certain skills attributes of a manager in order to be effective in playing roles for the betterment of the organization. It is widely recognized realities of management body of knowledge is that organizational effectiveness related to the managerial competencies, abilities, knowledge, and skills attributes for effective role functioning of the organization. On the basis of the functional value of managerial skills and roles, this empirical study verifies how do the branch as well as corporate level managers exhibit their skills and perform their roles for organizational goal attainment. Six managerial skills and ten managerial roles have been measured and investigated to find out the effect on organizational effectiveness in public commercial banks of Bangladesh. The test statistics found to be positive, and the alpha value of the study is 0.955, therefore, the study to be considered highly reliable. The study concludes that special need based training and development program should be initiated to update the managerial skills for effective role-playing in organizational sustain and development.

Keywords – Managerial Roles, Managerial Skills, Organizational Effectiveness, Commercial Banks.

I. INTRODUCTION

Successful and effective management is a management that led to organizational objectives or something more than these. Experts believe that managers who want to achieve organizational goals and perform their own duties need to gain managerial skills [1]. Their work and profession has become more specialized and their role for administrating organizations in proper ways has become more sensitive due to the increase of environment complexity and its continuous development. Efficiency and effectiveness of organizations depend on their manager’s ability and skills in the offices [4], those managers who by using their skills and leading their organizations in right ways determine proper goals (effectiveness), and also take proper ways of reaching them (efficiency).

Commercial banks are the backbone of the financial industry, and they act as a supporting vehicle that furnishes capital for businesses to grow. Moreover, the manager of the bank have to play a very important role apart from leading his team towards achieving client satisfaction and developing the business of the bank, the manager has to liaison with his employees, clients, superiors and look after the overall working of the branch [17]. So the banking system is planned in such a way that can reach to its goal with lowest level of financial and human costs. If such organizations want to be efficient in their short term and long term performance, they make use of managers who have managerial skills to directing their units. Bank branches as subsets of the country banking system need effective and efficient management that possess managerial skills and role competencies.

A manager has the responsibility of working with and through diverse groups of people efficiently and ethically to achieve organizational goals and objectives [6]. Effective management utilizes a multitude of skills to accomplish the objectives. During the early 1970s three kinds of skills for administrators were identified [5]. These are technical, human and conceptual skills. Along with managerial skills attribute, managerial roles also involve specific types of behavior, conduct and actions that a manager must demonstrate to be successful. One of the most influential studies of managerial roles in this more recent era was undertaken by Mintzberg (1973). He used a descriptive diary method in observing senior managers at work and highlighted ten roles as the key to understanding the nature of managerial work. This research discusses managerial roles performed by managers of public commercial banks in Bangladesh basing on Mintzberg’s model consists of ten roles classified into three groups: (a) interpersonal roles including the figurehead, leader and liaison roles; (b) informational roles including the monitor, disseminator and spokesperson roles and (c) decisional roles including the entrepreneur, disturbance handler, resource allocator and negotiator roles.

Most of the researches were conducted to find out organizational effectiveness in terms of financial measurements but this study on “Managerial Skills and Roles Relationship for Organizational Effectiveness: A Study on Public Commercial Banks in Bangladesh” will examine the relative importance of these managerial skills and roles for predicting overall organizational effectiveness. This research will also establish a correlation between managerial skills and roles with organizational effectiveness to judge the organizational performances in branch level and corporate levels for public commercial banks of Bangladesh.
II. RESEARCH OBJECTIVES
All the above-mentioned aspects impressed the researcher to study on the managerial skills attribute and roles for organizational effectiveness of public commercial banks in Bangladesh to serve the following objectives:

1. To determine the relationship between managerial skills and organizational effectiveness.
2. To determine the relationship between managerial roles and organizational effectiveness.
3. To provide policy implication on the basis of findings of the study.

III. LITERATURE REVIEW
A. A Review on Managerial Skills
Scholars define managerial skills as specialized technical knowledge in certain jobs that managers should possess to perform their duties and roles and by education these people can be equipped with these skills. Managerial skills are acquiring and learning abilities. In other words we can say that management skills are a set of behaviors that lead to effective job performance and without them in many cases the knowledge of managers does not have any effects. Managerial skills defined as the manager ability to transform information and knowledge in to practice. Katz in this model points to the important note saying that the importance of management skills differ with the change in levels of management. Middle managers and lower levels depend more on technical skills and senior managers mainly need conceptual skills.

1) Technical skills: Managers need technical skills to organize tasks, jobs, and projects that enable them to implement their assignments, education, training, and experience. These skills guide their abilities to set goals, plan tasks, and direct the solution of problems, as well as support their abilities to initiate, oversee, and complete their performance of tasks [22], the ability to apply specialized knowledge or expertise [14].

2) Human Skills: Human skills or interpersonal skills refer to the ability of a person to work well with other people in a group. It is the ability to lead, motivate, and communicate with people to accomplish certain objectives. Human skills are of paramount importance in the creation of an environment, in which people feel comfortable and are free to voice their opinions.

3) Conceptual Skills: Conceptual skills refer to the ability of a person to think and conceptualize abstract situations. It is the ability to understand and coordinate the full range of corporate objectives and activities [14]. These skills are most important at the top management level, as top-level managers have the greatest need to see the “big picture,” to understand how the various parts of the organization relate to one another and associate the organization with the external environment.
This research also emphasize on the other managerial skills such as problem solving skill, communication skill and time management skill are also important at different levels and across different functions of the public commercial banks in today’s challenging work environment.

4) Problem Solving Skills: Effective problem solving is a key management skill and a major factor in determining individual and organizational success. People with good problem solving skills adapt more quickly in times of rapid change and are generally high achievers. Whether it is by putting things right when they go wrong, making the best use of resources or creating and exploiting opportunities [12].

5) Communication Skills: Communication is the transfer of information from one person to another, with the information being understood by both the persons. A manager spends most of his time either sending or receiving information [15]. Effective interpersonal communication skills are essential to social interaction, and to the building and maintenance of all relationships. Poor communication skills can cause irrevocable damage to relationships; affecting productivity, satisfaction, performance, morale, trust, respect, self-confidence, and even physical health [9].

6) Time Management Skills: Working system and time management of public commercial banks is an important aspect of banking business management. In the past time, for any transaction, the management of time was not maintained satisfactorily but now a day, we can see a significant improvement for any transaction. According to Maganga [8] time Management is not about getting more things done in a day, it is about getting the things that matter most done. He also added that, effective time management is clearly a factor in job performance and thus can contribute to an organization’s profitability. Furthermore, poor time management has been associated with poor quality of work, high stress and strain, emotional exhaustion, and health issues.

B. A Review on Managerial Roles
The manager’s job is very wide ranging. The manager’s job is to plan, take decisions, motivate, lead and organize the employees that he/she is responsible for, communicate with them and control and coordinate their work. The role of a manager in the bank is crucial, and is also changing. In particular, managers are expected to take a lead in marketing activities. In an increasingly competitive global environment, impacted by a numerous of social, economic and technological forces, managerial roles have undergone dramatic transformation. Indeed, managers around the world are struggling to redefine their roles and responsibilities against the ten roles of managers promoted by Mintzberg in the 1970s [2], which were based on research in the US context [13]. Yet these traditional roles are still widely taught in universities and training programs and widely practicing in different types of organizations without any prior modification.
Using an unstructured observation and interview procedure, over a two week period, Mintzberg concluded the work methods or activities of his study managers could be categorized into three sets of behaviors or roles. He conceptualized these clusters of roles as:
1) Interpersonal Roles;
2) Informational Roles and
3) Decisional Roles

1) Interpersonal Roles: The interpersonal roles link all managerial work together. The three interpersonal roles including the figurehead, leader and liaison roles are primarily concerned with interpersonal relationship to keep the organization running smoothly [10].

In the figurehead role, the manager represents the organization in all matters of formality. The top level manager represents the company legally and socially to those outside of the organization. The supervisor represents the work group to higher management and higher management to the work group. In the liaison role, the supervisor interacts with peers and people outside the organization. The top level manager uses the liaison role to gain favors and information, while the supervisor uses it to maintain the routine flow of work. The leader role defines the relationships between the manger and employees. The direct relationships with people in the interpersonal roles place the manager in a unique position to get information.

2) Informational Roles: The informational roles ensure that information is provided. The three informational roles including the monitor, disseminator and spokesperson roles are primarily concerned with the information aspects of managerial work. In the monitor role, the manager receives and collects information about the operation of an enterprise. In the disseminator role the manager transmits special information into the organization. The top level manager receives and transmits more information from people outside the organization than the supervisor. In the spokesperson role the manager disseminates the organization’s information into its environment. Thus, the top level manager is seen as an industry expert, while the supervisor is seen as a unit or departmental expert.

3) Decisional Roles: The decisional roles make significant use of the information and there are four decisional roles including the entrepreneur, disturbance handler, resource allocator and negotiator roles. In the entrepreneur role, the manager initiates change, new projects; identify new ideas, delegate idea responsibility to others. The manager deals with threats to the organization through the disturbance handler role. The manager takes corrective action during disputes or crises; resolve conflicts among subordinates; adapt to environmental crisis. Through his resource allocator role, the manager decides who gets resources; schedule, budget set priorities and chooses where the organization will apply its efforts. In the negotiator role the manager negotiates on behalf of the organization. The top level manager makes the decisions about the organization as a whole, while the supervisor makes decisions about his or her particular work unit.

C. A Review on Organizational Effectiveness

Georgopoulos & Tannenbaum [4] talked about the concept of organizational effectiveness which is ordinarily used for goal-attainment, sometimes called organizational ‘success’ or organizational ‘worth’. To them it is a functional rather than a structural concept. Traditionally, effectiveness has been viewed and operationalized mainly in terms of productivity. Now the concept of effectiveness is widely used in all types of enterprises ranging from transportation, manufacturing and production, electrical and electronics, banking, communication, hotel and tourism, wholesale distribution and others. However, Quang [23] proposes seven measurement criteria of organizational effectiveness. These measurement criteria are employee’s satisfaction, profitability, growth rate of sales or revenue, financial growth, competitiveness of the company’s products and services, public image and goodwill and leader in technology [19]. To assess the effectiveness of the banking sector, banks often focuses on the key performance indicators. The present study tries to find out some factors that contribute to enrich the effectiveness such as ROA (Return on Assets), profitability, loan disbursement, loan recovery, CSR (Corporate Social Responsibility), customer satisfaction, professionalism, employee commitment, employee performance, compliance, integrated information system, cooperation and growth of bank.

IV. METHODOLOGY

Present study covers a total population (N) of 3603 branches of public commercial banks in Bangladesh. For better representation of population of the study, 4 public commercial banks have been identified. Kothari [7] in his book Research Methodology: Methods and techniques proposed a formula for finite population which is as follows:

\[ n = \frac{z^2 . p . q . N}{e^2 (N - 1) + z^2 . p . q} \]

Where,

- \( N \) = the size of the population.
- \( p = 0.5 \)
- \( q = 1 - p = 1 - 0.5 = 0.5 \)
- \( e = .01 \) (the estimate within 1% of the true value)
- \( z = 1.96 \) (as per table of area under normal curve for 5% level of significance)

Using the formula, at 5% level of significance the expected sample size determined that a survey of 75 branches (n) will be the best prediction about the nature of the entire population to conduct the study:

<table>
<thead>
<tr>
<th>Nature of Bank</th>
<th>Name of Bank</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Commercial Banks</td>
<td>Sonali Bank Limited</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Agrani Bank Limited</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Rupali Bank Limited</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Janata Bank Limited</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>75</td>
</tr>
</tbody>
</table>

Source: Field Survey
The data collection, analysis manners and programs used in the current study are based on two sources. The primary data of the study collected through the questionnaire by survey method. The survey of the study conducted during 1 July to 30 November 2017. In this study, the researcher used structured questionnaire to assess perception of managers relating to their performance. 5 point Likert type scale was used to serve the perception of manager’s skills and roles relating to their job description. The review of relevant literature is the main source of secondary data of the study. Different published books on management, organizational behavior, human resource management, and bank management have been reviewed for developing conceptual framework of the study. Published scientific articles, dissertations on national and international levels, newspapers, annual report of sample commercial banks, annual report of Bangladesh Bank, authentic website, relevant reports published by government and non-governmental agencies, and related periodicals of the commercial banks have been reviewed to know the current status of management practice of banking industry in Bangladesh.

The collected data were then recoded for statistical calculation with the help of MS Excel and SPSS 17.00 Version. Mean, Standard Deviation, Correlation and Regression Analysis were formulated to get a better picture of the relation of managerial skills attributes and roles with organizational effectiveness in public commercial banks of Bangladesh.

CONCEPTUALIZATION OF HYPOTHESES

Based the research objectives and literature review the following hypothesis have been formulated:

H1: There is a significant association between managerial roles and organizational effectiveness in public commercial banks of Bangladesh.

H2: There is a significant association between managerial skills and organizational effectiveness in public commercial banks of Bangladesh.

V. RESULTS

A. SCALE RELIABILITY STATISTICS

In statistics, Cronbach's Alpha [3] is used as an estimate of the reliability of a psychometric test. The theoretical value of alpha varies from zero to 1, since it is the ratio of two variances. Nunnally [11] is often associated with the assertion that instruments used in basic research should have reliability of .70 or better. The reliability statistics to measure managerial skills and roles relationship for organizational effectiveness of public commercial banks in Bangladesh through 70 statement based questions applied to 75 respondents on which the result is acquired as under:

Here Cronbach Alpha is .955 which is higher than that is suggested by Nunnally and therefore the data collected for this research can be considered as highly reliable.

B. DESCRIPTIVE STATISTICS OF MANAGERIAL SKILLS

The following table presents the descriptive statistics about managerial skills which includes the following six factors like time management skill, information skill, problem solving skill, communication skill, analytical skill and technical skill. The mean value of the factors of managerial skills for public commercial banks ranges from 4.32 to 3.73.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Public Commercial Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ranking</td>
</tr>
<tr>
<td>Time Management Skill</td>
<td>1</td>
</tr>
<tr>
<td>Human Skill</td>
<td>2</td>
</tr>
<tr>
<td>Problem Solving Skill</td>
<td>3</td>
</tr>
<tr>
<td>Communication Skill</td>
<td>4</td>
</tr>
<tr>
<td>Conceptual Skill</td>
<td>5</td>
</tr>
<tr>
<td>Technical Skill</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Field Survey

Rank-1
The table indicates that the managers of public commercial banks highly prioritized on their “time management skill” for conducting their activities and ranked it 1st among other variables of managerial skills. The average mean value for public commercial banks is high (4.32) with Std. Deviation (.58).

Rank-2
The following variable in the table indicates that the managers of public commercial banks prioritized on their “human skill” that they receive and convey to the employees for conducting their managerial activities and ranked it 2nd among other variables of managerial skills. The average mean value for public commercial banks is high (4.22) with Std. Deviation (.51).

Rank-3
The following variable in the table indicates that the managers of public commercial banks focused on their “problem solving skill” by which they provide solutions that causes problems in performing their activities and ranked it 3rd among other variables of managerial skills. The average mean value for is high (4.14) with Std. Deviation (.65).

Rank-4
The following variable in the table indicates that the managers of public commercial banks gives importance on their “communication skill” and ranked it 4th among other variables of managerial skills through which they interact
with insiders and outsiders of the bank for performing the banking activities smoothly with a high average mean value (4.12) with Std. Deviation (.68). **Rank-5**

The following factor of the table indicates that the managers of public commercial banks give less importance on “conceptual skill” through which they can visualize the most appropriate response to a situation and they ranked it 5th among other variables of managerial skills. The average mean value for public commercial banks is moderate (3.97) and Std. Deviation (.62).

**Rank-6**

The last factor of the table indicates that the managers of public commercial banks did not mention about their “technical skill” that signifies their banking expertise and they ranked it 6th among other variables of managerial skills. The average mean value for public commercial banks is moderate (3.73) and Std. Deviation (.82).

### C. DESCRIPTIVE STATISTICS OF MANAGERIAL ROLES

Table-IV presents the descriptive statistics about managerial roles which includes the following ten factors like disseminator role, spokesperson role, negotiator role, entrepreneur role, monitor role, liaison role, leadership role, resource allocator role, disturbance handler role and figurehead role. The mean value of the factors of managerial roles for public commercial banks ranges from 4.36 to 3.76.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Public Commercial Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ranking</td>
</tr>
<tr>
<td>Disseminator Role</td>
<td>1</td>
</tr>
<tr>
<td>Spokesperson Role</td>
<td>2</td>
</tr>
<tr>
<td>Entrepreneur Role</td>
<td>3</td>
</tr>
<tr>
<td>Negotiator Role</td>
<td>4</td>
</tr>
<tr>
<td>Monitor Role</td>
<td>5</td>
</tr>
<tr>
<td>Liaison Role</td>
<td>6</td>
</tr>
<tr>
<td>Leadership Role</td>
<td>7</td>
</tr>
<tr>
<td>Resource Allocator Role</td>
<td>8</td>
</tr>
<tr>
<td>Disturbance Handler Role</td>
<td>9</td>
</tr>
<tr>
<td>Figurehead Role</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Field Survey

**Rank-1**

The table indicates that managers of public commercial banks preferred to apply their “disseminator role” for keeping their employees updated and they ranked it 1st and has a high average mean value (4.36) and Std. Deviation (.48).

**Rank-2**

The following factor of the table indicates that managers of public commercial banks chose “spokesperson role” to tell their employees about the bank’s plans, policies, actions, and results and they ranked it 2nd and has a high average mean value (4.34) and Std. Deviation (.48). **Rank-3**

The next factor of the table focuses on the manager’s “entrepreneur role” so that the managers of public commercial banks can give effort on doing new things for the betterment of their bank and they ranked it 3rd and also has a high average mean value (4.33) and Std. Deviation (.58).

**Rank-4**

The next factor of the table emphasises on “negotiator role” so that the managers of public commercial banks can negotiate on behalf of their banks on different issues with internal and external parties and they ranked it 4th because of its higher Std. Deviation (.60) although the mean value (4.33) is equal to “entrepreneur role”.

**Rank-5**

The next factor of the table focuses on “monitor role” so that the managers of public commercial banks can observe the ongoing activities of the bank and they ranked it 5th with the mean value (4.31) and Std. Deviation (.50).

**Rank-6**

The next factor of the table indicates that the managers of public commercial banks prefer “liaison role” so that they can maintain a good network with insiders and outsiders of the bank and ranked it 6th with the mean value (4.25) and Std. Deviation (.54).

**Rank-7**

The next factor of the table indicates that the managers of public commercial banks prefer to apply their “leadership role” so that they can influence their subordinates for work well done and ranked it 7th with the mean value (4.23) and Std. Deviation (.54).

**Rank-8**

The following factor of the table indicates that the managers of public commercial banks have slight attention on “resource allocator role” that the managers can sanction for activities well done and ranked it 8th. The average mean value for public commercial banks is moderate (3.96) and Std. Deviation (.76).

**Rank-9**

The next factor of the table indicates that the managers of public commercial banks give less importance on “disturbance handler role” that the managers need not handle crisis and conflicting situations frequently and ranked it 9th. The average mean value for public commercial banks is moderate (3.88) and Std. Deviation (.79).

**Rank-10**

The last factor of the table indicates that the managers of public commercial banks have no interest on “figurehead role” by which the managers exercise their assigned duties and responsibilities and ranked it 10th among all other factors of the managerial roles. The average mean value for public commercial banks is moderate (3.76) with a high Std. Deviation (.94).

### D. DESCRIPTIVE STATISTICS OF ORGANIZATIONAL EFFECTIVENESS

<table>
<thead>
<tr>
<th>Factors</th>
<th>N</th>
<th>x̅</th>
<th>σ</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>75</td>
<td>3.65</td>
<td>.95</td>
<td>Good</td>
</tr>
<tr>
<td>Profitability</td>
<td>75</td>
<td>3.57</td>
<td>1.10</td>
<td>Good</td>
</tr>
<tr>
<td>Loan disbursement</td>
<td>75</td>
<td>3.62</td>
<td>1.01</td>
<td>Good</td>
</tr>
</tbody>
</table>
The descriptive statistics shows that the public commercial banks of Bangladesh (N=75) pursue customer satisfaction (x̅ =4.05), professionalism (x̅ =4.08), employee commitment (x̅ =4.18), compliance (x̅ =4.44), integrated information system (x̅ =4.20) and cooperation (x̅ =4.15) on measuring organizational effectiveness perceived “very good” status because the mean value of the variable is above 4 at 5-point Likert Scale. Whereas, the public commercial banks pursue ROA (x̅ =3.65), profitability (x̅ =3.57), loan disbursement (x̅ =3.62), loan recovery (x̅ =3.63), CSR (x̅ =3.90), employee attachment (x̅ =3.94), employee performance (x̅ =3.96) and growth of bank (x̅ =3.98) on measuring organizational effectiveness perceived “good” status.

**E. Correlations**

A correlation is a single number that describes the strength of the linear relationship between two or more interrelated quantitative variables. A mathematical measure between two set of variables is called the Correlation Coefficient. It is most commonly symbolized by the letter r. The value of correlation coefficient (r) lies between -1 to +1. In universal, r > 0 indicates positive relationship, r < 0 indicates negative relationship while r is = 0 indicates no relationship. Here r = +1.0 describes a perfect positive linear relationship and r = -1.0 describes a perfect negative linear relationship. Closer the coefficients of +1.0 and -1.0, greater the strength of positive/negative the relationship between the variables. The following general guidelines indicate a quick way of interpreting the value of correlation coefficient: -.9 to -1.0 or +1.0 to +0.9 very strong; -0.9 to -0.7 or +0.7 to +0.9 strong high; -0.7 to -0.4 or +0.4 to +0.7 moderate; -0.4 to -0.2 or +0.2 to +0.4 weak/low correlation and -0.2 to 0.0 or 0.0 to +0.2 very weak to negligible negative/positive correlation [20].

Table-VI shows the Pearson’s correlation coefficient of the variables of the study. The results show that there is a moderate, significant positive correlation between managerial roles and managerial skills in public commercial banks of Bangladesh with coefficient correlation r = .632 at p =.000 level, N=75. There is a moderate, significant positive correlation between managerial roles and organizational effectiveness in public and private commercial banks of Bangladesh with coefficient correlation r = .601 at p =.000 level, N=75. There is a moderate, significant positive correlation between managerial skills and organizational effectiveness in public commercial banks of Bangladesh with coefficient correlation r = .511 at p =.000 level, N=75.

**TABLE VI CORRELATIONS**

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Managerial Roles</th>
<th>Managerial Skills</th>
<th>Organizational Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.632**</td>
<td>.601*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>1</td>
<td>.511*</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>75</td>
<td>75</td>
<td>75</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**

**F. Regression Analysis of Managerial Roles, Managerial Skills effect on Organizational Effectiveness (Public Commercial Banks)**

In this section, multiple regression analysis is used to study the effect of the independent variables (X1 = Managerial Roles, X2 = Managerial Skills) to the dependent variable (Y = Organizational Effectiveness) of public commercial banks in Bangladesh. Significance level for, variables are accepted on Alpha (α) = 1%, confidence level = 99%, significant at 1% (*). The model summary and the data shown in Table-VII that the value of R is .624, the value of R Square is .390 and the Standard Error of the Estimate is .43767.
The results of the multiple regression models indicate that the managerial roles and managerial skills explain the variance in organizational effectiveness. The value of the R Square is an acceptable value for explaining the organizational effectiveness of public commercial banks in Bangladesh.

Analysis of variance test statistics (ANOVA) in Table-VIII indicates that the model is significant at $\alpha=.000$. This table provides the information on the significance of the model indicating a significant p-value of .000 and $F = 22.995$. This indicates that the overall model was reasonably fit and there was a statistically significant association among managerial roles, managerial skills and organizational effectiveness of commercial banks in Bangladesh.

Table-IX shows that the values of the T-statistic are significant for organizational effectiveness. Thus, all the independent variables can be retained in the model. The table shows that managerial skills ($p=0.071$) have insignificant influence on organizational effectiveness of public commercial banks in Bangladesh. Therefore, the hypothesis $H_2$ is rejected at the 5 % level of significance ($p$ value is greater than 0.05). Managerial roles ($p=0.000$) is found to be significant and supportive to the hypotheses of regression analysis. Therefore, the hypothesis $H_1$ is accepted at the 5% level of significance ($p < 0.05$).

On the basis of results of regression model of the study is:

$$\text{Organizational Effectiveness} = .036 + .270 \text{ (Managerial Skills)} + .656 \text{ (Managerial Roles)} + e$$

$H_1$: There is a significant association between managerial roles and organizational effectiveness in public commercial banks of Bangladesh.  
$H_2$: There is a significant association between managerial skills and organizational effectiveness in public commercial banks of Bangladesh.
VI. CONCLUSION

The success of the bank, even its survival, depends on the roles and skills of such individuals, help accomplishing the goals and sustainability in the long run. This research established a correlation between managerial skills and roles with organizational effectiveness to judge the organizational performances. Here we can say that there is a significant difference between managerial roles and skills. Managers of public commercial banks are disinclined to apply the basic skills for accomplishing their duties and responsibilities. In other case, managers often highlight two roles which are missing from Mintzberg’s list – manager as subordinate and manager as worker. Most managers have subordinates but, except for those at the very top, they are subordinates themselves [21]. For ensuring effectiveness and doing the activities quickly the managers also should develop their IT skills by the adoption of modern electronic and information technologies and the introduction of Management Information System (MIS).

Failure or successful of the banking activities depends on the qualities of a manager. A skilled and qualified manager and strong management policy turned and upgraded a problem bank to best bank by implementing the managerial functions properly, applying different strategies to ensure the effectiveness of the organization. People today simply do not want to be managed; they want to be guided [17]. Today the managers must be more innovative and more proactive in anticipating the problems and opportunities as well as they must have the knowledge about the entirely new markets and products. Therefore in order to achieve continuous progression managers must consider some other points in practicing their roles and skills effectively are listed below:

- The managers of public commercial banks in Bangladesh should enrich their conceptual skills because this helps to identify their organizational goals and plans, try to develop their strategy and improve perceptual capability with high productivity.
- The managers should enrich their technical competencies because a competent manager will provide leadership to run the business effectively within the rules and regulations. In other words, the manager must demonstrate leadership by making his staff to follow him as a role model.
- Along with the three basic skills, managers should also maintain some other skills for ensuring good management practices such as: stress management skills, office management skills, change management skills, self-management skills, team management skills and political skills for ensuring organizational effectiveness.
- Most managers spend their days planning and organizing in an orderly fashion, many managers live hectic lives in constantly changing contexts. Hence, they have to be adaptable and responsive, self-directed, risk focused and results oriented manager not just pro-active, traditional boss directed, functions focused time based manager [18].

REFERENCES


Impact of Internal Factors on Banks’ ROE

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Paper ID: ICBM-19-0597

Abstract – This study attempts to estimate the relationship between return on equity (ROE) and four company-specific explanatory variables. We have taken data from the Islamic banking industry of Bangladesh. Our research period covers 2010–2016. Internal factors of this study are bank size, investment-to-deposit, non-performing investment and cost-to-income ratio. We have applied cross-section random effects model to measure the relationship between dependent and independent variables. Our estimation finds that investment-to-deposit have positive correlation with ROE and all other three variables have negative relationship with ROE. We have found statistical significance for investment-to-deposit and cost-to-income in the study.

Keywords – ROE, random effects, financial performance

I. INTRODUCTION

Bank performance and its factors is a widely chosen topic in the area of business research. This study focuses on the Islamic banking sector of Bangladesh. Currently there are 62 banks in the country [1]. Number of banks are numerous if we consider the size of the economy. Large number of banks have made the banking industry very competitive. Banks should understand how internal and external factors affect banks’ profitability. This study takes selected internal factors that affect the Islamic banks’ return on equity (ROE). At present, Bangladesh have eight full-fledged Islamic banks [2]. This study takes data from all the Islamic banks over a period of 2010–2016 and aims to identify how bank-specific factors influence the ROE.

II. LITERATURE REVIEW

Previously a number of authors have conducted studies on the factors that affect the bank performance. As the performance or profitability indicator, most of the studies considered return on assets (ROA), return on equity (ROE), and net interest margin (NIM). Our study tries to measure the influence of internal factors that affect ROE.

These types of studies take cross-sectional data over a specific period from different banks or institutions. We call it panel data. Typically, researchers estimate panel data with fixed effects and/or random effects model. Hausman test is a widely applied specification test to choose between these two models. Another popular method of estimating panel data is generalized method of momentum (GMM).

Various studies found significant relationship between ROE and banks’ internal factors, for example, size of a bank, number of members present in the board of directors, capital adequacy, liquidity, percentage of bad loans and efficiency ratio.

A study based on Ghana stated that advances-to-deposit and expenses-to-loan have significant negative impact on ROE. On the other hand, they found significant positive relationship between ROE and capital adequacy. The study considered both internal and macro-economic factors for estimating profitability. They used ROA and ROE as the dependent variables. The study applied pooled regression for data analysis [3].

Another study based on India found that equity capital and operational efficiency have significant positive effect on bank performance. Besides, they found that credit risk, cost of funds and non-performing assets have significant negative relationship with performance. The study considered ROA and ROE as the dependent variables. They used pooled OLS method for model estimation [4].

Taking evidence from South Asian countries another study showed that funding cost, liquidity and funding gap have significant negative influence on bank performance. The study collected data from 259 banks of Bangladesh, India, Nepal and Pakistan. They used ROA and ROE as performance indicators and applied generalized method of momentum (GMM) [5].

A study on the banking industry of Pakistan found that higher solvency, financial structure, operating cost, and labor productivity have positive influence on profitability. On the other side, lower credit quality, operational efficiency and funding cost have negative significant influence on profitability. They used ROA, ROE and NIM as dependent variables. The study applied two-step GMM system estimator on an unbalanced panel data [6].

Another study on Turkish banking sector estimated that equity to total assets, loan loss provisions to gross loans, total costs to total income and logarithm of total assets have negative and significant relationship with ROE. Authors used ROA and ROE as performance indicators. To analyze dataset, they applied fixed effects and random effects model [7].

A study on Malaysian banking sector found that non-performing loans and cost efficiency have significant negative relationship with ROE. On the other hand, bank size showed a significant positive relationship with ROE. Authors used pooled OLS model and data period covered 2010–2015 [8].
Researchers from Bangladesh argued that non-performing loans (NPL) and operating expenses have significant negative effect on bank profitability. On the other side, loan-to-deposit and cost of fund contribute towards profitability, but they were not significant in the study. The study used fixed effects and random effects estimation to analyze data [9].

Using an unbalanced panel data from India, a study concluded that liquidity and bank size have no effect on ROE. The study further argued that overhead cost could affect ROE of private and foreign banks positively while public sector banks negatively. The author also found negative relationship between the level of capital strength and ROE. The study applied fixed effects model considering ROA and ROE as dependent variables [10]. Another study on EU 27 banking systems found that credit and liquidity risk, management efficiency and the diversification of business have influence on ROE. The authors used fixed effects and random effects model in their study. They applied Hausman test to choose the appropriate estimation technique between these models [11].

III. METHODOLOGY

A. Data

We observed seven-year unbalanced panel data from all the eight full-fledged Islamic banks of Bangladesh. Period covers 2010–2016. The following table lists the Islamic banks in Bangladesh.

<table>
<thead>
<tr>
<th>Name of the Bank</th>
<th>Data Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export Import Bank of Bangladesh Limited</td>
<td>2010–2016</td>
</tr>
<tr>
<td>Islami Bank Bangladesh Limited</td>
<td>2010–2016</td>
</tr>
<tr>
<td>Al-Arafah Islami Bank Limited</td>
<td>2010–2016</td>
</tr>
<tr>
<td>ICB Islamic Bank Limited</td>
<td>2010–2016</td>
</tr>
<tr>
<td>Union Bank Limited</td>
<td>2013–2016</td>
</tr>
</tbody>
</table>

B. The Variables

**Dependent Variable**

We have taken return on equity (ROE) as the dependent variable of the study. It is a measure of financial performance. It is the ratio of net income after tax to total common equity. A ROE of 10% means that common shareholders have earned $10 of net income for every $100 of investment in the company. A higher ROE indicates the efficiency in generating more profit without employing much capital.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on Equity (ROE)</td>
<td>Net Income/Total Common Equity</td>
</tr>
</tbody>
</table>

**Independent Variables**

Our study considered four bank-specific variables to see how the factors influence the performance of banks. Previous studies found significant relationship between these variables and ROE. The variables are as follows.

**Bank Size**

The size of an organization is normally measured by the total assets. For financial organizations, it can also be measured by the amount of total loans or deposits. For data analysis, authors take the natural logarithm of these figures as the company size. This study takes logarithm of total assets as bank size. Theories argue that a larger organization can take the benefit of economy of scale. Therefore, a larger bank should generate higher ROE.

**Investment-to-Deposit**

It is the loan-to-deposit ratio for conventional banks. It is a measure of banks’ liquidity. A higher investment-to-deposit ratio indicates higher return, thus the relationship should be positive with ROE.

**Non-performing Investment**

It is called non-performing loans (NPL) in conventional banking. In our study, it is the ratio of non-performing investment to total investment. When NPI increases, profitability drops, therefore, the relationship between NPI and ROE should be negative.

**Cost-to-Income**

For financial institutions, we divide operating cost by operating income to calculate cost-to-income ratio. An increase in operating cost decreases the operating income and therefore, net income and ROE falls.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Formula</th>
<th>Expected Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank Size</td>
<td>Logarithm of total assets</td>
<td>+</td>
</tr>
<tr>
<td>Investment-to-Deposit</td>
<td>Investment/Deposit</td>
<td>+</td>
</tr>
<tr>
<td>Non-performing Investment</td>
<td>Non-Performing Investment/Total</td>
<td>–</td>
</tr>
<tr>
<td>Cost-to-Income</td>
<td>Operating Expense/Operating Income</td>
<td>–</td>
</tr>
</tbody>
</table>

C. The Hypotheses

We have formed four hypotheses for four internal factors. We will accept a hypothesis if we found the statistical significance and the desired coefficient sign for a variable. If the coefficient sign matches our expectation but we do not find any statistical significance, we will partially accept a hypothesis. We will reject a hypothesis if we do not find statistical significance for the variable and the coefficient does not show the expected sign.
We run the Hausman test to find the appropriate model for tests. We have used EViews® 10 to estimate the model and related random effects model is appropriate for our dataset. We because according to the Hausman test we have found that section random effects model.

Based on the above output, we cannot reject the null hypothesis. The model will be estimated using cross-section random effects model.

We found statistical significance for investment-to-deposit and cost-to-income ratio. Adjusted R-squared for the model was 0.642347. We have not found any statistical significance for bank size and non-performing investment.

According to our estimation, we observed that investment-to-deposit ratio have positive correlation with ROE. When a bank disburses more quality loans or is able to make more quality investments it is certain that they will generate more return. In addition, we found a negative relationship between ROE and cost-to-income ratio. Higher percentage of operating expense affects the net income and generates a lower ROE. Moreover, our estimation found negative relationship between ROE and non-performing investment. Bad investment erodes the shareholders’ equity and the ROE falls. Finally, the study observed negative relationship between ROE and bank size. Studies found that larger banks might face diseconomies of scale and therefore, experience a lower profit.

V. CONCLUSION

This study aims to measure how bank specific variables i.e. bank size, investment-to-deposit, non-performing investment and cost-to-income affect the return on equity (ROE). We have taken data from the Islamic banking industry of Bangladesh covering period of 2010-2016. We found that investment-to-deposit have significant positive correlation with ROE. On the other hand, cost-to-income showed a significant negative relationship with ROE. According to our study, we have not found statistical significance for bank size and non-performing investment but they both show negative correlation with ROE.

REFERENCES


Extensive Analysis of Fisheries Sector in Bangladesh

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Paper ID: ICBM-19-0605

Abstract – Being one of the largest fish producer in the world, Fisheries of Bangladesh play an important role in the rural life and economic growth of Bangladesh. Around 11% of total population of Bangladesh are dependent on fisheries sector. It earns revenue of $535 million from exporting. However, Bangladesh is not getting enough growth compared to other neighboring countries. Natural disasters, global warming, lack of training and financial support is preventing the proper growth of fisheries sector. Government is trying to improve sector by introducing new technology and training. Thus, Fisheries sector is improving over the time.

I. INTRODUCTION

Bangladesh is enriched with vast amount of inland water bodies such as river, canals, natural and man-made Lakes and ponds. Bangladesh has total water resources of 21,512,590 hectares for fisheries sector. This fish resource is helping us by both full filling the large amount of protein and creating bread and butter for many people. FRSS (2016) reveals that fisheries sector plays a crucial role in Bangladesh’s GDP. According to (15), the fisheries sector contributed 3.57 percent to the national GDP in FY18. (DoF 2015) shows that, in last 10 years, average growth rate is 5.4% in fisheries, 8.2% in aquaculture. Bangladesh earned total revenue of BDT 69000 metric tons of fish and fish products. According to (15), almost 17 million people (11% of population) depends on this sector. Majority employees are women in this sector, moreover 1.4 million women depend on fishing for their livelihood. This rapid growth make Bangladesh to become 3rd in the world in aquaculture production (15). The purpose of this study is to find out the present condition of fisheries sector of Bangladesh compared to other neighboring countries. This study is also aim to identify major challenges of this sector and possible solution as well as steps taken by our neighboring countries to resolve the problem.

There are four different organizations that helps people who are involved with fisheries industry and try to develop this industry. These are Ministry of fisheries and livestock, Department of Fisheries (DOF), Bangladesh Fisheries Development Corporation (BFDC) and Bangladesh Fisheries Research Institute (BFRI). Department of fisheries is the main organization which organize various training initiative and awareness program like GAP, GLP, food safety, ISO standard to the fish inspection and quality control (FIQC) officers. Bangladesh fisheries research institute is responsible for researching the fish biology. They have already restored 17 species of fish which are endangered. Bangladesh Fisheries Development Corporation or BFDC, is a national corporation which constructs fish harbors, runs cold storage, auction houses, processing center, and transportation center for fishes in Bangladesh to There are other organizations like ministry of land, ministry of irrigation water development and flood and various NGOs are involved with this industry.

II. LITERATURE REVIEW

- Fisheries sector plays an important role to ensure stable food supply, provide income and employment opportunities, earn foreign exchange supply nutrition and contribute to livelihood development and poverty reduction around the world. (17)
- Around 44.9 million people are directly involved with fisheries and aquaculture sector globally while 540 million people derive their livelihood from this sector. (18)
- China has been the world’s top fish producer for many years. In 2015, China (mainland only) produced 65.2 million tonnes of food fish. Chinese fish farmers contributed 62 percent to the world’s farmed food fish production in 2015. (20)
- According to the estimates of the year 2015-16 there was about Rs. 1 lakh crore value fish production in the country. (8)
- Fisheries sector provide significant source of income and food to Bangladesh and is the second largest part-time and full time employer in rural areas. (19)
- Fish Provides 60% of daily animal protein intake to the people of Bangladesh. (5)
- Fisheries industry in Bangladesh is provoked by a range of commercial, organizational and environmental concern. 54 floodplain fish species are in danger due to heavy pressure of fishing activity in these areas. Along with this, water pollution, recent flood and natural disasters are the underlying causes for hampering fish production. In addition, rise of salinity due to rise of sea level is also disturbing the marine fish production which contributes

*DOF-Department of Fisheries.
*FRSS- Fast Response Survey System
20% of total fish production of Bangladesh. (19)

- According to Statista (2017), Europe Union is the largest importers of fish and fishery products with amount of USD $55.7 billion following USA $21.6 billion and china $15.9 billion. Total amount of imports of these three countries are 93.2 combined. If we are able to capture 2% of their total imports, the value will be more than USD $1.8 billion. So we have potential markets all over the world. We just need to maximize our fish production as much as possible (6).

**COMPARATIVE STUDY:**
To find out the potentials of fisheries industry we are comparing our country’s competitive position against neighboring countries. According to food and agricultural organization (FAO), a concern of UNO, Bangladesh has become the third largest fish and seafood producer in the world after China and India (16). Fisheries industry of Bangladesh contributes 3.57% of total GDP whereas Indian fisheries contributes 6% to their total GDP (1,2), following China’s contribution of 7.92% in GDP (World Bank) (3). However, Bangladesh fisheries industry offers more employment opportunities than China and India, providing employment for 17 million people, compared to China’s and India’s 14 million (1.3). Total production of fish and fishery products of Bangladesh, China and India are respectively 4.1 million, 10.7 million (2) and 65 million tonnes (3).

To increase the production of fish, Government of China has taken five-year plan in 2016 to sound platform for restoration of marine ecosystem and capture fisheries within the exclusive economic zone. Moreover, India’s government has created an umbrella scheme titled “Blue Revolution: Integrated Development and Management of Fisheries,” funded with an initial budget outlay of USD 467 million. (Kumar, J., 2018)

Production of fish in our country increasing gradually over the year. Table 1.1 shows the amount of fish production in our country in 2016-17 and 2015-16 and shows the increase in production and growth rate of this sector:

<table>
<thead>
<tr>
<th>Sector of fisheries</th>
<th>2016-17 Water area (HA)</th>
<th>2016-17 Production (MT)</th>
<th>2016-17 Productivity (KG/HA)</th>
<th>2015-16 Water area (HA)</th>
<th>2015-16 Production (MT)</th>
<th>2015-16 Productivity (KG/HA)</th>
<th>Increase in production</th>
<th>Growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inland Open water</td>
<td>392714</td>
<td>1,163,606</td>
<td>296</td>
<td>3,918,608</td>
<td>1,048,242</td>
<td>268</td>
<td>115,364</td>
<td>11.01%</td>
</tr>
<tr>
<td>Inland close water(Culture)</td>
<td>833752</td>
<td>2,333,352</td>
<td>2799</td>
<td>795,831</td>
<td>2,203,554</td>
<td>2877</td>
<td>129,798</td>
<td>5.89%</td>
</tr>
<tr>
<td>Marine water</td>
<td>-</td>
<td>637,476</td>
<td>-</td>
<td>-</td>
<td>626,528</td>
<td>-</td>
<td>10,948</td>
<td>1.75%</td>
</tr>
<tr>
<td>Total production</td>
<td>-</td>
<td>4,134,434</td>
<td>-</td>
<td>-</td>
<td>3,878,324</td>
<td>-</td>
<td>256,110</td>
<td>6.60%</td>
</tr>
</tbody>
</table>

Table 1.2 illustrate the comparison between Bangladesh, India and China in terms of fish production, position

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Fish production (million MT)</th>
<th>Total Inland Water Area</th>
<th>People depend on fisheries(Mill)</th>
<th>GDP in %</th>
<th>Growth rate in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>65</td>
<td>175 300km²</td>
<td>17</td>
<td>7.93%</td>
<td>11.71%</td>
</tr>
<tr>
<td>India</td>
<td>10.7</td>
<td>530,000 km²</td>
<td>14</td>
<td>6%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>4.1</td>
<td>18 290km²</td>
<td>14</td>
<td>3.57%</td>
<td>5.40%</td>
</tr>
</tbody>
</table>
As China and India are the two largest producer of fish and fishery products, they have been continuously developing their method of aquaculture and formulate various strategy to increase natural fish production. As their climate is similar to us, it will help us to formulate our own method of aquaculture to increase fish production.

Being the largest fish producer in the world, China has been deeply monitoring their production and trying to develop new and modern methods for increasing fish production. As China is accounted for the 60% of farmed aquatic production worldwide (Ford.J. 2016), it is significantly important to improve culture methods for increasing demand. China implement two types of aquaculture method for fishery. One is pond culture for freshwater and another is bottom sowing and raft culture for saltwater. Pond culture provides around 70% of China's total fresh water fish production and bottom sowing and raft culture contributes around 50% of total marine fish production. In addition to that, China started a long-term plan named “FIVE YEAR PLAN” in 1953. It keeps them to monitor their fisheries condition and provide necessary initiative towards the fisheries. They have already implemented thirteen five year plan since 1953. (Zhao.W., Shen.H. 2016). (9)

India's commercial fish farming is increasing rapidly. Thus government of India encouraging people to engage in fish farming. They are trying to apply best methods of fish farming in order to get more revenue. Like China, the most widely used aquaculture method in India is pond culture. As particular species of fishes are cultured and those are highly profitable, many Indians are establishing pond culture for fisheries. The main fishes that are cultured in these ponds are various carp and cat fish and giant prawn. The technology of carp culture actually revolutionized the fish production of India from .6 tones/ ha in 1974 to 2.90 tons in 2013. (Fao, 2013) Besides the pond culture, non-conventional paddy-fish culture and sewage-fed fish culture is also have been practicing in some part of India. In addition to aquaculture practices, Government initiated an integrated development and management of fisheries project named as Blue Revolution to improve training and capacity building of fisheries and fish-farmers. (Kumar.J.2018) (8)

Bangladesh has already been implementing pond culture since 1980's. Government is trying to develop new system for fisheries continuously. It is visible that the effort in affecting the fish production as it has been increasing over the year. However, Bangladesh can also improvise other methods like pedddy-fish culture. It will be a good option as it will help to cultivate rice as well as fish at the same time in the same field. However, it is not possible in Bangladesh as excessive amount of pesticides are used in the cultivated land. Fish cannot survive in this water.

**CHALLENGES AND PROSPECTS:**

Even though fisheries sector of Bangladesh is enjoying stable and consistent growth, it is not sufficient compared to other neighboring countries, due to various challenges that we are facing. There are several challenges that Bangladesh is facing in this sector which needed to be resolved.

**Climate Change:** Climate change is now become a global issue of the decade. Due to the increasing amount of Carbon-di-Oxide, Earth’s climate is changing rapidly which leads to various natural disasters. Third world countries are the sufferer of this climate change. High temperature, rising sea levels, Natural disasters, Heavy monsoon etc. are the sign of climate change (10). Bangladesh is facing all the signs. It is one of the most vulnerable countries to be affected by climate change. Bangladesh is considered low-lying land which makes it extremely vulnerable. Coastal fisheries are affected due to rising sea level (11). Moreover, normal growth of our fisheries sector was hampered very badly. If we consider the growth of our fisheries compared to our neighboring countries, it not satisfying. All the countries are enjoying double digit growth whereas, we are still growing 5.4% a year. High temperature impact the productivity of fish production as most of the fish species cannot grow in excessive hit. That is how our fisheries sector is affected by climate change.

**Natural Disaster:** Bangladesh is suffered by various types of natural disasters which hamper the normal growth of Fisheries sector in the past. Due to climate change, number of natural disasters is increasing in recent years. Natural disasters, especially flood, is affecting very badly in our fisheries sector. Bangladesh is suffered by flood in almost every year. In 2017 alone, more than 102000 fish cultivators of northern districts faced a combine loss to TK. 773 crore (12).

**Lack of education and financial support:** As most of the fish cultivators are uneducated or have little knowledge about fisheries, they are not be able to manage their fish farm properly which makes those farms inefficient. In Addition, inadequate financial capacities, poor resources management and lack of
research facilities are also responsible for underperformance of the fisheries (11). In a study, 77% of total cultivators do not get credit from banks due to lack of collateral (14).

PROSPECTS OF FISHERIES
Fish production of Bangladesh can be improved through various initiatives that should be taken by the government. Government is building enormous embankments to prevent flood. During last few decade, 7,555 km of embankments were constructed under the program of flood control and drainage improvement and another 3,204 km of drainage channels have been built under total 332 projects. Thus, about 24% of the total land area and 39% of the net cultivated area have been protected from flood (21). Proper knowledge should be given to the cultivator through proper authority (DOF). New technique can be improved and applied in our country such as indoor fish farm. Indoor fish farming has already been introduced in Bangladesh. Agro3 fisheries has already introduced indoor farming technique called recirculated aquaculture system (RAS) (12). However, machineries have to be imported from outside which accelerate the investment cost drastically. Government can construct those machines in Bangladesh so that this technology can be affordable to all cultivators. Financial support is also very essential in this regard.

CONCLUSION
Despite of having so many challenges, fisheries sector is performing sound and steady growth in past decades. However, it can be improved by introducing new technology and training process to the cultivators. If Government can necessary initiative to improve the condition of fisheries sector, it can be a big revenue earning sector of this country as well as create more employment opportunities for youth.

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Stratification and Performance Analysis of Mutual Funds in Bangladesh

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Abstract – Studies on mutual funds have been increasing in numbers throughout the world, since the investments in this sector have been growing for the last 40 years. Although mutual funds are quite demanded worldwide, the scenario is different in Bangladesh. This sector is still unexplored with very few studies till now. The focus of this paper is on the 37 close end mutual funds in Dhaka stock exchange to understand how the pool of money invested in these mutual funds are distributed in different industries of our country. The purpose of the research is to understand which industries are being chosen mostly by the fund managers and why are they being chosen. Furthermore, the paper gives analysis on this industry’s performances. Hence, it is expected that this research will not only help academicians, students and corporations but also help small investors to understand what is the trend in the mutual funds sector which is considered as one of the safest investment sector of the economy.

Keywords – Bangladesh mutual funds, Beta, Sharpe ratio, Mutual fund performance, Net Asset Value

I. INTRODUCTION

Bangladesh has a prominent sector still unexplored which has a very significant role in the investment sector of the economy - the mutual fund industry of Bangladesh. With 37 close ended mutual funds in Dhaka Stock exchange, this sector is efficiently running keeping the investments interest intact as well. However, very few studies have been done on this sector till now. This paper is an analysis to understand the trend of the investments made by the mutual fund managers with the pool of money poured in the funds and to measure how well the market is performing in the country and its prospects.

It is quite easy for large corporations to invest their money in a diversified portfolio due to the size of their investments and also due to their managerial expertise. On the other hand, small, individual investors are not being able to do so due to monetary obligations and lack of expertise Therefore, mutual fund is introduced in order to serve these small investors and enable them to make a safe and secured investment which is diversified, professionally handled and is of low cost. The job of a mutual fund is to collect money from investors and invest that money in different sectors like, corporate and government bonds, stocks of corporations, Treasury securities, savings certificate and other money market instruments, securities assets and also a combination of all these. Open end and close end mutual funds are the two types of fund existing in the market. Close end funds are being traded once at IPO, where a fixed number of shares are being sold with a fixed maturity period. After that they are being traded in the secondary market. On the other hand, open end funds are allowed the redemption and subscription of shares at Net Asset Value (NAV) per share at a perpetual basis.

The popularity of studies in mutual funds has increased since the introduction of the Capital Asset Pricing Model and portfolio theory in 1960s (Biplob, 2017) [1]. Since 1980, the investment in mutual funds in Bangladesh has increased from TK 7.5 million to TK 280 million in 2017. Similarly, the world has seen rapid development in the investment in mutual funds, from private investors, for the last 40 years. Investment corporation of Bangladesh or ICB was a government initiative to bring mutual fund in Bangladesh in 1980s. In March 2000 their first mutual fund, ‘AIMS First Guaranteed Mutual Fund’, was issued. The private sector which took the first step towards mutual fund in 1999 is known as the Asset and Investment Management Services of Bangladesh Limited (AIMS). Immediately the AIMS with mutual funds grew tremendously with about 80% of the total fund being handled by them. Despite such growth the country only had close end mutual funds, but the first ever open-end fund was introduced in 2010 by Prime Finance Asset Management Company Limited (PFAMCL). According to DSE annual report of 2017, the fund size of all open end mutual funds is 16000 crores approximately. Which also gives an evidence on the flourishing mutual fund industry of the country.

In order to ensure proper practice of rules and regulations in the industry and to protect the interest of the investors, the corporations’ mutual funds of Bangladesh are being controlled by Bangladesh Securities and Exchange commission, which opened a branch for mutual fund on 16 March, 2009.

II. LITERATURE REVIEW

Mutual funds are believed to have persistent performance throughout its lifetime. Grinblatt and Titman (1992) [2] in their paper claims that when a mutual fund performs well, it has proven to continue to perform well through its life. The performance of a fund also hugely depends on how well the fund manager manages the fund to extract returns. The classifications and grouping of mutual funds usually depends on the manager’s ‘style’ who is responsible for
the fund. There are equity funds that categorize into “aggressive growth” funds that gives low-yields but high growth potential and “income” funds that holds high-yield. (Brown & Goetzmann, 1996) [3]. Whereas, Kim, Shukla and Tomas (n.d.) [4] suggests that most of the times the stated objectives are the main drivers of fund classifications. However, they found contrasting results after classifying the mutual funds and that the characteristics, investment styles are different from objectives stated.

There lie two kinds of ownerships in mutual funds, one is the shareholders who desire returns while others are the trustee who actually are the controlling owners. This practice is derived from UK. One way to improve the governance of mutual funds is to create board of trustee consisting people who are professional trustees in practice. (Sethu, 2006) [5].

Sidan & Acharya (2007) [6] carried on a cluster analysis of mutual funds in India. He categorized the mutual funds into different sectors such as Finance, Technology, Pharma and so on. The objective of this study was to portray that investors are actually diversifying their investment across multiple sectors by investing in mutual funds.

There are researches and performance evaluations to justify the returns and profitability of mutual funds. Using Jensen alpha, Treynor ratio and Sharpe ratio Zafar, Chaubey and Ali (2015) [7] measured performance of mutual funds in India so that investors can take on calculated risk and invest. They also analyzed the returns and the Net Asset Value (NAV) of the mutual funds. Afza and Rauf (2009) [8] has also given certain importance to different aspects of funds such as costs associated, duration, cash flows, weights and magnitude. Biplob (2017) [1] evaluated the performance of 15 closed-end mutual funds in Bangladesh with calculations of those three ratios. They also considered DSE index as benchmark for comparison of mutual funds.

A diversified mutual fund is more prone to extract more return for investors than funds that invest only in bonds. (Kiymaz & Simsek, 2017) [9]. The authors also mention that mutual funds that are internationally diversified are likely to generate more return than any domestic mutual fund.

There is only handful of research on mutual funds done in Bangladesh. Our paper aims to meet the gap and study the performance of existing mutual funds. This also aims to find out the best performing securities that these mutual funds are heavily investing in, and also underlying motivational factors that determine how to construct a mutual fund.

III. METHODOLOGY

The research is based on secondary research which started from collecting raw mutual funds data which contained every details of these funds. The study began by classifying the funds into different industries and calculating the percentage of total fund invested in each industry. Then was the analysis of the top most favored industry these funds like to invest in. The information was also used to calculate the standard deviations, beta and Sharpe ratio of the mutual funds, which helped to understand how each fund is performing. In order to understand more about the sector previous papers have been utilized and analyzed.

IV. INDUSTRY OVERVIEW

The aim of mutual fund is to reduce the risk of the investors as much as possible and make the most return from the investment pool. Which is why the money being investment in various different sectors to create a portfolio with very low risk. These sectors are the different flourishing industries of the country’s economy. All the 37 mutual funds were being analyzed to find which industries are mostly being selected to invest in by these funds as at 30th June 2018. The observations show the top industry that is being chosen by all the mutual funds to invest in is the banking industry. Among the 20 sectors and 2304 investments in all these 20 sectors, 18.79% belongs to banking industry making it the top industry in terms of investment. The second industry chosen by mutual funds for investment is the pharmaceutical industry. The percentage of investment in this industry is 11.59% from the 2304 investments. The third position is taken by the mutual fund industry itself with a 10.42% investment followed by Insurance industry (9.85%), Fuel and Power (9.85%), Engineering (8.55%), Financial institutions (7.64%) and Textile (6. 86%). More 12 industries are also included in the funds but the investment percentage is quite insignificant. They are: Telecommunication (1.74%), Cement (3.60%), Tannery (1.69%), IT sector (1.17%), Corporate Bond (1.04%), Food (3.08%), Miscellaneous (1.17%), Services (0.69%), Ceramic (1.09%), Travel (0.78%), Paper & printing (0.09%) and FDR (0.3%).
Graph 1: Industry composition of mutual funds in Bangladesh
The banking sector is the choice of most of the mutual fund managers according to the ranking in terms of investing the fund. This sector is one of the highest contributor to the country's GDP which is almost 60% according to the recent report by Bangladesh bank. On the other hand, the industry has been under liquidity crisis from the beginning of 2017 and default loans are considered as the main reason behind it. Bangladesh bank along with the government has taken steps to control the whole sector and started with lowering the CRR ratio to 5.5%. On the other hand, high rate of return from government investments like National Savings Certificate has discouraged people to invest in the banks which is why it has become really difficult for the banks to attract customers (Rahman, 2018) [10]. However, industry is recovering and it is expected to be in a stable position soon.

The second industry most of the mutual fund chose to invest is the pharmaceuticals industry. It is one of the most advanced industry of the economy in terms of technology. The industry has grown more than the GDP itself over the years (EBL Securities Ltd, 2018) [11]. The growing economy, population and income are the main driving factors for this industry. Government has always restricted foreign firms to enter the market with the help of many barriers to entry for which this sector is safe and has been growing rapidly. Despite such growth one of the drawbacks of this sector is that they are still depending on imports for their raw materials, this has not only increased their cost but also increased risk for the company's existence in the sector. Overall, the whole industry is operating quite well for which fund managers are very interested in investing in the pharmaceutical industry.

The third sector that is popular among fund managers is the mutual fund industry itself. One fund has shares in other funds which created an interdependency between all the funds. If one fund does not do well other fund investing in it will also see downfall. The industry that has been ranked fourth according to the investment ratio is the insurance industry. This sector has seen a stable growth of around 4% for last few years (Kadir, 2018) [12]. However, due to political unrest, the sector has been experiencing a downfall as they are not getting enough customers. Slowly the economy is shifting towards service sector and as the return is less risky, this sector is receiving attention from everyone and therefore has been seeing improvements which resulted in fund managers to invest in it. The fifth industry is the fuel and power sector. This is one of the most important part of an economy as it helps an economy to grow. The government of Bangladesh has taken many huge steps in order to improve this sector which includes encouraging the private sector to enter the industry. As a result, the industry is growing rapidly. These five industries are most favored by managers while investing their funds in, and rest of the industries follow them.

V. EMPIRICAL ANALYSIS

Out of 37 close end mutual funds in Bangladesh, considering the timeline between January 2013 and June 2018 in which the mutual funds operated in market, the authors plucked out 24 mutual funds to analyze. Analyzing 24 funds gives the study a rational conclusion about the market’s overall performance.

First, the authors have used Sharpe ratio to analyze the performance of mutual funds. Sharpe ratio measures the excess return that an investor receives to bear one unit of risk. The formula to calculate Sharpe ratio is

\[
\text{Sharpe ratio} = \frac{\text{Return of portfolio} - \text{Risk free rate}}{\text{Standard deviation of portfolio's excess return}}
\]

By calculating the monthly returns of the funds, the ratios are derived and they are depicted in the graph below-
As the graph 2 exhibits, the performance of mutual funds in Bangladesh is below standard. All of 24 mutual funds have negative Sharpe ratios, reaching up to -236.45%. This means the mutual funds are not generating any excess return through diversifying total risk, rather the returns from market is less than that of risk free rate. Hence, the returns of mutual funds prove to be threatening for the market’s survival.

Another way the authors find useful to judge the performance is by judging the systematic risk (β) or volatility in comparison to the market. A Beta higher than 1 represents higher volatility than market. 9 out of 24 mutual funds have beta higher than 1, which means they are highly volatile to market changes. If market changes by 1, the funds returns will change by that much as the beta suggests. The other funds have beta less than 1, which depicts they are less volatile. However, the beta values are really high which shows sign of dependency on market. The systematic risk of mutual funds is shown below-

Graph 2: Mutual funds’ performance expressed by Sharpe ratios

Graph 3: Mutual funds’ performance expressed by Beta
VII. CONCLUSION
This industry is promising considering that its highly dependent on the stock market and the industries that are performing well. However, there are fundamental problems that need to be addressed for this industry to flourish. There is scope and room for improvement but it will take a collective effort for it to flourish and become a stable market that investors trust to put their money into.

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Hazards and Labor Productivity: A Conceptual Model from the Context of Garments Industries in Bangladesh

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Abstract – This paper analyzes that to increase labor productivity, business organization needs to offer a hazard free workplace. This study intended to analyze conceptually, if hazard free workplace as an essential factor to satisfy the labor, has a favorable effect on labor productivity and efficiency. Developed based on existing literature in health and safety, this study suggests that hazards impact labor productivity in the garments industries in Bangladesh and proposes a conceptual model to discuss the relationship between hazards and labor productivity.

Keywords - Hazards, labor productivity, garments industry, Bangladesh

I. INTRODUCTION

Occupational health and safety has been detected as one of the most important influences of the well-being of modern civilized society (Papazoglou et al 2017). To ensure occupational health and safety, elimination of occupational hazards has been concerned as a major challenge in today’s industrial competitive era and considered as an important criterion in the occupational health and safety management system. Elimination of workplace hazards is an important concern because by the given statistics of Director General, ILO (2018), every year 2.78 million workers die due to work related injuries and illnesses and 2.4 million workers suffer from work-related diseases. In Bangladesh, 11.7 thousand workers suffer fatal accidents and further 24.5 thousand die from work related diseases across all sectors each year in Bangladesh (Tasnim et al 2016).

II. BACKGROUND OF THE STUDY

According to World Trade Organization’s trade statistics, there is a difference of 28.4% global apparel market share between China and Bangladesh (WTO 2017) because China’s export market share is 34.9% whereas Bangladesh’s export market share is 6.6%. The export proportion of RMG constitutes 83.49% share of total export with total export of 30614.76 million US dollar in 2017-18 (BGMEA Annual Report 2017 & Export Promotion Bureau, 2018). According to Total Economy Database (2016), labor productivity is lowest in Bangladesh as mentioned in the figure 1 below compared to other competing countries China, Cambodia, Vietnam, Pakistan, and India but conflictingly World Bank Enterprise Surveys (2016) revealed that, the number of employees per enterprise or firm size is highest in Bangladesh.

![Labor Productivity and Average Number of Employees Per Garments Enterprise](image-url)

Fig. 1. Labor Productivity and Number of Employees

Lower labor productivity is a remarkable problem in garments industries in Bangladesh. Berg et al (2011) identified that, low labor productivity is one of the major weaknesses of Bangladesh garments industry in the post MFA period. Despite of having huge human resource availability, the gap of labor productivity may arise from different organizational factors. The big question of low labor productivity in Bangladesh inquire answer about the condition of workplace environment and wage structure and other factors of human resource management affecting productivity.

II. LITERATURE REVIEW

To define occupational hazards, in the context of occupational health and safety, Reese (2017) explained hazards as activities, arrangements, circumstances, events, occurrences, phenomenon’s, processes, situations or substances (whether arising or causes within or outside a place of work) that is actual or potential cause or source of
harm. Occupational hazards cannot be proved as apparent circumstances in industrial contexts and hazards are originated and generated from some factors or attributes (Hassan and Mahmud 2017). Workplace hazards can be broadly categorized as physical hazards, chemical hazards, biological hazards, psycho-social hazards and physiological hazards (Friend and Kohn 2007). Identification of hazard does not follow a particular rule rather than methods for identifying hazards and estimating risks takes many forms (Kazerouni et al 2015). Kaya (2015) mentioned that, for system approach, beside the methods used during the work, workplace planning, design of all production tools and devices, physical and psychosocial environmental factors affects worker satisfaction impacting productivity level.

Workplace hazards impose threat on workers’ health and there are several adverse health effects of occupational hazards. Several researchers from different contexts and constituencies have shown the adverse health effects and occupational health hazards of unhealthy and hazardous workplace which are summarized in the following table-

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Country and Context</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samantha et al (2016)</td>
<td>Indian underground coal mine</td>
<td>Consequences of physical hazards are noise induced hearing loss, spinal disorder, injuries, heat stroke etc. Consequences of chemical hazards are chronic obstructive pulmonary disease, fatal injury, lung cancer, human carcinogen etc. Consequences of ergonomic stressors are trauma disorder, musculoskeletal disease, back pain, fatigue etc. Consequences of psychosocial hazards are physical and mental disorder, frustration.</td>
</tr>
<tr>
<td>Awodele et al (2014)</td>
<td>Nigerian paint factory</td>
<td>Self-reported occupational health problems are headache, memory loss, eye irritation, chest pain, nose bleeding, weight loss, anxiety, frequent disorder, cough, chronic fatigue, skin irritation etc.</td>
</tr>
<tr>
<td>(Yu et al 2013)</td>
<td>China’s electronics industry</td>
<td>Work related diseases include back pain, dizziness/ headaches, abdominal discomfort, chest distress, eye strain, sore throat, skin allergy, hearing loss etc.</td>
</tr>
<tr>
<td>(Lu 2011)</td>
<td>Filipino export processing zone</td>
<td>Workers rated occupational health hazards are headache, cough and cold, musculoskeletal disorder, hearing problem, visual problem, physical exhaustion etc.</td>
</tr>
</tbody>
</table>

The summary of literature in Bangladesh garments context, the mostly researched areas in the field of occupational health and safety are psychosocial factors at the workplace, safety concerns at the workplace, safety climate, disease prevention, workplace politics, workplace spirituality, epileptic medication in the workplaces, safe management, exposure to chemicals and perception of risks (Sembe and Ayuo, 2017). The presence of occupational hazards in garments sector are discussed and summarized below from different studies and country perspectives. As mentioned in the concept of occupational hazards, there are types of occupational hazards like physical hazard, chemical hazard, biological hazard, ergonomic stressors and psychosocial hazards. Hazardous workplace in garments sector is present not only in Bangladesh but also in other countries. Athit (2005) revealed common occupational hazards in Cambodian garment factories. The hazards have been discusses according to different job category. Workers in the cutting section are exposed to heavy lifting of cloth piles from floor to cutting table, exposed to dust, exposed to chemicals as some clothes are dyed by chemicals. 4000 workers in the sewing section who are mainly female are exposed to occupational hazards like sitting for long working hours, exposure to dust, exposure to chemicals, and exposure to hazard from working in limited space. Workers in finishing section are exposed to hazard of working with buttons causing eye strain, exposure to standing or sitting for a long time. Dyeing and washing section workers are exposed to chemicals, detergents, heavy lifting. The most reported psychosocial hazards of female workers are sexual harassment by line managers or factory managers or supervisors. The female workers also suffer from mental pressure of job insecurity. In this qualitative research, the author analyzed types of hazards through opinion survey and summarized the major hazards faced by workers. Padmini and Venmathi (2012) analyzed the occupational hazards in few garments industries in Tiripur, India which is also known as T-shirt city and manufactures 80% of India’s total export production of knitwear. This research studied different types of occupational hazards by face to face interview technique with employees. After applying descriptive statistics, according to the perception of workers, 35% of garment workers experience physical hazards such as noise, vibration, electricity, temperature and lighting. 12% workers have complains of chemical hazards such as exposure to chemical substances (solids, liquids, gases, vapors, fumes, dusts, smoke, smog). 67% of the workers reported agronomical stress for using obsolete machine, inadequate seating and standing arrangements, improper lifting of heavy goods. 33% workers are exposed to psychosocial hazards like frustration, monotony, long working hour, lack of recognition, lack of job satisfaction, lack of welfare activities, tensions at work. Lindholm et al (2016) analyzed the state of chemical safety in garments factories in Bangladesh from the perspective of corporate social responsibility and supply chain. Chemical hazard is a serious issue in garments industry because 13 million people worldwide work in the garments industry (Kortum and Cox 2011) and garments workers are exposed to chemical solvents at the time of spot removing operations. This risk exposure for a long time increases detrimental effects on the worker’s health and risk of accidents. The chemicals as grease oils, perchloroethylene, methyle chloride, n-hexane and trichloroethylene used for
removing spots and strains are sprayed by mixing with solvents (Alli, 2008) have several potential negative health effects. International labor organization (2015) emphasized on labor awareness regarding the harmful effects of chemicals, correct use of personal protective equipment’s (PPE), increased ventilation to minimize exposure and separation of spot removal areas from other parts of the factories and safe storage of chemicals as concern in garments factories.

III. DEVELOPMENT OF A CONCEPTUAL FRAMEWORK

From the above literature review, conceptual model can be developed as stated below to discuss the effects of occupational hazards on labor productivity.

Fig 2. Occupational Hazards and Labor Productivity

Physical hazards are basically those hazards that can cause injury without necessarily coming contact with body, where necessarily means many physical hazards may arose from coming contact with body like handling equipment’s or contacting surfaces (Spurlock 2017). Physical hazards more broadly include sources of harm such as electricity, noise, temperature, vibration, contact with equipment and surfaces, radiation etc. (Spurlock, B., 2017). Researchers have focused on different physical hazards on different industries and the variations in hazards are remarkable for different process designs. The physical hazards in a job shop are different from physical hazards in product focused industry or assembly line, on the other hand, the physical hazards in a manufacturing industry varies from that of a service industry. The parameters of physical hazard are mentioned in the following figure:

Fig 3. Parameters of Physical Hazards

To define chemical hazards, (Spellman F 2006) industrial hygiene simplified), chemical hazards are outcome from chemical stressors that arises from unsafe and risky chemical mixtures in the formula of gases, mists, solids, liquids, , dusts, fumes and vapors that provides toxic effects by inhalation (breathing), absorption (through direct contact with the skin) or ingestion (eating or drinking). Industries use different chemicals as raw materials to produce the outputs. Chemicals cause health and safety problems according to the nature of the chemicals also through inhalation chemicals cause serious adverse health effects. Pharmaceutical industries use lots of chemicals and workplace hazards due to those chemicals are abundant. The parameters of chemical hazard are mentioned in the following figure:

Fig 4. Parameters of Chemical Hazards

Ergonomics has been termed as a unique and independent discipline that focuses on the nature of human-artifact interactions (Salvendry 2012) like interfaces between human and machine, equipment, furniture, environment and ergonomic stressors or hazards include arise from full range of tasks such as lifting, holding, pushing, walking and reaching (Spellman 2006). Effective job design or site of job, appropriate uses of better designed tools or equipment can reduce ergonomic hazards in any workplace. The parameters of ergonomics stressors are mentioned in the following figure:
Fig 5. Parameters of ergonomics stressors

Psychosocial hazards are mostly common in developing countries (Kortum and Cox 2011) which include mental harassments in different aspects, mental distress not mental sickness, physical and mental abuse and related to psychological aspects and social aspects. Occupational hazards are the grounds of different adverse consequences from different contexts and environments. The parameters of psychosocial hazards are mentioned in the following figure:

- Late Payment
- Lack of Training
- Harassment
- Abuse
- Role ambiguity
- Sexual Harassment

Fig 6. Parameters of Psychosocial Hazards

In the western context, there are numerous and varieties of examples in occupational health and safety research. Several researchers mentioned the occupational hazards and its effect on decreased productivity and performance in other contexts. Karanikas et al (2017) discussed the balance between safety and productivity in aircraft manufacturing environment and pointed out that, inadequate or inappropriate resources affect individual and organizational performance and contribute to the relocation of companies into hazardous states and unwanted outcomes with lower quality of deliverables. Ofoegbu et al (2013) discussed the effect of occupational hazard on employee productivity in Nigerian manufacturing industries and explored hazards as negative catalyst for declined productivity. In Bangladesh, so far the researchers literature review, most researchers analyzed self-reported health situations of garments workers but exploration of hazards as negative catalysts of productivity and job satisfaction in hazardous state of workplace environment will give a new direction of research to propagate the initial research findings of researchers in the era of health and safety.

V. CONCLUSION

Readymade garment industry is a human capital based organization. This industry sector is very important for the economic growth of Bangladesh and struggling for the last few years to fulfill the international requirements to improve the workplace environment. There is a huge scope of development in this industry sector to improve the workplace and survive in the global competition. Previously, many researchers mentioned workplace health and safety as sustainability criterion of garments industry in the global competition. The workers are exposed to workplace hazards in different way but previous researches and studies are still based on self-reported health diseases and compliance management. Lower labor productivity is a serious issue in Bangladesh garments sector but no research has been conducted to arise the issue and the causes of lower productivity. The research findings from this research surely add value for survival in the global competition and betterment of the garments workers.

REFERENCES


Abstract - To determine the factors that explain the customer intention in online shopping platform. Design-For doing this research the secondary data is used and the questionnaire was formulated to gather data and test the model. For this research, the Google Forms was used to collect the data from the respondents. Factor analysis and Regression analysis was applied to test the research model. The regression model suggests that customer intention for online shopping platforms was influenced most by customer’s perceived enjoyment and customer’s attitude towards online shopping platforms. Although, customer’s perceived ease of use doesn’t have that much of an impact over customer’s intention. When creating an online shopping platform, the future researchers should consider the customer’s enjoyment and customer’s attitude. The study tests the theory of technology acceptance model and enhances the literature on online shopping platforms.

Keywords – Online shopping platforms, E-commerce, Bangladesh, Customer Intention.

I. INTRODUCTION
The online shopping industry in Bangladesh is growing at a very high rate. Bangladesh crossed 77 million marks at the first eight months of 2017 [1]. Moreover, Taka 3-4 Cr. is sold daily through e-commerce websites, where 85 percent is on cash on delivery [2]. E-commerce is a very big platform to conduct a research on in Bangladesh and not only just that, but a number of people have already conducted about this vast part of the market [3]. The main research question, which influenced us to conduct this research, is “what are the elements or the antecedents that mainly impact on customer’s intention in the online shopping platform?” This study will add a contribution to this huge information. This question mainly arose because of the rapid development of this market and the industry is creating a huge impact on the Bangladeshi economy.

Perceived enjoyment
Perceived enjoyment alludes to the degree to which the use of a technology (like mobile map) is seen to be enjoyable [11]. The more enjoyable the online shopping process at a particular website, the more likely consumers will purchase on that website [12]. From these above features and discussion, it can be hypothesizing that:
H1. Customer’s perceived enjoyment positively affects customer’s intention to shop online.

Attitude
Attitude is a “mental position with regard to a fact or state or a feeling or emotion toward a fact or state” (Merriam Webster’s Online Dictionary). “Attitude” is often used as a synonym for habit. This is usually complicated by references to some hypothetical instinctive, mental, emotional, or feeling concomitant, latent, inhibited, or active in the response [15]. Therefore, it can be proposed that:
H2. Customer’s attitude positively affects customer’s intention to shop online.

Perceived ease of use
“Perceived ease of use is the customer’s perception that it would easy to interact with the e-commerce websites” this is defined by [10]. [17] Perceived ease of use is a hedonic-oriented factor. Therefore, it can be proposed that:
H3. Customer’s perceived ease of use positively affects customer’s intention to shop online.

II. METHODOLOGY
Secondary research papers was explored to understand the research process and understanding of the past researches where they talked about the customer intention over online shopping platform or ecommerce based businesses. The next step involves developing the research model and the questionnaire. Modification was required at this stage to get the best result for the research and also to improve the quality of the work.
Then the data was collected from the respondents through online platform (Google Form). The questions rated on Likert scales, which had five points. The questions were asked mainly about customer perceived enjoyment, perceived ease of use, their attitude and their intention towards the online shopping. For each scale item 1 was considered for the question “strongly disagree” and five for “strongly agree”. We also collected the demographic data from the respondents. For this research, the data was collected through online survey and the sample size was 101. The questionnaire was shared through different online platforms and was asked to fill the data accordingly. Our final sample size was 101. However, the respondents who participated, from their 59.8% were female students and rest of the 40.2% were male respondents. 25 questions were asked to the respondents and almost all of them gave their valuable answer according to our instruction. The demographic section states that variety number of respondents gave their data for this research paper. For example, mostly, our respondent’s age group was around 18-25 years old (approximately 87.3%). From 80.4% of them were students and 62.7% of them had no income. Moreover, from all the respondents, 86.1% of them were unmarried.

### III. RESULTS

Varimax rotation was used to conduct the factor analysis and for extracting the value, we used principle component analysis. From the analysis, four factors were recovered. The Eigenvalue of each factor was greater than one. Total cumulative variation explained by factor analysis was 63.1%. Below tables are showing, the summery statistics, the reliability coefficients and correlations among the variables included in this study.

<table>
<thead>
<tr>
<th>Component</th>
<th>Total Variance Explained</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Eigenvalues</td>
<td>Extraction Sums of Squared Loadings</td>
<td>Rotation Sums of Squared Loadings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Component</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2.265</td>
<td>22.649</td>
<td>22.649</td>
</tr>
<tr>
<td>2</td>
<td>1.559</td>
<td>15.591</td>
<td>38.241</td>
</tr>
<tr>
<td>4</td>
<td>1.139</td>
<td>11.385</td>
<td>63.101</td>
</tr>
<tr>
<td>5</td>
<td>0.974</td>
<td>9.736</td>
<td>72.837</td>
</tr>
<tr>
<td>6</td>
<td>0.834</td>
<td>8.342</td>
<td>81.178</td>
</tr>
<tr>
<td>7</td>
<td>0.695</td>
<td>6.946</td>
<td>88.124</td>
</tr>
<tr>
<td>8</td>
<td>0.492</td>
<td>4.924</td>
<td>93.048</td>
</tr>
<tr>
<td>9</td>
<td>0.395</td>
<td>3.949</td>
<td>96.997</td>
</tr>
<tr>
<td>10</td>
<td>0.300</td>
<td>3.003</td>
<td>100.000</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Reliability analyses showed that the internal consistency of most of the explanatory variables in the study was relatively high and considered good because, [17] the alpha value should be 0.70 or higher. And some researcher says that even 0.60 is considerable. And the research shows the reliability test to be valued exactly 0.60 for the 10 items that we found. And only the Perceived enjoyment has less than 0.60.

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
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<tbody>
<tr>
<td>PEU2</td>
<td>.686</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEU3</td>
<td>.731</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEU4</td>
<td>.747</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INT5</td>
<td></td>
<td>.872</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INT6</td>
<td></td>
<td>.866</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATT2</td>
<td></td>
<td></td>
<td>.809</td>
<td></td>
</tr>
<tr>
<td>ATT3</td>
<td></td>
<td></td>
<td>.858</td>
<td></td>
</tr>
<tr>
<td>PE3</td>
<td></td>
<td></td>
<td></td>
<td>.661</td>
</tr>
<tr>
<td>PE4</td>
<td></td>
<td></td>
<td></td>
<td>.646</td>
</tr>
<tr>
<td>PE6</td>
<td></td>
<td></td>
<td></td>
<td>.722</td>
</tr>
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</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.595</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 1: Perceived Ease of Use

<table>
<thead>
<tr>
<th>Reliability Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's Alpha</td>
</tr>
<tr>
<td>.650</td>
</tr>
</tbody>
</table>

Table 3: Attitude

The validity on table 3 shows that most of the scale has a high correlation between each scale. For the validity analysis, each of the same elements of the same variables should correlate more than 0.5. However, the validity analysis for this research shows that there is a significant correlation between the elements of the same variable but some elements have a little less correlation between themselves.

To analysis the level of significance for the whole model, the ANOVA table shows that the whole model for this research is significant. As the significance value is shown 0.000 which is less than 0.05. Moreover, in the...
coefficients table it is seen that all the variable’s significance values are less than .1 considering the confidence interval of f-statistics is 90% here and our significance value came by the overall F-statistic (p<0.000). All of the three factors had a significant effect on customer intention of online shopping platform. These includes perceived enjoyment (b=0.211; p<0.034); customer attitude (b=3.157; p<0.002) and the “Customer Perceived Ease of Use” dimension (b=1.81; p<0.076). This analysis suggests that the customer attitude has the greatest impact in customer intention in terms of online shopping platform.

### ANOVA*

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>.515.379</td>
<td>3</td>
<td>171.793</td>
<td>14.081</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>1146.795</td>
<td>94</td>
<td>12.200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1662.173</td>
<td>97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| a. Dependent Variable: INTT |
| b. Predictors: (Constant), ATTT, PEE, PEUU |

### Model Summary*

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.557$^a$</td>
<td>.310</td>
<td>.288</td>
<td>3.49284</td>
</tr>
</tbody>
</table>

| a. Predictors: (Constant), ATTT, PEE, PEUU |
| b. Dependent Variable: INTT |

### Coefficients*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>6.905</td>
</tr>
<tr>
<td></td>
<td>PEE</td>
<td>.213</td>
</tr>
<tr>
<td></td>
<td>PEUU</td>
<td>.232</td>
</tr>
<tr>
<td></td>
<td>ATTT</td>
<td>.453</td>
</tr>
</tbody>
</table>

| a. Dependent Variable: INTT |

**IV. DISCUSSION**

This study tasted of customer intention for the online shopping industry using the theory of technology acceptance model. From the results it was determined that the “Customer’s Attitude” was most important to customers. The analysis for this research shows that Customer Attitude towards online shopping platform is the most important factor that is needed to be considered by the online shop companies. Based on the standardized regression coefficients, “Customer’s Perceived Enjoyment” was the next important variable that influences customer intention over online shopping platform. Enjoyment is also one of the important factors, which affect much on customer intention while doing online shopping.
V. CONCLUSION

Using the website or any online platform for shopping platform needs to be created in a way so that the customers find that very user friendly. Making an online platform user friendly is pretty important for getting customer satisfaction. However, this point was needed to be notified earlier because it’s also an important factor, while a customer deals with online shopping. In Bangladesh, the online shopping trend has already started and a good number of people use the process to buy products much more now a day.

It is believed that the model which is used to for assessing customer intention in online shopping platforms is very useful. Moreover, if any online shopping platform company owner truly wants to gain a competitive advantage over their competitors then he/she needs to increase the level of customer intention by emphasizing the three significant in this study.
A Review of Human Resource Information System Implementation Approach in the Corporate Sector of Bangladesh

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Paper ID: ICBM-19-0685

I. INTRODUCTION
Human Resource Information System (HRIS) is a software that enables an organization to perform various HR related functions in a digital platform. The software automates the manual process and saves time, cost and resources. The purpose of HRIS adoption is to help an organization to manage HR costs more effectively and allocate minimum resources to accomplish the goal. HRIS helps to define decision making criteria and speedy execution of the process. In general, HRIS can perform all HR functions i.e. recruitment, performance management, payroll, training, and development etc. Usually, a complete HRIS have the following modules:
1. Organogram Setup (Organization Management)
2. Core Human Resource Management System
   a. Personal Information management
   b. Employee Life Cycle (Transfer, Promotion etc. Management)
   c. Dynamic Report Designer
3. The Employee Attendance Module
4. Leave Management
5. Training and development
6. Performance Management System
7. Comprehensive Recruitment & Selection Management
8. Comprehensive Payroll Management
9. Outside Payroll Items
10. Employee Cost to the Company
11. Employee Self-service
12. Comprehensive Final Settlement Management
13. Management Dashboard

II. LITERATURE REVIEW
[1] studied 3 large organizations to investigate their human resource information system implementation process. Through their study, they identified 4 major challenges that management needs to consider for implementation of human resource information system. The challenges are: maintaining salience, complexity of people management, creation and application of relevant HR matrices and managing user acceptance.
[2] used archival research method to investigate the different types of factors that impact the adoption of a human resource information system. In their research, they elaborately discussed the organizational, environmental and technological factors that influence the adoption of human resource information system in an organization.
[3] researched on seven state universities with 26 item questionnaires to analyze the benefits and barriers of human resource information system adoption. Their study revealed that lack of knowledge and funding create obstacles in human resource information system adoption.
[4] studied Jordanian business organization to understand the extent of human resource information system practice. Their study indicated that the extent of human resource information system practice varies based on the type of business and experience. According to [5], the aim of strategic human resource management is to achieve strategic organizational objective. [6] compared the traditional HRM process with digital human resource information system based on 5 aspects: quality, dependability, flexibility, speed and cost. He concluded that electronic HRM system is a better choice as it improves the effectiveness of the organization.
[7] emphasized on the advantages brought by the human resource information system in mid to large organizations. Their research showed that organizations can record efficiency and effectiveness of HR planning through a human resource information system.
[8] investigated the risks and challenges faced by organizations in implementing human resource information system. According to their research, the most common challenge faced by organizations in
implementing human resource information system is resistance in adopting new technology. [9] tried to connect human resource information system with users trust in technology. They suggested 11 propositions to support human resource information system implementation success. [10] conducted an institution based cross-sectional study to understand the readiness of Ethiopian health sector for implementing human resource information system. Their study showed that the readiness is low due to lack of competency, poor technical support and shortage of funding. [11] tried to identify the factors influencing the adoption of human resource information system in the garments industry of Bangladesh. The research revealed that there are 3 broad factors that create barriers in the implementation of human resource information system. They are financial factors, managerial factors, and organizational factors. Among these factors, financial factors have greater implication than the other two. [12] explored factors that impact management decision in implementing human resource information system in hospitals. They investigated 13 factors under 4 dimensions to understand the implication of different factors. The result exposed 5 most critical factors: top management support, IT infrastructure, IT literacy, cost and competitive pressure that play a significant role in human resource information system adoption. [13] applied actor-network theory to examine the relationship between human resource information system and HR functions.

Based on literature analysis we can conclude that implementation of human resource information system helps organizations to achieve competitive advantage. Regardless of the challenges if any organization follows a structured approach then they can improve the efficiency and effectiveness of the HR management process.

III. METHODOLOGY
This is a qualitative research report. Primary data was collected from direct conversation with HR personnel from 6 different organizations. In addition to that research data is collected from external sources (books, journal articles, etc.) to gain an insight about the current human resource practices adopted by some of the well-reputed companies of Bangladesh in line with the rest of the world. The chosen companies are Grameenphone, Banglalink, Kohinoor CCL, BATB and IPDC Finance Limited. The companies were chosen based on their selection of human resource system. All 5 companies implemented the same human resource system and followed a similar approach in adopting it. A questionnaire comprising 12 questions was provided to all 5 companies and based on their response we designed the implementation guideline.

IV. ANALYSIS
We have prepared a comprehensive questionnaire and provided it to the selected organizations to understand their HRIS implementation approach.

<table>
<thead>
<tr>
<th>Human resource information system Questionnaire</th>
<th>Grameenphone</th>
<th>Kohinoor CCL</th>
<th>British American Tobacco Bangladesh</th>
<th>Banglalink</th>
<th>IPDC Finance Limited</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Why did you choose to implement human resource information system?</td>
<td>To improve current HR practices</td>
<td>To increase the efficiency of HR department</td>
<td>To automate HR practices</td>
<td>To enhance current HR activities</td>
<td>For ease of running HR operations and to automate the manual process</td>
<td></td>
</tr>
<tr>
<td>2. In what areas HR system had a positive impact</td>
<td>Decision making, record keeping, performance management</td>
<td>Record keeping, ensuring data security</td>
<td>Record keeping for leave and attendance, performance management</td>
<td>Training and development, recruitment assessment, payroll process</td>
<td>Reduced human error, improved efficiency, report generation</td>
<td></td>
</tr>
<tr>
<td>3. How long have you been using this system?</td>
<td>10 years</td>
<td>10-12 years</td>
<td>12 years</td>
<td>2 years</td>
<td>1.5 years</td>
<td></td>
</tr>
<tr>
<td>4. Was the project finished on time and on budget? If not, why not?</td>
<td>yes</td>
<td>yes</td>
<td>Within budget but not within time as we required more customization</td>
<td>yes</td>
<td>Within budget but project time was extended due to modification and enhancements</td>
<td></td>
</tr>
</tbody>
</table>

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<thead>
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<td>To enhance current HR activities</td>
<td>For ease of running HR operations and to automate the manual process</td>
<td></td>
</tr>
<tr>
<td>2. In what areas HR system had a positive impact</td>
<td>Decision making, record keeping, performance management</td>
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<td>Reduced human error, improved efficiency, report generation</td>
<td></td>
</tr>
<tr>
<td>3. How long have you been using this system?</td>
<td>10 years</td>
<td>10-12 years</td>
<td>12 years</td>
<td>2 years</td>
<td>1.5 years</td>
<td></td>
</tr>
<tr>
<td>4. Was the project finished on time and on budget? If not, why not?</td>
<td>yes</td>
<td>yes</td>
<td>Within budget but not within time as we required more customization</td>
<td>yes</td>
<td>Within budget but project time was extended due to modification and enhancements</td>
<td></td>
</tr>
</tbody>
</table>
5. Is the system easy to use | easy | easy | easy | yes. In-house training was provided by Banglink management through tutorial | At common user end, it is easy to use. For admin users training was provided by system providers

6. How secure is the system? Did you face in any security issues? | secured | secured | secured | secured | secured

7. How long did it take to implement the system? | 8-10 months | 7 months | 8 months | 5 months | 12 months

8. What problems have you had during system implementation? | bugs, management | Bugs, new user requirements | Time shortage, reluctance to change | bugs, data discrepancy | Change management, decision making

9. Is there any additional feature you wished the software had? | No | No | Real-time data integration for leave and attendance | Some more reports | System notification to line managers for employee confirmation, performance review etc.

10. What would be your suggestion for human resource information system implementation | Conduct system testing properly in test server, input correct data | Strictly finalize project requirements, follow issue log for system testing | Educate the users | Ensure technical infrastructure support, user training | Dedicated project team, proper documentation

11. What was the most crucial activity in system implementation | User acceptance test | BRD preparation | User training and testing | Deployment and parallel run | Data migration

12. What prerequisites an organization should assess for implementing HRIS | Educate users | Infrastructure support | Finalize business requirement document | Ensure data accuracy | Infrastructure support and application support resources

V. FINDINGS

Based on the primary data and secondary research we have developed an implementation guideline for human resource information system.

Assess infrastructure readiness:

For implementing a new system at first an organization needs to ensure infrastructure readiness. The infrastructure includes local area network, servers, workstations, system software, internet facilities that must be made ready as per the requirement of the envisaged System

Formation of the project steering committee:

A project steering committee includes members of senior management who have the authority to make any decision regarding the project. All important documents of the project like business requirement document, project plan, software requirement specification (SRS), major change request, memo etc. must be reviewed and signed by the project steering committee.

Prepare Business requirement documents:

The scope for implementation must be finalized by the stakeholders before starting the project. Different organizations have different HR policies and payroll structure. So, prior to implementation whole HR process should be reviewed to identify the scope of improvement and then all decision-making criteria need to be analyzed to approve the final business requirements. Organization needs to form a team of personnel from all relevant departments whose main responsibility would be to define the scope of the business to come under automation. This team will also be responsible to participate in the User Acceptance Test as company representatives and provide acceptance to the final product. This team should be jointly headed by the project steering committee. Availability of this team during the entire life-cycle of the project will be key to successful implementation of the project. BRD is sent out to vendor or technical team who will provide the human resource information system solution so that they have a clear idea about project scope.

Prepare project plan:

A detailed project plan including the allocated budget, resources and timeline should be formed. The project plan must be approved by the project steering committee. Throughout the project, the project plan should be strictly followed. Any change to existing project plan must be reapproved by the steering committee.

Non-Disclosure Agreement (NDA):

A mutual NDA should be signed among the implementation partners of the system. This ensures safety and security of shared data

Technical evaluation and gap analysis:

If a company already has a legacy system and plans to accommodate a new readily available solution, then it is
important to conduct a technical evaluation and gap analysis of the ready product. Also, it has to be assessed that if the present infrastructure can support the incorporation of a new software.

**Software Requirement Specification (SRS):**
Based on the BRD vendor prepares the technical document Software Requirement specification (SRS). SRS outlines all different modules and functions of the system. The system is developed or customized based on the SRS document.

**System Development:**
Based on SRS, system is developed by either in-house developers or external vendors. Different companies have different HR policies. So, even if multiple companies use the same system the functionalities may differ based on the customization during system development. From the sample companies we have communicated for this research we got to know that it’s better to have the system developed in module by module basis.

**Data Migration:**
Data migration is a crucial activity for this project. If a company has a legacy system, then this activity becomes even more challenging as all data needs to be formatted based on the new system requirement. It is imperative to ensure the authenticity of data before entering in the new system otherwise, system will produce faulty output.

**User manual and training:**
After the system is deployed user manual should be circulated among common users to provide a guideline of using the new system. Vendor should provide adequate training to system user to ensure smooth operation of the system.

**User Acceptance Test (UAT):**
After users are well acquainted with the different features of the system they will conduct user acceptance test (UAT) to ensure all required features are working properly. Based on the testing UAT scripts are prepared where each test is marked pass or failed. Failed tests and bugs are recorded in issue log and sent back to vendor for fixation.

**Issue log:**
A proper issue log should be maintained to record all the issues and bugs that incur after UAT. This log will help to keep track of system testing and resolve the issues time to time. Issue log should be updated on a regular basis to maintain accuracy.

**Parallel run:**
As payroll is the most sensitive module of human resource system project team need to ensure full proof operation of the module. Parallel run indicates the simultaneous operation of old practice and new system for payroll module to crosscheck the outputs of both. During the parallel operation phase, the user will enter data, process payroll and run other modules. All the output generated by the system will also be verified by the user. Any problems and minor modifications to the software will be resolved by system developers. During the parallel phase the manual payroll will be maintained, and the developed payroll will simultaneously be running. After the successful completion of the parallel run, the old payroll will be replaced by the new payroll system.

**Project closure:**
After successful UAT completion of the system project closure form is prepared where all steering committee members approve the completion of the project. After project closeout service level agreement is signed with vendor for maintenance support.

VI. CONCLUSION AND RECOMMENDATION
A new software installation requires rigorous support from internal stakeholders. The users have to adapt with change management immediately to ensure smooth transition from old practice to new one. Through our research we have found an organization should keep in mind the following things for implementing a human resource information system:

- Organizations should educate the existing workforce about the importance of implementing human resource system.
- Before planning to implement a new human resource system, infrastructure readiness of the organization should be assessed.
- Delay in decision making hampers any project immensely. So, top management should ensure any decision regarding the project is prompt and unanimous.
- During data migration project team should ensure if there were any discrepancy earlier that should be resolved before entering the data in the new system. Otherwise, defected input will produce faulty output.
- Proper training should be provided to users so that they can operate the system at ease.
- Proper documentation should be maintained throughout the project lifecycle.
- All the issues and bugs that incur should be resolved based on the issue log.
- System functionality should be validated through UAT and parallel run.

Human resource information system ensures smooth operation of HR operations. It helps an organization to adapt to new technology and increases efficiency and effectiveness in human resource management. Automation of manual practice reduces human error and ensures data security. This paper aims to provide a step by step guideline that will help organizations to implement human resource system in a structured manner within the allocated time.
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Investigating Different Criteria to Include M-Learning into the Traditional Learning Environment in HLI

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Abstract – The current generation of learners are very engaged and focused on the current mobile technologies. It would be very practical to implement a learning environment that includes such technologies. A learning environment created through mobile learning (mLearning) concept is already being used individually by some educators inside or outside the class room and by some administrators to handle and maintain the administrative tasks in educational institutes. But there is inadequate research published to implement mLearning into the traditional learning environment considering the educational institute as one unit. This study focuses on the different criteria that an educational institute (not individual) should consider before implementing mLearning into their traditional learning system.

Keywords – mLearning, Learning environment, HLI

I. INTRODUCTION

The online learning environments, electronic learning (e-learning) and distance learning (d-learning), has been widely in use in the Higher Learning Institutes (HLI) [11]. Though such integrated environment has increased the learning opportunities of the students, it also has a few negative impacts on the students. The learners suffer from some shortcoming such as lack of involvement (feeling of isolation), motivation, human interaction, and emotional problems (feeling of frustration) [1]. Mobile technologies have the potential to provide a new learning environment, Mobile Learning (mLearning), with a combination of both real world and digital-world resources to overcome such negative attitude.

Advances in mobile technologies offers ubiquity (presence any time), connectedness (collaborative), mobility (anywhere), and seamlessness (continuity) in learning [2]. Mobile learning offers new learning approaches, environments, forms of engagements and assessment with the support of mobile technologies. Thus, challenging the orthodoxies of traditional learning [3][4]. Some interesting facts were presented in a survey conducted by Internet Society (2016) [5] across the Asia-Pacific. The mobile broadband networks are in use much more than that of fixed broadband in most countries. More than one-third of Asia-Pacific’s population access the mobile networks via their mobile devices. The use of mobile technology to complete the daily responsibilities and to socialize with the peers have contributed to this progress.

The HLI has a great impact with the well establishment and widely acceptance of D-learning and E-learning environment into their traditional learning environment. In various areas of study, these environments have enhanced the existing process of teaching and learning [33]. The growth of mobile technologies services and products, and the increasing availability of handheld and wireless devices, has created new opportunities for businesses and governments, as well as educational systems and prompt consideration of their applications [23]. Hence, it is clearly noticeable that e-commerce is becoming m-commerce, online banking is becoming m-banking, and e-learning is becoming mLearning; so mobile technologies are no longer restricted to only telephonic services [16].

The availability and accessibility to the materials and information for learning and implementing allows any person to access education materials and information irrespective of time and place. Such services have given a control to the learners to learn what, when, and where regardless of where they live, their status, and their culture [6]. The communication between the educators, trainers, and learners has become seamless, specially, for planning, preparing, accessing, delivering, and receiving of the learning resources/materials to/from anywhere and at any time [6].

In this research we have investigated/reviewed relevant literature to identify different factors/criteria which can contribute in the decision and implementation process of including mLearning into the formal learning environment for higher learning institutes.

II. INTEGRATING MLEARNING INTO HLI

Mobile learning (mLearning) is more inclined towards informal learning as a learning environment because of its properties. Mobile technologies can support four approaches of truly learner-centered learning – individualized learning, collaborative or shared learning, situated learning, and informal and life-long learning [20]. In today’s technology-driven era mobile devices are deemed to be an essential vehicle through which learning material can be accessed, content can be generated, and communication can be made [15].
The online learning environments e-learning and d-learning have already been integrated into the formal or traditional learning environment of many of the higher learning institutes (HLI). The integration of mLearning strategies in formal education institutions and processes is still at a primary development phase. Despite the growing interest, most of the initiatives are isolated with a rare level of continuity and they do not yield the expected results in most cases [7]. For example, instructor can deliver, and students can receive the formative evaluation and feedback via a mobile device [8]. Internet link can be offered using Quick Response (QR) codes to access supplemental resources to support a face-to-face course [9]. Mobile devices can be used for administrative tasks like checking attendance, due reminder, learning progress, etc. Some universities have been pioneering mLearning. Abilene Christian University, Stanford University, and the University of Washington [10] are some of them. Even though the number of HLI that is promoting mLearning is growing, it is still challenging to implement mLearning environment in higher education.

III. ASPECTS OF INTEGRATING mLEARNING

The integrating challenges includes the changing nature of knowledge delivered and earned, the students’ activities in gathering knowledge, and the expectations of the global market [11]. The aspects in the cultural, social, and organizational, are also influential factors in integrating the mLearning into traditional learning environment [12] [13] [14]. Integration of a mobile device-based learning environment into education system will interrupt traditional paradigms. The knowledge building society has moved towards a digital world of vast and growing reservoirs of shared information. Mobile learning enables the instantaneous access to such reservoirs providing a platform to communicate and share knowledge between individuals and groups, independent of time and physical location [34]. Use of mobile technology in education will provide the motivation to improve access to shared knowledge, explore the changes in teaching and learning methodologies and align with wider institutional or business aims [35]. Some of the major benefits provided by mLearning includes mobility, convenience, interactivity, collaboration, environmental-friendly (less printing), flexibility, and accessibility (disable learners) and also extends learning opportunities to a wider range of area (other literature, fun and engaging) and people (appeal to old & new generation) in society [38].

Some of the outcomes of mLearning applications are that it promotes communication, the student’s autonomous learning, enables learning anytime-anywhere, taking the teaching–learning process out of the classroom, etc. This requires the development of new methodological strategies [37] that can contribute to opening up the schools to the outside world, creating bonds between schools and families and between teachers and students, allowing teachers to guide the students' learning process inside and outside the classroom [39]. This causes the barriers between formal and informal education to debilitate [7].

Some of the features of traditional teaching can be supported by the mLearning applications as well as wide range of sophisticated systems designed and developed for mLearning environment in higher education [40]. There is already some basic use of mobile devices mainly in three functionalities – administration (calendaring, timetabling, etc.), reference (e-books, dictionaries, etc.), and interactive (response-feedback activities) [36][41].

Following are some examples and practices of applications using mobile technologies for both formal and informal learning:

- SMS-based interact about class activities, notes, submission and delivery of reports, study meetings, doubts, discussion forums or video classes through cell phones etc. with the classmates and the teachers [42][43][44][45].
- Accessing learning management systems (which are specifically designed for mobile devices) for course related activities and/or administrative activities anywhere or whenever [46][47][48].
- Mobile devices can be used to record podcast of comments or lecture syntheses and later can be listened by the teacher or classmate after a class [46][49].
- Evaluation can be made using mobile enable application by answering a quiz through a cell phone based on watching a video, listening an audio track, or accessing previously defined content using mobile devices [50].
- Mobile devices can be used to access mobile virtual worlds (e.g. Third Dimension Virtual Worlds via Pocket Metaverse) [40].
- There are a good number of educational games designed for mobile devices [51][52].
- Mobile devices can be used to exchange information or engage in informal learning activities through social networks such as Facebook and Twitter [40].

Considering all the aspects of mLearning and its linkages, the organizational factors must be captured to integrate mLearning environment into the traditional learning environment. Based on the literature studied the
The integration process and execution must also ensure that the society, as a consumer, have a positive impact by the organizational outcome, which are the graduates and the research. An educational model for HLI is needed to be investigated that would be able to influence the decision maker of the HLI as well as the educators and learners to integrate and use mLearning.

### A. TECHNOLOGICAL ASPECTS

There have been several studies for the most abstract and generic technical aspects of mobile learning service qualities.

![Figure 2: Technical Quality model [15]](image)

Following table contains the summarized technical aspects from different literatures [15][17][18][19][21][22].

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>knowledge &amp; content</td>
</tr>
<tr>
<td>Response times</td>
<td>quick processing, storing and communication of data upon request</td>
</tr>
<tr>
<td>Flexibility</td>
<td>learning can be made learner-centred, personalized, technically easy to use,</td>
</tr>
</tbody>
</table>

Table 1: Technical aspects

Based on the technical aspects a technical Quality model was proposed [15]. The model contains all the aspects bonded with mLearning application in one end and stakeholders’ satisfaction on the other end.

The quality of mLearning functionalities are depended on the technological aspects. And the service quality features [32] are the key factor for the stakeholder satisfaction in the learning environments for a successful learning process [15].
B. Learning Environment Aspects

Many attempts have been taken by the learning environment researchers to understand different aspect of the traditional classroom learning environment. Here two perspectives are defined in different literatures – learner’s perspective and educator’s perspective.

<table>
<thead>
<tr>
<th>Perspectives</th>
<th>Aspects that must be maximized through integrated mLearning environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner’s perspective</td>
<td>the optimization of student autonomy, collaboration, interaction, communication, learning attitudes, perceiving of knowledge, generating, implementing and sharing of ideas, experimentations, understandable, usefulness, and accessibility of learning materials, proper guideline for new learning environment, balanced assessments, etc.</td>
</tr>
<tr>
<td>Educator’s perspective</td>
<td>effective teaching methodologies irrespective of different abilities, sexes, or ethnic backgrounds, adaptiveness of introducing a new or changed learning environment, preparation of adequate and adaptable learning materials according to the learning environment demands, quality of the outcome of the students, fair assessment of the students’ abilities, multiple method of assessment, full control of the classroom, etc.</td>
</tr>
</tbody>
</table>

Table 2: Learning Environment aspects

The formal learning has its own features (e.g. cohorts, campuses, courses, semesters, and assessments) and a regime of monitoring and evaluating. These features need to be mapped with the unique attributes of mobile learning environment which are more from the informal learning vicinity. This puts mobile learning in a different characterization. The differences or changes in these features raises concerns in terms of sustainable deployment in large-scale [6].

A verified educational model is required to embed mLearning environment into the traditional learning environment system with the goal of constructing highly skilled graduates and innovative research outcomes for the advancement of the society. Through the model we may recognize the complexities, plot and associate the attributes between the learning environments.

C. EDUCATIONAL INSTITUTE ASPECTS

Implementing or integrating a new learning environment into the traditional learning environment model for HLI should contain in all the three decision levels (strategic, planning, and operating) of an HLI. These should be based on the output of an educational institute to the society.

Table 3: Functionalities of an HLI

The output from the HLI are consumed into the society. The current and future requirement of skillset of a graduate into the society influences the decision at strategic, planning, and operating level of an HLI. Considering educational institute as a service industry and a service industry measured in terms of supply chain management might be able to identify and measure the factors and outcome of the educational institutes [27].

Academic supply chain management was first studied in 1996 by O’Brien and Kenneth [28]. Later in 2007, Lau [29] conceptualized the educational supply chain management (ESCM). The empirical model named Integrated Tertiary Educational Supply Chain (ITESCM) was delivered by Habib on 2010. A revised version of ITESCM was brought by Mr. Habib and Pathik in 2012 [31]. Through the use of a novel methodology on this this model, the main goal of producing highly skilled graduates and innovative research outcome for a tertiary level institute can be achieved by the administrators and potential investor of the institute, for ultimate advancement of the society [30]. The general concept portraying the ESCM model works within and around the entities of a university. Any university functions in close collaboration with external entities like employers of its graduates, secondary and higher secondary schools and colleges and internal entities like its current students and alumni, university staff in designing curricula [28].

Total quality management (TQM) may also be applied to enhance the quality of learning environment. The teaching, learning (both theoretical and practical) and research must be supported through the quality learning environment.

Figure 4: ITESCM Model - Redesigned [31]

Educational supply chain management produces a number of competitive advantages with its customer driven vision through a number of equations from the model. This can guide to improve learning productivity, boost the satisfaction of teachers and students, produce quality graduates and research. Gradually, many final outcomes are recognizing the partnership with the
employers in maintaining quality in their education supply chains with potential benefits [31].

IV. CONCLUSION

Measuring the performance of an educational institutes based on the input, process and output is very challenging. It requires a complete set of performance measurement criteria, factors, stakeholders, etc. along with their properties and characteristics. Changing any of the factors, the learning environment in this study, will probably have an effect on the performance of an institute. And, all the new parameters (for the new learning environment, mLearning, in this study) should in turn change the process of measuring the performance. Hence, an educational model, like ITESCM, is required which will be institution wide, containing and integrating all factors of an educational institute, with a precise methodology to measure the performance or outcome of the institute with any changes in the factors.

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Embedding M-learning Environment into Education Supply Chain Management Model for HLI

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Abstract – The mLearning environment is already being practiced independently by some educators inside or outside the class room and by some administrators to handle and maintain the administrative tasks in educational institutes. But an educational institute may not possess a general strategy to implement mLearning into the traditional learning environment. Implementing a new process into the traditional process requires to establish a proper educational outcome. Hence, just a defined set of criteria to implement mLearning into the traditional learning environment would not convince the decision makers of an educational institute. Considering educational institute as a service industry, an educational supply chain management can be considered to map the educational outcome with and without mLearning environment. This study investigates the Education Supply Chain Management (ESCM) model, maps different criteria of mLearning with the ESCM models, and attempts to establish a set of integration criteria to embed mLearning into ESCM model.

Keywords – mLearning, ITESCM, HLI

1. INTRODUCTION

Mobile learning facilitates both individual and collaborative learning allowing truly anywhere-anytime personalized learning. It removes some of the formality and adds variety to the conventional lessons/courses [1]. mLearning encapsulates different features of learner-centered pedagogies. This includes discovery learning, constructivist learning, problem-based learning, situated learning, etc. which raises self-confidence and self-esteem of the learners [2][3].

The trend towards greater use of mobile technologies is responsible for several challenges faced by higher education institutions, including the changing nature of knowledge, the changing nature of students, and the changing nature of the expectations of the global market. Therefore, to compete globally and cover the shortage of skilled graduates, universities need to cope with the global challenges. All over the world higher education institutions are under pressure to improve the quality of teaching and learning by integrating up-to-date technologies. In the developing world, such a move is much more appealing, as new technologies can solve critical issues such as access to education [2].

In terms of the challenges associated with mLearning, the diffusion of mLearning in higher educational institutions may result in significant cultural change. For one, the current traditional teaching culture (face-to-face) will have to change [4]. The pedagogic practices needs to be changed and new technologies and teaching methodologies must be learned by the university educators, which might be unfamiliar to them [4]. Furthermore, not all courses are suitable for the mLearning environment [5]. More importantly, Internet connection issues concerning bandwidth, security, speed, reliability and network coverage of service provider warrant much attention in ensuring the smooth implementation of mLearning [6].

There is also the issue of university educators being uncomfortable using technology given that they comprise of earlier generations. Many of these university educators may also feel somewhat threatened by mobile devices knowing that their students are more technology-competent than they are themselves [7].

The institutes may adapt to the requirement of an ever-changing society through the integration of processes and resources from informal education to formal education. The integration may contribute to the demand of the society for a more flexible and individualized education putting the learners at the center of the teaching–learning process and offering them more control [8]. As a consequence of this, mLearning is being experimented as the bridge between the formal and informal education [9].

A verified educational model is required to include mLearning into the traditional learning environment in HLI, through which we can understand the complexities, map and combine the attributes between the learning environments, and ensure ultimate target of the creation of highly skilled graduates and novel research outcomes for the society’s betterment [10].

Measuring the performance of an educational institutes based on the input, process and output is very challenging. It requires a complete set of performance measurement criteria, factors, stakeholders, etc. along with their properties and characteristics. O’Brien & Kenneth (1996) gave a conceptual model for educational supply chain management model considering educational institute as a service industry. After more than a decade in 2010 the model named Integrated Tertiary Educational Supply Chain (ITESCM) was eventually brought in by Habib [12]. This empirical model offers the potential investor as well as the current administrators of the universities of tertiary level a novel methodology for achieving their ultimate target of the creation of highly skilled graduates and novel
research outcomes for society’s betterment [13]. This study tries to identify the process of embedding the factors of mLearning into the ITESCM model.

II. EDUCATIONAL SUPPLY CHAIN MANAGEMENT MODEL

The educational supply chain model works within and around the entities of a university. External entities like employers of its graduates, secondary and higher secondary schools and colleges and internal entities like its current students and alumni, university staff in designing curricula [11][12][14]. The involvement of entities in the model assures the satisfaction of all stakeholders. Integrated Tertiary Educational Supply Chain Management (ITESCM) model was developed by Habib in 2010. This model can be considered as the first ever comprehensive model of academic supply chain management [12]. The model incorporates all the stakeholders of the tertiary educational institute, factors of the service industry, and maintains all three decision levels – Strategic level (SL), Planning level (PL), and Operating level (OL) [15]. Conducting appropriate teaching and research activities are the two most basic functionality of any tertiary academic institutions. Following table explains the four factors, analyzed in the reformed version of ITESCM model, for teaching and research activities.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Involvement in ITESCM model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programs Establishment (PE)</td>
<td>The initial responsibility to design and launch different programs to enrich, enhance, and evaluate the divergence in education and research for two aspects - development and assessment. Various innovative methods are attempted by the universities in terms of academic processes (teaching, learning environment), practical experience (hands-on, visual, visit, etc.), continuous advancement of IT facilities, industrial placements (internship, job) etc. to differentiate the establishment of programs.</td>
</tr>
<tr>
<td>Faculty Capabilities (FC)</td>
<td>Teaching, services and research are the main three typical criteria to evaluate the faculty members of universities. They facilitate the participation of students, model best practices, ensure the best environment of classroom’s atmosphere, enable effective communication etc. through curriculum development, instruction and research to yield the probabilities of reproduction.</td>
</tr>
<tr>
<td>University Culture (UC)</td>
<td>The culture of the organization depends on the administrator or management of the university, geographical location and social practices which also dictates the culture of the universities.</td>
</tr>
</tbody>
</table>

Table 1: Factors in ITESCM for HLI [16]

Integrating mLearning into the educational supply chain management, considering an educational institute as a service industry, would require the service industry basics using supply chain management.

Figure 1: Service Industry Basics using Supply Chain [17]

The factors of service industry - service providers, suppliers, consumers, customers, can be mapped with the factors of educational institute [11][12][14]. ITESCM model is a combined procedure of academic supply chain management for the universities consisting the educational management, educational supply chain, and research supply chain. These supply chains are independent chains with their own characteristics. Following table gives the mapping of service industry factors with the education and research supply chain.

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Education</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal suppliers: university self-funded research projects</td>
<td>Two major aspects for both education &amp; research</td>
<td>Four main events for all major aspects –</td>
</tr>
<tr>
<td>External Suppliers: organizations (private/public), government, etc.</td>
<td>- Programs Establishment (PE)</td>
<td>- Programs Establishment (PE)</td>
</tr>
<tr>
<td>Human Suppliers:</td>
<td>- Assessment</td>
<td>- University Culture (UC)</td>
</tr>
<tr>
<td>- high schools &amp; colleges supplying students</td>
<td>- Development</td>
<td>- Faculty Capabilities (FC)</td>
</tr>
<tr>
<td>- universities supplying faculty members</td>
<td></td>
<td>- Facilities (FA)</td>
</tr>
<tr>
<td>Non-human Suppliers:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- asset suppliers like, ICT facilities, furniture, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- educational materials like, instruction, stationary, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- fund suppliers like, self-funded, parents, organizational scholarships, grant, allowances, etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The developed countries prioritize higher education as it plays a major role in the economic development of a society. It provides advanced skills that command a premium in today’s workplace. This enables high productivity and improved quality of life [20][21]. The ITESCM model considers this and put society as the consumer of the outcome of the institute.

The research output is consumed by the organizations or donors (like INFORMS, ACM, IEEE, IEOM, etc.) who provides funding/scope/facilities to the research projects such as, scientific publications, scholars, results, thesis, PhD dissertation, etc.

The research results may be delivered in form of resolution to the existing problem, development and expansion of pure theory, scholarly publications, investigative projects, theoretical & applied research, dissertation, or any other research outcomes.

The society consuming the final outcomes – graduates & research.

### Table 2: Educational Institute as Service Industry using supply chain management [13][18][19][12]

<table>
<thead>
<tr>
<th>Customer</th>
<th>Research</th>
<th>Quality Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>The research output is consumed by the organizations or donors (like INFORMS, ACM, IEEE, IEOM, etc.) who provides funding/scope/facilities to the research projects such as, scientific publications, scholars, results, thesis, PhD dissertation, etc.</td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>The university recognizes, identifies and unifies the standards and the determinants of value addition in the university process to generate quality graduates. These graduates possess implicit and explicit knowledge, professional enrichment, proficiencies, aptitudes, expertise, morals, etc.</td>
<td></td>
</tr>
<tr>
<td>Quality Graduates</td>
<td>The research results may be delivered in form of resolution to the existing problem, development and expansion of pure theory, scholarly publications, investigative projects, theoretical &amp; applied research, dissertation, or any other research outcomes.</td>
<td></td>
</tr>
<tr>
<td>Research outcome</td>
<td>The research output is consumed by the organizations or donors (like INFORMS, ACM, IEEE, IEOM, etc.) who provides funding/scope/facilities to the research projects such as, scientific publications, scholars, results, thesis, PhD dissertation, etc.</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td>The society consuming the final outcomes – graduates &amp; research.</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Educational Institute as Service Industry using supply chain management [13][18][19][12]

The mapping of the unique attributes of the mLearning features with formal learning attributes (e.g. cohorts, campuses, courses, semesters, and assessments) along with its monitoring and evaluation regimes puts mLearning in a different characterization. Any changes in these features raises concerns in terms of sustainable deployment in large-scale, as the nature and the extent of such deployment may compromise or misplace the unique attributes of both formal learning and mLearning [22][23].

The aspects of mLearning environment can be described in three aspects – technological aspects, learning environment aspects, and educational institute aspects [10].

### Table 3: Aspects of embedding mLearning into HLI [10]

<table>
<thead>
<tr>
<th>Aspects Type</th>
<th>Factors to be considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological Aspects</td>
<td>Availability, Response times, Flexibility, Scalability, Usability, Maintainability, Functionality, Reliability, Performance &amp; Efficiency, Connectivity, User interface, Security.</td>
</tr>
<tr>
<td>Learner’s perspective</td>
<td>the optimization of student autonomy, collaboration, interaction, communication, learning attitudes, perceiving of knowledge, generating, implementing and sharing of ideas, experimentations, understandable, usefulness, and accessibility of learning materials, proper guideline for new learning environment, balanced assessments, etc.</td>
</tr>
<tr>
<td>Educator’s perspective</td>
<td>effective teaching methodologies irrespective of different abilities, sexes, or ethnic backgrounds, adaptiveness of introducing a new or changed learning environment, preparation of adequate and adaptable learning materials according to the learning environment demands, quality of the outcome of the students, fair assessment of the students’ abilities, multiple method of assessment, full control of the classroom, etc.</td>
</tr>
<tr>
<td>Education Institute aspects</td>
<td>Input: The student and research works/projects Process: Teachers, learning environment, methods, and resources, research practices and methodologies, etc. Output: Quality graduates and research outcomes.</td>
</tr>
</tbody>
</table>

Figure 2: ITESCM Model - Redesigned [19]

Educational supply chain management produces several competitive advantages with its customer driven vision. This is achieved by improving productivity of learning, boosting educators’ and learners’ satisfaction, producing quality graduates and research. Progressively, many final outcomes are recognizing the partnership with the employers in maintaining quality in their education supply chains with potential benefits.

The efficiency of the ITESCM model concept can be tested and observed in established academic organizations with different settings. The learning environment setting of ITESCM can be incorporated with additional learning environment, such as mLearning, which enhances the scope of this research to another strong aspect.

### III. Embedding mLearning into ITESCM

The mapping of the unique attributes of the mLearning features with formal learning attributes (e.g. cohorts, campuses, courses, semesters, and assessments) along with its monitoring and evaluation regimes puts mLearning in a different characterization. Any changes in these features raises concerns in terms of sustainable deployment in large-scale, as the nature and the extent of such deployment may compromise or misplace the unique attributes of both formal learning and mLearning [22][23].

The aspects of mLearning environment can be described in three aspects – technological aspects, learning environment aspects, and educational institute aspects [10].

Aspects Type

Technological Aspects

Learner’s perspective: the optimization of student autonomy, collaboration, interaction, communication, learning attitudes, perceiving of knowledge, generating, implementing and sharing of ideas, experimentations, understandable, usefulness, and accessibility of learning materials, proper guideline for new learning environment, balanced assessments, etc.

Educator’s perspective: effective teaching methodologies irrespective of different abilities, sexes, or ethnic backgrounds, adaptiveness of introducing a new or changed learning environment, preparation of adequate and adaptable learning materials according to the learning environment demands, quality of the outcome of the students, fair assessment of the students’ abilities, multiple method of assessment, full control of the classroom, etc.

Education Institute aspects

Input: The student and research works/projects
Process: Teachers, learning environment, methods, and resources, research practices and methodologies, etc.
Output: Quality graduates and research outcomes.
both Education and Research supply chain of ITESCM model [12].

A. TECHNOLOGICAL ASPECTS

The following two tables contain the mapping of technological aspects of mLearning [10] into ITESCM model [12] respectively for education and research. Each cell of the table contains the features, attributes, processes, measurement, functions, etc. that is required to deal with for the development and assessment for both education and research under the four factors of the university in three decision levels in ITESCM model with respect to technological aspects.

### Table 4: Technical Aspects mapped into ITESCM (Education)

<table>
<thead>
<tr>
<th>TECHNOLOGICAL ASPECTS</th>
<th>EDUCATION SUPPLIERS: ICT equipment (hardware/software), ICT trained faculty members, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DEVELOPMENT</td>
</tr>
<tr>
<td></td>
<td>ASSESSMENT</td>
</tr>
<tr>
<td><strong>SL.</strong></td>
<td>Adaptable for non-ICT based courses.</td>
</tr>
<tr>
<td>PE</td>
<td>Assessment policies using ICT system.</td>
</tr>
<tr>
<td><strong>PL.</strong></td>
<td>mLearning platform.</td>
</tr>
<tr>
<td></td>
<td>Assessment criteria using the platform.</td>
</tr>
<tr>
<td><strong>OL.</strong></td>
<td>Learning &amp; using of the platform.</td>
</tr>
<tr>
<td></td>
<td>Security &amp; validity using the platform.</td>
</tr>
<tr>
<td><strong>SL.</strong></td>
<td>Use ICT applications to Merge the mLearning concept for academic &amp; non-academic functions.</td>
</tr>
<tr>
<td>UC</td>
<td>Measure the level of adaptability and connectivity of the applications for all stakeholders.</td>
</tr>
<tr>
<td><strong>PL.</strong></td>
<td>Continuous update of applications with latest technology.</td>
</tr>
<tr>
<td></td>
<td>Adequate version of applications based on user satisfaction.</td>
</tr>
<tr>
<td><strong>OL.</strong></td>
<td>awareness with the latest update of applications.</td>
</tr>
<tr>
<td></td>
<td>Time &amp; effort to adapt the latest updates.</td>
</tr>
<tr>
<td><strong>SL.</strong></td>
<td>Irrespective of ICT background, teachers must be set to collect, use, prepare, and deliver learning materials.</td>
</tr>
<tr>
<td>PC</td>
<td>Assessment policies, criteria, and process to evaluate the students through mLearning applications.</td>
</tr>
<tr>
<td><strong>PL.</strong></td>
<td>Training, teaching methodologies, adaptability, connectivity, etc. with the mLearning applications.</td>
</tr>
<tr>
<td></td>
<td>Students' outcome of knowledge gathering and implementing using the system.</td>
</tr>
<tr>
<td><strong>OL.</strong></td>
<td>Preparing &amp; delivering learning materials based on mLearning applications.</td>
</tr>
<tr>
<td></td>
<td>Adequate assessment process to evaluate the understandability of the materials delivered.</td>
</tr>
<tr>
<td><strong>SL.</strong></td>
<td>ICT infrastructure, mLearning based applications, etc.</td>
</tr>
<tr>
<td>FA</td>
<td>Connectivity, reliability, privacy, etc.</td>
</tr>
<tr>
<td><strong>PL.</strong></td>
<td>Scope of the ICT infrastructure.</td>
</tr>
<tr>
<td></td>
<td>User satisfaction.</td>
</tr>
<tr>
<td><strong>OL.</strong></td>
<td>Implementation, maintenance, &amp; update.</td>
</tr>
<tr>
<td></td>
<td>Scalability, functionality, performance, etc.</td>
</tr>
</tbody>
</table>

Table 5: Technical Aspects mapped into ITESCM (Research)

### Table 5: Technical Aspects mapped into ITESCM (Research)

<table>
<thead>
<tr>
<th>TECHNOLOGICAL ASPECTS</th>
<th>RESEARCH SUPPLIERS: research portal, mobile device access to server, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DEVELOPMENT</td>
</tr>
<tr>
<td></td>
<td>ASSESSMENT</td>
</tr>
<tr>
<td><strong>SL.</strong></td>
<td>Adaptable for any research area.</td>
</tr>
<tr>
<td>PE</td>
<td>Assessment policies using ICT system.</td>
</tr>
<tr>
<td><strong>PL.</strong></td>
<td>mLearning platform.</td>
</tr>
<tr>
<td></td>
<td>Assessment criteria using the platform.</td>
</tr>
<tr>
<td><strong>OL.</strong></td>
<td>Learning &amp; using of the platform.</td>
</tr>
<tr>
<td></td>
<td>Security &amp; validity using the platform.</td>
</tr>
<tr>
<td><strong>SL.</strong></td>
<td>Use ICT applications to Merge the mLearning concept for all research activities.</td>
</tr>
<tr>
<td>UC</td>
<td>Measure the level of adaptability and connectivity of the applications for all stakeholders.</td>
</tr>
<tr>
<td><strong>PL.</strong></td>
<td>Continuous update of applications with latest technology.</td>
</tr>
<tr>
<td></td>
<td>Adequate version of applications based on user satisfaction.</td>
</tr>
<tr>
<td><strong>OL.</strong></td>
<td>awareness with the latest update of applications.</td>
</tr>
<tr>
<td></td>
<td>Time &amp; effort to adapt the latest updates.</td>
</tr>
<tr>
<td><strong>SL.</strong></td>
<td>Irrespective of ICT background, researchers must be set to collect, use, prepare, and deliver research materials.</td>
</tr>
<tr>
<td>PC</td>
<td>Assessment policies, criteria, and process to evaluate the research outcome through mLearning applications.</td>
</tr>
<tr>
<td><strong>PL.</strong></td>
<td>Training, research methodologies, adaptability, connectivity, etc.</td>
</tr>
<tr>
<td></td>
<td>research outcome for knowledge building sharing and implementing through the ICT system.</td>
</tr>
<tr>
<td><strong>OL.</strong></td>
<td>Preparing, practicing, implementing, &amp; delivering research materials based on mLearning applications.</td>
</tr>
<tr>
<td></td>
<td>Adequate assessment process to evaluate the usefulness of the research materials delivered.</td>
</tr>
<tr>
<td><strong>SL.</strong></td>
<td>ICT infrastructure, mLearning based applications, etc.</td>
</tr>
<tr>
<td>FA</td>
<td>Connectivity, reliability, privacy, etc.</td>
</tr>
<tr>
<td><strong>PL.</strong></td>
<td>Scope of the ICT infrastructure.</td>
</tr>
<tr>
<td></td>
<td>User satisfaction.</td>
</tr>
<tr>
<td><strong>OL.</strong></td>
<td>Implementation, maintenance, &amp; update.</td>
</tr>
<tr>
<td></td>
<td>Scalability, functionality, performance, etc.</td>
</tr>
</tbody>
</table>

B. Learning Environment Aspects

The following two tables contain the mapping of learning environment aspects of mLearning [10] into ITESCM model [12] respectively for education and research. Each cell of the table contains the features, attributes, processes, measurement, functions, etc. that is required to deal with for the development and assessment for both education and research under the four factors of the university in three decision levels in ITESCM model with respect to learning environment aspects.
### Table 6: Learning Environment Aspects mapped into ITESCM (Education)

<table>
<thead>
<tr>
<th>EDUCATION SUPPLIERS:</th>
<th>LEARNING ENVIRONMENT ASPECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>mLearning based learning materials, teaching methodologies, trained faculty members, etc.</td>
<td>DEVELOPMENT</td>
</tr>
<tr>
<td>SL</td>
<td>Computing the outcome for curriculum with integrated learning environment.</td>
</tr>
<tr>
<td>PL</td>
<td>Define &amp; design mLearning component of each course.</td>
</tr>
<tr>
<td>OL</td>
<td>Partial or full implementation of mLearning environment for selective or all courses.</td>
</tr>
<tr>
<td>UC</td>
<td>Robust use of the mLearning concept for academic &amp; non-academic functions.</td>
</tr>
<tr>
<td>PL</td>
<td>Continuously include new academic &amp; non-academic areas into mLearning environment.</td>
</tr>
<tr>
<td>OL</td>
<td>Proper awareness and implementation for all stakeholders with the latest inclusion.</td>
</tr>
<tr>
<td>SL</td>
<td>Irrespective of ICT background, teachers must be set to collect, use, prepare, and deliver learning materials.</td>
</tr>
<tr>
<td>PL</td>
<td>Training, teaching methodologies, learning materials, flexibility, connectivity, etc.</td>
</tr>
<tr>
<td>OL</td>
<td>Preparing &amp; delivering learning materials based on mLearning applications.</td>
</tr>
<tr>
<td>SL</td>
<td>ICT infrastructure, mLearning based applications, facilities within and outside classrooms, etc.</td>
</tr>
<tr>
<td>PL</td>
<td>Scope of the ICT infrastructure to strengthen the knowledge building.</td>
</tr>
<tr>
<td>OL</td>
<td>Implementation, maintenance, &amp; update.</td>
</tr>
</tbody>
</table>

### Table 7: Learning Environment Aspects mapped into ITESCM (Research)

<table>
<thead>
<tr>
<th>RESEARCH SUPPLIERS:</th>
<th>LEARNING ENVIRONMENT ASPECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>research portal, mobile device access to server, connectivity with other researchers through mobile devices, etc.</td>
<td>DEVELOPMENT</td>
</tr>
<tr>
<td>SL</td>
<td>Partially or full conduct of research project using mLearning environment.</td>
</tr>
<tr>
<td>PL</td>
<td>Parameters for research area, materials, components, etc.</td>
</tr>
<tr>
<td>OL</td>
<td>Learning &amp; using of the platform under standard research guidelines.</td>
</tr>
<tr>
<td>UC</td>
<td>Multiple use criteria with required resources through the mLearning concept for all research activities.</td>
</tr>
<tr>
<td>PL</td>
<td>Regular inclusion of new and latest methodologies using mLearning.</td>
</tr>
<tr>
<td>OL</td>
<td>Usable, available, and acceptable to all the stakeholders with proper responsiveness.</td>
</tr>
<tr>
<td>SL</td>
<td>Irrespective of ICT background, researchers must be set to collect, use, prepare, and deliver research materials.</td>
</tr>
<tr>
<td>PL</td>
<td>Training, relevant research methodologies, adaptability, acceptability, connectivity, etc.</td>
</tr>
<tr>
<td>OL</td>
<td>Preparing, practicing, implementing, &amp; delivering research materials based on mLearning process.</td>
</tr>
<tr>
<td>SL</td>
<td>ICT infrastructure, mLearning based applications, etc. with compliance to the need of the research process.</td>
</tr>
<tr>
<td>PL</td>
<td>Scope of the ICT infrastructure to support the research process.</td>
</tr>
<tr>
<td>OL</td>
<td>Implementation, maintenance, &amp; update.</td>
</tr>
</tbody>
</table>

Table 6: Learning Environment Aspects mapped into ITESCM (Education)

Table 7: Learning Environment Aspects mapped into ITESCM (Research)
C. EDUCATIONAL INSTITUTE ASPECTS

The educational institute aspects are identified through the input, process, and output of the institute itself. The input in terms of mLearning aspects are the suppliers of education and research for technological and learning environment aspects. The process are the development and assessment of education and research in terms of four factors – Program Establishment (PE), University Culture (UC), Faculty Capabilities (FC), Facilities (FA) of the university, each under the three decision levels – Strategic (SL), Planning (PL), Operation (OL). Finally, the output is the graduates and research outcome into the society.

The technological aspects and the learning environment aspects in the previous four tables must be combined to map the factors of educational institute aspects. The following two tables contain the mapping of educational institute aspects of mLearning into ITESCM model [12] respectively for education and research. Each cell of the table contains the features, attributes, processes, measurement, functions, etc. that is required to deal with for the development and assessment for both education and research under the four factors of the university in three decision levels in ITESCM model with respect to educational institute aspects, where it is the combination of both technological and learning environment aspects of mLearning in terms of input, process, and output.

<table>
<thead>
<tr>
<th>EDUCATIONAL INSTITUTION ASPECTS</th>
<th>ITESCM MAPPED EDUCATIONAL INSTITUTE ASPECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EDUCATION SUPPLIERS:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ICT equipment (hardware/software), ICT trained faculty members, mLearning based learning materials, teaching methodologies, etc.</strong></td>
<td><strong>INPUT</strong></td>
</tr>
<tr>
<td><strong>DEVELOPMENT</strong></td>
<td><strong>ASSESSMENT</strong></td>
</tr>
<tr>
<td><strong>SL</strong> Computing the outcome for curriculum with integrated learning environment including non-ICT based courses.</td>
<td>Integrated assessment policies to achieve the outcome of the curriculum using ICT system.</td>
</tr>
<tr>
<td><strong>PL</strong> Define &amp; design mLearning component of each course using mLearning platform.</td>
<td>Assessment criteria for each component within the platform.</td>
</tr>
<tr>
<td><strong>OL</strong> Partial or full implementation of mLearning environment for selective or all courses using the mLearning platform.</td>
<td>Assessment criteria, Security &amp; validity of the system fulfills the expectation of the student outcome.</td>
</tr>
<tr>
<td><strong>UC</strong> Robust use of the mLearning concept merging through ICT applications for academic &amp; non-academic functions.</td>
<td>Level of adaptability and satisfaction of the use of mLearning and its application for all stakeholders.</td>
</tr>
<tr>
<td><strong>PROCESS</strong></td>
<td><strong>OUTPUT</strong></td>
</tr>
<tr>
<td><strong>PL</strong> Continuously include new academic &amp; non-academic areas into mLearning environment along with the update of applications with latest technologies.</td>
<td>The inclusion must be adequate, rational, appropriate with user satisfaction towards the updated version of the applications.</td>
</tr>
<tr>
<td><strong>OL</strong> Proper awareness and implementation for all stakeholders with the latest inclusion.</td>
<td>Time &amp; effort to adapt the latest inclusion.</td>
</tr>
<tr>
<td><strong>SL</strong> Irrespective of ICT background, teachers must be set to collect, use, prepare, and deliver learning materials.</td>
<td>Compliance of a fair assessment policies, criteria, and process to evaluate the students with integrated mLearning components.</td>
</tr>
<tr>
<td><strong>FC</strong> Training, teaching methodologies, learning materials, flexibility, connectivity, etc.</td>
<td>Students’ outcome of knowledge gathering and implementing using the system.</td>
</tr>
<tr>
<td><strong>OL</strong> Preparing &amp; delivering learning materials based on the mLearning applications.</td>
<td>Adequate assessment process to evaluate the understandability of the materials delivered.</td>
</tr>
<tr>
<td><strong>SL</strong> ICT infrastructure, mLearning based applications, facilities within and outside classrooms, etc.</td>
<td>Connectivity, reliability, privacy, services, troubleshoot, etc.</td>
</tr>
<tr>
<td><strong>FA</strong> Scope of the ICT infrastructure to strengthen the knowledge building.</td>
<td>User satisfaction, students’ output.</td>
</tr>
<tr>
<td><strong>OL</strong> Implementation, maintenance, &amp; update.</td>
<td>Scalability, functionality, performance, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GRADUATES:</th>
<th>quality graduates equipped with latest technologies displaying implicit and explicit knowledge, proficiencies, aptitudes, expertise, morals, professional enrichment, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUCATION CUSTOMERS:</td>
<td>graduates, family members, employers of government and private organizations.</td>
</tr>
</tbody>
</table>

**SOCIETY**

Table 9: Educational Institute Aspects mapped into ITESCM (Education)

<table>
<thead>
<tr>
<th>EDUCATIONAL INSTITUTION ASPECTS</th>
<th>ITESCM MAPPED EDUCATIONAL INSTITUTION ASPECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESEARCH SUPPLIERS:</strong></td>
<td></td>
</tr>
<tr>
<td>research portal, mobile device access to server, connectivity with other researchers through mobile devices, etc.</td>
<td><strong>INPUT</strong></td>
</tr>
</tbody>
</table>
mLearning integrated ITESCM model would give us a better understanding of an integrated learning environment. This would also help to formulate the requirements, roadmap or guideline to anticipate the impact on the educational outcome using this model. The study will try to evaluate and reduce the risks by increasing the understanding this integrated learning environment under the integrated ESCM model parameters so that the drawbacks can be overcome. This would also be helpful in incorporating and measuring the possibilities of many additional learners who endure their thrust for gaining knowledge even if they are unable to attain the knowledge with the traditional learning environment settings.

The inclusion of mLearning into the educational supply chain management (ESCM) creates multiple hierarchical decision-making phases as the stakeholders of the ESCM belongs to different hierarchical positions in terms of decision-making within the SCM. The next phase of this study is to collect data from different stakeholder based on the two tables from educational institute aspects, as they are the combination of other two aspects with respect to the institutional input, process, and output structure. These collected data from the stakeholders will also require an organized methodology towards a considerate process to identify the integration criteria, assessment criteria, and most importantly to initiate and sustain the new integrated model for all relevant stakeholders of an academic institution.

### REFERENCES


Securities on Blockchain in Order to Engage with Blockchain Technologies to Build a Comprehensive, Apparent and Liable Digital Economy World Wide

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Paper ID: ICBM-19-0697

Abstract – This paper analysis and describe the blockchain technology and its operation on various system and securities in business transactions. In addition, this article primarily offers a advanced explanation of this new innovation reachable to everyone form various field, and descriptive outlines of current blockchain which indicates the safeties delivered and actuality transacted. It also studies the constrictions of Uniform Commercial Code and blockchain securities as “uncertificated securities”. Furthermore, it describes the Uniform Commercial Code include blockchain safeties by way of “uncertificated securities” for better understanding of blockchain trades. Moreover, Blockchain technologies grip the key to construction a comprehensive international digital economy that is audit-able safe and evidently accountable to the world wide’s residents. Besides, the regime needs reestablish trust in modern financial cooperation; blockchains lead a significant part in establishment and advantages of both parties. This article objective is to identify the securities in blockchain, Distributed ledger and crypto currency for local and international trade.

Keywords – international trade; trade securities, blockchain & its securities, distributed ledger; tangle; crypto currency; Bitcoin; tools; invention; global collaboration; trade; financial system

INTRODUCTION

New invention of technology and modernization has a practice of reforming the economic trade quicker than the trade securces which can’t expressively adjust [1]. As instance, though individual data has been shared over the electronic media by the electronic media section and rules. The blockchain digital ledger securities’ accepting of developing tools gaps is one of the issues to initiate the blockchain digital ledger [2]. Impairing that development the blockchain technology introduce Bitcoin, is a real trouble making machinery with the potential to essentially change the way our commercial systems.

CHALLENGE

The 19 countries and adjoin EU (G20) Conference, the German presidency noted that “the extent of modern digital technology in commercial and community needs talk on an globally decided monitoring framework” and assured trade securities of national and international business [3]. Plan for Innovative Development, the approach implemented significant obtainable by technical innovations in worldwide economic enhancement [7] in addition, shaping the simple moves are able to help various growths satisfying this potential needs:

1) Innovative globally decided outlines resolve the essential to upkeep the advantageous extent of modern technologies; and

2) Assessing similar tools can aid and progress the current trade security.

Blockchain is one of the leading technologies for international trade. Angela and Chancellor of the Federal Republic of Germany, [4] stated that Blockchains are collective (“distributed” or “decentralized”) digital ledgers which use cryptographic algorithms to prove the formation and transmission of digitally signified properties over a peer-to-peer network [5]. They drive via an advanced combination of distributed consensus procedures, cryptography, and innate financial inducements based on game theory [5].

PROPOSAL

The global trade communities, the utmost significant forum for financial and economical trade section include the rules and regulation for better work process worldwide business transaction [6]. The total tactic is stated in the G20 Outline on advanced Development [7] and it associated New Manufacturing rebellion act plan. Moreover, the ideologies, purposes, and movements introduce digital ledger in numerous tangible steps to provision public and private sector blockchain innovations and establish internationally.

1. To demonstrate global economic management into transparent and accountable by migrating to blockchain-based systems.
2. To support the private sector blockchain development by introducing blockchain use cases 17, 18. Last but not least the digital identity and privacy management system.

3. To introduce blockchain of cryptocurrencies and other blockchain technologies.

Through blockchain, distributed ledger introduces cryptocurrency growing up dramatically. The modern rules for cryptocurrency in some part are very complicated in order to solve issues. Currently G20 holding the leading position for the blockchain transaction rules and regulation for international trades [8]. However, overcome all these issues blockchain could be the reliable and trustworthy transaction in worldwide by digital ledger security and its proper action plan in every transaction.

**BLOCKCHAIN MODEL**

In this section we demonstrate how G20 blockchain trading can be implemented in Asian countries. Many variables are involved in this blockchain trading model as mentioned in figure 1.

**APPLICATION**

Even though there are many technologies arise current business industries but blockchain technology are not new anymore. The blockchain technology is exclusive, collective and employed by blockchain that is groundbreaking. The fundamental of Blockchain is work through disseminated ledger, encompassed of digital records of dealings, available and reliable by all members’ equal procedure [11]. A procedure for this purpose is a set of guidelines leading the arrangement of messages that are traded among the members [12]. Beside that a blockchain can assist as the “trust” mediator in a transaction, thereby avoid number of mediators and letting true peer-to-peer transfer of assets, the profits of which include reduced operation costs, reduced operation time, and enlarged privacy and safety. Furthermore, it can adapt in Asian countries to enhance the blockchain and introduce digital currency for national and international transaction [9].

**BLOCKCHAIN**

Here are 2 key structures that make blockchain such a groundbreaking meaning of footage the flow of properties: (1) distributed ledgers and (2) cryptography.

**A. Disseminated Ledgers**

Our present commercial system functions through www (internet) of combined ledgers: banks, which are funded fees for authorizing the properties and responsibilities of the parties to a deal, result of the real initiative of properties to settle down a deal. This structure well farmed in Medici family accosted the banking bazaar during the beginning the banking sector. [3]. The Medicis formed a central ledger of the society’s assets
and responsibilities, which allowed two parties without any reason to believe one another to involve in commerce [3]. Because the disseminated ledger was reliable by the community, such central ledger provided an agreement among unknown parties to a transaction that each had the target to fulfill its end of the bargain. The disseminated became the vital central intercessor in all dealings and earn fees for authorizing holdings, settle down trades, and bring up-to-date the central ledger. Now days Banks, transfer agents, escrow agents, and other financial intermediaries serve this purpose. Distributed ledgers change the balance of power from the existing system and theoretically remove the need for a centralized intermediate by making public each deal such that all parties within the system may confirm a transaction [2].

B. Cryptography

In the 21 century we can’t imagine a world without Internet, the significance of which helps to generate a disseminated ledger that able to work on the scope required for the global business markets. Thereby utilize the Internet; a blockchain’s distributed ledger liable for billions of dollars’ worth of transactions must be safe and largely trustworthy [10]. This is where cryptography introduces itself: to allow individuals to depend on blockchain’s distributed ledgers as the dominant faithful agent at the speed and on the scope required by our economy [13]. Blockchains utilize cryptography to confirm transactions, process payments, and offer security for individual participants that upholds faith within the system [14]. Blockchains usually depend on two cryptographic structures: digital signatures and cryptographic hash functions. The blend of these cryptographic tools with distributed ledgers is the modern progression that has permitted Bitcoin’s blockchain to assist as the model for transforming our financial systems [9].

I. BLOCKCHAIN SECURITIES AND THE UCC

The current Uniform Commercial Code (UCC) covers legal rules that describe the rights and responsibilities of the parties in joining with many aspects of commercial transactions and venture safeties. UCC has at present been interpreted to apply to a transfer of Bitcoins and other cryptocurrencies on blockchain [15].

A. Identification Of Securities Holders within A Blockchain

UCC already been construed to apply to safeties on blockchains. UCC section defines a “security” as an obligation of an issuer or a share, participation, or other interest in an issuer or in property or an enterprise of an issuer. Under the centralized safeties laws, intermediaries who are holding securities for others must advancing substitution declarations to the persons who are advantageous owners under the safeties laws [16].

B. Transfer Of Securities On A Blockchain

Pursuant to UCC section an uncertificated safety is transferred by “delivery” to the purchaser.67 For this drive, transfer occurs when: (i) The issuer records the buyer as the listed owner, upon unique issue or registering of transfer; or (ii) Added individual, other than safeties intermediate, either becomes the listed owner of the uncertificated safety on behalf of the buyer or, having earlier converted the listed owner, admits that it holds for the buyer [17]. Thus, UCC clues meaning of “delivery” protections the acts essential for the transfer of a blockchain safety.

C. Settling Time For Securities Trade On Blockchain

In general, expenditure of a trade of safeties on a blockchain would be much faster than a trade of securities in the current exchanges and securities markets—minutes instead of days. Ironically, this increase in speed might weakness an owner whose safeties are listed on a blockchain [18]. With a conventional certificated security, a robber would take some days to resell the stolen securities, whereas a robber of a blockchain security could in theory resell such safety in minutes, not giving the listed holder the time to get the shield of UCC section [5].

D. Issues For Blockchain Securities Under The UCC

There are particular left over matters for the issuer blockchain securities under UCC clues. In UCC requires the issuer of a safety to list a transfer of its safety if the stated circumstances are fulfilled. In the Subsection of UCC provides that the issuer is responsible for failing to register a transferal when it is obliged to do so [19]. Would the issuer be so responsible if a registering of transmission were not made on the securities blockchain due to an organization defect, or hacking, or other cause beyond the issuer’s control? The answer to that question should be no, because theoretically the issuer would not have “failed” to list the transfer, the handover not existence made due to the issuer’s advertising or inadvertent act or error [20].

CONCLUSION

Only safeties and trust are requiring enhancing the blockchain digital ledger. UCC will hold the market ground permanently by overcome all the issues and implementing the UCC rules and regulation worldwide. Beside some related task need to be followed by the UCC such as; parties’ satisfice and their priorities on every trade. In addition, through Internet UCC can handle billions of trade safe and sound mood by having peer to peer interexchange of the demand and trade. The
decentralized is a cheap and helpful for immediate transaction without third party hustle and notification for lengthy process. This modification and adaptation of blockchain transaction is a ultimate demand of user from the globe. The disseminated will be the most significant role for Asian market for international trading.

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Low-Carbon Energy Technologies: Potentials of Solar and Nuclear Energy Sources for Sustainable Economic Development in Bangladesh

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Abstract – Electricity shortage has become a major challenge to continued economic growth in Bangladesh. The country is growing in terms of GDP growth at a rate of 7% a year. Bangladesh is expected to move towards 23rd position globally by 2050 from its position 31 in 2014, in terms of GDP at purchasing power parity (PPP). The demand for electricity is forecasted to be 61,164 MW within the same period. Currently, electricity generation in Bangladesh is highly dependent on fossil fuels, nearly 59% is produced from natural gas followed by furnace oil, diesel and coal, while only 3% from renewables. Electricity generation is the largest single source of GHG (greenhouse gas) emissions in Bangladesh, and thus finding alternative energy source has become imperative for the country. Solar and nuclear energy sources have the potentials to be utilized for low-carbon energy sector and thus for a sustainable economic development in Bangladesh. Barriers to solar and nuclear energy will be reduced significantly in coming years with technological advancement. However, energy policies need to be revised to facilitate low-carbon energy technologies. Besides, more international collaboration is highly required not only to import new technologies but also to enhance the capacity of research and development (R&D) as well as overall adoption of the technologies.

Keywords – Economic growth, electricity shortage, fossil fuel, greenhouse gas, low-carbon energy, renewable energy, nuclear energy, Bangladesh

I. INTRODUCTION

Electricity is one of the main driving forces for any economy and often per capita electricity consumption is an important development indicator of a country. It is obvious that the demand for electricity will continue to increase with economic growth such as increase in gross domestic product (GDP) or per capita income. The gap between demand and supply of electricity will increase with economic development if increase in electricity generation is not planned proactively.

The population of Bangladesh is expected to increase to 202 million by 2050 from 166 million in 2018 [21]. Concurrently, Bangladesh is also growing in terms of GDP at a rate of 7% a year. To sustain the current economic growth, increased attention needs to be paid to provide energy supply, especially electricity supply. Hawksworth & Chan [7] showed in their report “The world in 2050: Will the shift in global economic power continue?” that Bangladesh will move towards 23rd position by 2050 from its position 31 in 2014, in terms of GDP at purchasing power parity (PPP), followed by Malaysia, Spain, Argentina, Netherlands [7]. From this projection, future electricity demand will rise significantly due to increased economic activities including urbanization, and expansion of manufacturing and service sectors. Thus, we should diversify our electricity generation technologies using renewables and nuclear energy resources to meet the excess demand. One of the major advantages of these resources is that they emit significantly low greenhouse gases (GHGs) compared to currently used fossil fuels in the generation of electricity. Although coal represents the largest share in electricity generation globally followed by natural gas, hydro and nuclear energy, it is expected that low-carbon energy technologies will dominate the sector [1].

II. CURRENT ELECTRICITY GENERATION PRACTICES IN BANGLADESH

Electricity consumption in Bangladesh is rising by 9.6% each year [25]. Currently, fossil fuels are playing the vital role in the generation of electricity in Bangladesh. Natural Gas is the largest source of the country’s commercial electricity generation (nearly 59%) followed by furnace oil, diesel and coal (Fig. 1). It is evident that the country’s reserve of gas will be depleting fast if no new gas field is discovered. The present reserve is not sufficient to meet our upcoming demand. This means, we will have to import natural gas from abroad. Impact of importing natural gas will incur additional pressure on foreign currency reserve and increasing consumption of natural gas will significantly increase the emissions of GHGs. Thus, we need to reduce dependency on this fossil fuel, introducing alternative energy sources like renewables and nuclear energy in the generation of electricity. Bangladesh has no
significant oil reserve and depends on imported crude and refined petroleum products for transportation, industrial heating and small-scale power generation. A large amount of revenue budget is spent every year for purchasing imported petroleum products.

Coal energy is the most abundant and economical energy sources not only in Bangladesh but also all over the world. Currently, coal accounts for 39.8% of the world's electricity generation. In Bangladesh, coal represents 3.25% of the actual generated electricity. Coal reserve is estimated to be 3300 million metric ton which is equivalent to 45–50 trillion cubic feet (CFT) of natural gas [10]. However, extensive use of coal in electricity generation will significantly increase GHG emissions.

Non-renewable fossil fuels cannot be the ultimate solution for sustainable power sector due to their various adverse impacts on our environment. We need to move towards cleaner electricity generation technologies using renewables such as wind, solar, hydro, geothermal etc. or low-carbon energy resources such as nuclear fuels. Currently, renewable energy sources have a very low share of the total electricity generation in Bangladesh, which is less than 3% [11]. The government of Bangladesh has developed renewable energy policy in 2008 and has taken a number of initiatives to increase the use of renewable and also encouraging public private partnership to increase investment in renewable electricity generation [17].

The 230 MW hydropower plant located at Karnaphuli currently provides the major share of total renewable energy in Bangladesh. Bangladesh Power Development Board (BPDB) identified two other sites at Sangu (140 MW) and Matamuhuri (75 MW) for large hydropower plants [25], however the potentials for large-scale hydropower plant installation in Bangladesh is limited.

Wind Energy has also a limited potential in Bangladesh. The long-term wind flow of Bangladesh (specifically in islands and the southern coastal belt of the country) indicate that the average wind speed remains between 3 to 4.5 m/s for the months of March to September and 1.7 to 2.3 m/s for remaining period of the year. There is an opportunity to use wind energy in island and coastal areas for the application of wind mills to generate electricity. But during the summer and monsoon seasons, (March to October) there can be very low-pressure areas and storm with wind speeds of 200 to 300 km/h. Therefore, wind turbines should be strong enough to withstand these high wind speeds, which will increase the initial cost of wind turbine installation [16].

III. PROSPECTS OF SOLAR AND NUCLEAR ENERGY TECHNOLOGIES

Solar energy is one of most promising renewable energy sources in the world. It has the highest potential to gain energy compared to other renewables. Solar energy is expected to account for 35% of power-generating capacity additions worldwide, triggering investments in the order of $3.7 trillion between 2015 and 2040 [19]. The long-term average sunshine data of Bangladesh indicates that the period of bright (i.e. more than 2 kWh/m²/day intensity) sunshine hour in the coastal region varies from 3 to 11 hours daily. The global radiation varies from 3.8 kWh/m²/day to 6.4 kWh/m²/day. These data indicate that there is a good prospect for solar thermal and photovoltaic application in Bangladesh [16]. Although solar energy harvesting at commercial scale is a fast-growing technology around the world, this technology possesses some challenges, which might be solved to take full advantage of solar power generation. Apart from low efficiency of solar energy, electricity produced from solar system varies during the day, thus challenges arise both technical and economic. At most sites, integration of small shares of solar power requires adaptation of the electricity grid. As the shares increase, the need for adaptation increases and the integration costs may rise.

Electricity production from renewables alone will not be sufficient to meet the increased electricity demand for Bangladesh in the future. Nuclear power could be a potential alternative solution for electricity generation. Nuclear power is an intense source of energy. It is the largest source of low-carbon electricity in the developed world and the second largest, after hydroelectricity [9]. The efficiency of nuclear power is well-documented. As for example, 1 kg U-235 can produce more than 24 million kWh of electricity [14], while a combustive or fission-based process yields 8 kWh of heat via conversion from 1 kg coal and the same amount of mineral oil results in 12 kWh [1]. Besides, the transport infrastructure needed for nuclear fuel is also significantly small. 1,000 MWe (Mega Watt Electricity) nuclear power capacity needs only about 30–35 tons of enriched fuel per annum, as against 3.5–5.0 million tons of coal needed for a coal fired thermal power plant [2].

Bangladesh government has already started the construction of its first nuclear power plant (NPP) in 2017, with two units of 1200 MW each, at Rooppur, Pabna though an Inter-Governmental Agreement (IGA) with Russia [22]. Rooppur NPP is expected to be commissioned by 2023 with a life expectancy of 60 years. As nuclear power plant has nearly zero carbon emission, it will help building low carbon society.
Nuclear power presents numerous advantages; however, the main drawbacks of nuclear energy lies on i) safety and security issues in terms of technical knowhow, natural disasters and terror attacks, and ii) disposal and management of nuclear wastes. In this regard, we need to have solid plan to develop our own human resources and to adopt state of the art technologies in eliminating any risk associated with nuclear power and develop nuclear waste management processes.

The development and deployment of nuclear reactors are influenced by many factors. Reviewing published reports and literature, this article perhaps identified six major factors namely: cost-effectiveness, safety, security and non-proliferation features, grid appropriateness, commercialization roadmap (including constructability and licensability), and management of the fuel cycle. Nuclear reactor designs are usually categorized by “generation”; that is, Generation I, II, III, III+, and IV. The key attributes characterizing the development and deployment of nuclear power reactors illuminate the essential differences between the various generations of reactors. Gen II reactors are the first commercially available reactors type. Gen III+ reactor designs are an evolutionary development of Gen III reactors, offering significant improvements in safety over Gen III reactor designs certified in the 1990s. Gen IV nuclear reactor design uses a variety of methods to enhance safety, to minimize radioactive waste by recycling and using waste in the generation process, and to eliminate proliferation of weapons grade materials. The aim is to have a reactor, which produces very little radioactive waste with much longer lifespan and closed fuel cycle. It is expected that the Gen IV designs will be certified for commercial use by 2030, which will make disruptive change in nuclear power sector. Figure 3 shows evolution of different nuclear reactor types with their advantages in commercialization.

IV. ELECTRICITY DEMAND PROJECTION OF BANGLADESH

There is a direct correlation of the consumption of electricity with the GDP growth. It’s already mentioned that Bangladesh’s average GDP growth rate is projected to be 7%. According to the power system master plan (PSMP) 2010 [18], electricity demand is forecasted to 66,164 MW by 2050 based on 7% GDP growth rate. Considering decarbonization of the electricity generation system, alternatives of fossil fuels such as renewables and nuclear energy will have to be utilized to fulfill the required demand of the nation. Although ensuring the supply of this forecasted demand is challenging, however continuing reforms, restructuring and a focus on energy conservation could led to achieve this challenging target. One of the major barriers to meet this optimistic target is the shortage of funds to be invested in the development of infrastructures. Necessary attention need to be given to formulate appropriate policies to encourage private sector participation in energy sector development program to meet the shortage of fund. More recently, public private partnership (PPP) has been fueled with top priority to attract private investment in energy sector [16],[17].

V. ELECTRICITY COST USING DIFFERENT TECHNOLOGIES

Nuclear power plants are expensive to build, but relatively cheap to run. In many places, nuclear energy is competitive with fossil fuels as a means of electricity generation. The levelized cost of electricity (LCOE) is a measure to compare different technologies of electricity generation on a comparable basis. At 3% discount rate, nuclear was substantially cheaper than the alternatives, at 7% it was comparable with coal and still cheaper than gas, and at 10% it was comparable with both (Fig. 2) [1].

Besides, fossil fuel-based electricity production will be further unattractive due to their extremely high carbon emission and price volatility of the primary energy resources. Nuclear power is environmentally benign and the life cycle GHG emissions of nuclear power are comparable to that of wind and solar photovoltaic power. The life cycle emissions (from mining of ore to waste disposal) of nuclear power are very low, between 2.5 and 5.7 gCO$_2$eq/kWh as against 206 to 357 gCO$_2$eq/kWh in case for coal and 106 to 188 gCO$_2$eq/kWh for gas technologies [26].

Unit production cost of solar electricity is high compared to fossil fuel generated electricity, however, if carbon taxes and costs over the lifespan of energy projects are considered, both solar and nuclear energy technologies can be much less expensive. Table 1 presents comparative cost and emission assessment of different energy technologies.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Solar</th>
<th>Wind</th>
<th>Nuclear</th>
<th>Gas</th>
<th>Coal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital cost ($/kW)</td>
<td>2,000</td>
<td>1,200-1,700</td>
<td>4,100</td>
<td>1,000</td>
<td>2,125</td>
</tr>
<tr>
<td>Electricity cost ($/MWh)</td>
<td>43-53</td>
<td>30-60</td>
<td>29-82</td>
<td>42-78</td>
<td>&gt;60</td>
</tr>
<tr>
<td>CO$_2$ emission (KgCO$_2$/MWh)</td>
<td>30-90</td>
<td>6-124</td>
<td>2-130</td>
<td>270-910</td>
<td>640-1630</td>
</tr>
<tr>
<td>O &amp; M cost ($/MWh)</td>
<td>5.71</td>
<td>8.63</td>
<td>7.04</td>
<td>1.32</td>
<td>1.51</td>
</tr>
</tbody>
</table>

Fig. 2. Levelized energy costs for new power plants

TABLE I

COMPARISON OF DIFFERENT ENERGY TECHNOLOGIES [1],[20],[24]
VI. FUTURE ENERGY POLICY OF BANGLADESH

Future energy policy should focus more on carbon free energy technologies due to global & local concern regarding climate change. Among all the clean energy technologies, only renewable and nuclear technologies could be effectively utilized as the potential clean/low-carbon sources of electricity generations. The major highlights of the future energy policy, especially policy related to electricity generation, should have the following specific objectives:

i) reduce dependency on fossil fuels
ii) ensure lowest unit cost of electricity production, especially using solar & nuclear energy sources
iii) secure clean and efficient energy technologies
iv) propose the forms of restructuring and reform of the energy sector enhancing the capacity of manpower and reduced dependency on other countries or external manpower
v) create a comprehensive legal and regulatory system
vi) conduct effective profile-raising activities to generate greater awareness and acceptance

A. Future of Solar Energy in Bangladesh and Development

Bangladesh is blessed to have a huge amount of solar energy due to its geographical location, however the technology is yet to be utilized for commercial scale power production with high potential. Major drawbacks include i) high initial investment, ii) long payback period, iii) availability of sufficient land for infrastructure construction and iv) inadequate purchase policy. Policy supports from the government could intensify the installation of commercial solar power station.

B. Suggested Reform and Restructuring of Solar Energy Applications in Bangladesh

Global renewable energy markets are driven by legal compulsory means to promote renewable energy development, namely a) compulsory quota policy, b) compulsory purchase policy and c) voluntary purchase policy. In terms of renewable energy development speed, the compulsory purchase policy is the most effective measure. The policy will have a mandate that electricity users, including grid companies, electricity retail companies, and large end-users participating in direct power purchasing a percentage quota of their electricity that needs to come from renewable energy.

Another common global practice is to provide economic incentives to promote solar electricity generation. In this regard, following policies could be adopted:

i) Subsidize investors, producers and users of renewable energy resources for a certain period.
ii) Impose environmental protection tariff on non-solar resource users or producers and introduce levies on pollutant emissions.
iii) Reduce or remove tax burden for public and private investors on solar energy applications.
iv) Increase the amount of funding for R&D in solar energy and develop technical guidelines and codes on solar energy applications.
v) Bring private companies and Investors in the consortiums for solar energy supply and building infrastructure in the country.
vi) More International collaboration projects to enhance the capacity of R&D as well as total production.

C. Future of Nuclear Energy in Bangladesh

Nuclear energy has to overcome the inefficiencies in the energy mix, security of energy supply, climate change, its cleanliness as less carbon polluting than fossil fuels, raw material availability, technicians and scientists’ interests, etc. [8]. In 2016, 13 countries generated more than 30% of their total electricity from nuclear: France generated 77.7% of its electricity from nuclear power; Slovakia, 54%; Belgium, 54%; Ukraine, 47.2%; Hungary, 43.3%; Slovenia, 41.7%; Switzerland, 40.9%; Sweden, 39.6%; South Korea, 34.6%; Armenia, 33.2%; Czech Republic, 33.0%; Bulgaria, 32.6%; and Finland, 31.6% [7],[1]. These figures clearly suggest that a large fraction of nuclear power production is feasible for Bangladesh as well.

D. Suggested Reform and Restructuring of Nuclear Energy Applications in Bangladesh

The Government of Bangladesh has taken initiatives for necessary changes in establishing regulatory issues before starting their very first NPP project. Although the initiatives are good start, there remain certain regulatory concerns which must be developed and or revised for a safe and sustainable nuclear power sector. We have assessed global nuclear energy industry to outline reform and restructuring of Bangladesh’s nuclear energy sector. Following issues must be implemented in different stages for a sustainable nuclear energy sector.

i) Updating current nuclear energy policies and strategies including commissioning and decommissioning of NPP, radiation protection, nuclear waste management, and interim storage planning of nuclear waste.
ii) Policy guidelines for small nuclear power plant (SPP) and nuclear power purchase from captive power plant.
iii) Public and private partnership (PPP) nuclear power generation policy to bring private companies and Investors in the consortiums.
iv) More International collaboration with the supports from IAEA to enhance the capacity of R&D as well as total production.

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VI. CONCLUSION

As a country of severe electricity crisis, Bangladesh is looking forward to alternative sources such as renewables and nuclear energy in addition to fossil fuels for reliable and secured electricity supply for sustainable development. With current development growth, electricity demand will be five times higher by 2050 than current consumption level. Energy supply will have to be ensured to secure desired socio-economic development growth. Bangladesh has taken several initiatives to increase the generation of electricity in recent years reducing the dependency in fossil fuels and increasing the share of low-carbon technologies including nuclear and solar energy sources. This article has highlighted to strengthen the capacity of solar and nuclear energy for sustainable energy sector in Bangladesh.

Solar energy has a great potential to be expanded in Bangladesh due to very high availability of sunshine throughout the year although this technology is being limited due to the constraint of land availability, low efficiency and high capital costs. Nuclear power on the other hand has security concerns and very high capital investment as well as longer construction period. Besides, radioactive waste management is also a vital and critical issue. However, these drawbacks will be reduced significantly in the coming years with technological development. This article pinpoints the current and future energy scenario and highlighted required actions programs, development of legal, regulatory, professional bodies to ensure expected development of solar and nuclear power sector. With the implementation of those actions/programs, including formulation and restructuring of energy policies to facilitate low-carbon energy technologies, Bangladesh can ensure sustainable power sector, meeting future demand of electricity, which might help the sustainable economic development of the country, transforming us to a developed nation by 2041. More international collaboration in this regard is highly required not only to import new technologies but also to enhance the capacity of research and development (R&D) as well as overall adoption of the technologies.

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Affecting Factors for the Fluctuation in Stock Price

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Abstract – Stock market is not unwavering and there is a regular price fluctuations in stock market. Enormous reasons that may have direct or indirect influences on these price changing (Wolski, 2018). The Tulip and Bulb Craze in 1630 (Beattie, 2018), Roaring 20s” in 1929, Black Monday the 2nd,” in 1987, the Dot.com Bust of 1999-2000, the “Great Recession” Stock Market Crash of 2008 (O’Connell, 2018), the Florida Real State Craze in 1926, Stock market crash of Bangladesh in 2010-11 (Saha, 2012) are few examples of stock market crash and each of these events refers to a dramatic change in stock prices (Baker & Wurgler, 2007). According to (Saha, 2012), from 2007 the share prices of Bangladesh Stock Market is increasing compared to last four years and outperformed almost all the world’s markets and did not affected during global financial and economic crisis in 2008-2009. In this situation, many fresh investors started investing without knowing the risk associated with the share market and did not evaluate any this. It resulted in 2010 as the stock market of Bangladesh was in a big crisis for sudden price fall. This paper is all about those possible factors which may cause fluctuating in price of a stock.

Keywords – Securities and Exchange Commission, Initial public offering, Dhaka Stock Exchange, Price Earnings ratio

Objective- This paper is all about those factors which have direct or indirect influences on the price of a stock. The main objective of writing this research paper is to identify those factors which are closely related with the fluctuation of share price. Another purpose is to make prudent judgements of the investors after analyzing those scenario which are mentioned in this paper for a safe investments in the share market.

INTRODUCTION

A stock market is a combination of buyer and seller who trade stock and buyer claims their ownership on that businesses. It is also known as equity market and it includes both securities those are enlisted in public stock exchange and private companies that issue share. Investing in stock market requires one’s knowledge about stock market, preferences and on available time that investor wants to invest for a long or short span of time. Stock market involves few terms that a shareholder should know. It includes market orders, limit orders, stop orders and so on. According to IG (IG, 2013-2018), A market order is an instruction which is initiated from a trader to broker for executing immediately at the best available price. It ensure that, the order will be executed, however, it does not assure the execution price (Investor.gov, 2018). For a sell order, a market order will be executed near or at the current bid and for a buyer, will be executed at ask price (Investor.gov, 2018). Limit orders is an order to buy or sell a stock at a specific or better price (Investor.gov, 2018). Stop order is an order to buy or sell a stock when the price of the share reaches at a specified price and it also known as stop price (Investor.gov, 2018).

When a company issue stock for the first time, they issue through IPO. For IPO, a company needs to have an evaluation of company’s financial performance through investment banks and after getting approval, a final price is declared for trading. When the company is enlisted and has started its trading, there is a significant fluctuations on every day trading price.

FACTORS AFFECTING STOCK PRICE

On November 2011, DSE had faced enormous price fluctuations (Hossain, 2011). Movements in stock market is quite instable and from time to share prices may different from economic factors (Pettinger, 2017). According to DSE (DSE, 2018) performance of stock market from year 2013 to year 2018 is given below (in graph):
For an investor, it is very important to know the frequency of price changing of a stock because if any investor is risk averse, he might consider not to invest in riskier share (Biswa, 2006). Numerous factors can affect a stock market directly or indirectly. Few factors are discussed here:

**Demand and Supply:**

One of the main reasons for price fluctuation is demand and supply. When supply increases more than demand, then price will decrease, conversely, if demand of a particular share is more than supply then the price will move up. Demand behavior of investors depend on certain issues, such as: companies and their competitor’s performance, government policies, rules and regulations (Shubiri, 2010). So, the demand and supply of a particular stock reflects the volatility of a share price. Interest rate has an impact on the demand and price of stock. When interest rate increases, demand for stock will go down because by nature, investor want to make risk-free investment (Pettinger, 2017).

**News related with the company:**

Any kind of changes in management of that company will effect on stock price and it may also include: merger or acquisition. Again, if company wants to introduce any new products then the price of that company’s stock will also fluctuate on the demand of that product. Previously discussed, income statement, balance sheet will effect on the stock price. 7th largest company of United State bent a vivid height and faced a shaky fall for corporate corruption and accounting fraud. They hide their real financial information from their shareholder and as a result, employees lost their jobs and 401k in pension benefits and billions of leading up to its bankruptcy (Bondarenko, 2018). Again, “The increase or decrease in the share price of companies operating in the same sector, such as the technology sector or the real estate sector, may result in a simultaneous increase or decrease in the share price of this company.” (ADX).

**Earnings:**

As compared to the company’s earnings, P/E ratio helps investors to determine the market value of a stock.

$$\text{P/E ratio} = \frac{\text{stock’s current price}}{\text{Earnings per Share (EPS)}}$$

P/E ratio is the indicator that, currently the market is willing to pay how much money for a stock based on its historical (past) or future earnings (Murphy, 2018). When stock price increase significantly and more than historical average, it is considered that the share is overvalued (Nasdaq, n.d.). In this scenario, it could indicate that the stock price is high. Contrariwise, a low P/E ratio possibly indicates that the current stock price is low.

**Economic Factor:**

Both micro and macro economy play an influential role for the share price fluctuation. When the economy will boom up, firms will be able to generate more profit which will have a reflection in their income state and balance sheet statement and such time of improvement will encourage their investor to invest. Again at the time of economic evolution, people will have more money to invest. A positive relationship exists between stock markets and economic growth (Shubiri, 2010). Moreover, for economic booming, company will have more profit and will offer more dividends so that will also increase the demand of a particular stock.
Inflation

Inflation is the raise in price of consumption goods (Labonte, 2011). Due to inflation, normally sales of a company will slow down and will lead to reduce company’s profit and so it may bring down the stock price. On the contrary, because of inflation, if the company increase their profit margin, then it will definitely have a positive impact on share price (OSC, 2018).

Deflation

Falling price for products will mean to lower profits unless the demand of that product increase in a huge amount. For deflation, stock price may go down and stockholder may start selling their share and may make more stable and risk-free investments (OSC, 2018).

Currency value

Currency value has an effect on price instability in the financial markets (ADX). For a certain industrialized country, if the value of a currency moves higher, importers of that particular product will pay more for buying commodities and that will reduce imports. For this reason, there will be a reduction in the sales of exporting companies and so there will be a drop in share price (ADX).

Investor sentiment

Undoubtedly confidence or the sentiment of investor play another significant appeal for the fluctuation of stock price. Malcolm Baker and Jeffrey Wurgler (Baker & Wurgler, 2007) considered the origin of investor sentiment as exogenous and instead focus on its empirical effects. According to Long, Shleifer (Long, Shleifer, Summers, & Waldmann, 1990) there is considerable evidence that many investors do not follow economists’ advice to buy and hold the market portfolio. The general direction that the stock market takes can affect the value of a stock (OSC, 2018):

- **Bull market:** In bull market, price of a stock is rising (Kole & Dijk, 2010). In this circumstances, investors feel more confident about that stock and are willing to invest in stock market to incur more profits.
- **Bear market:** Bear market is a weak market where stock prices are falling (Kole & Dijk, 2010). In this scenario, investor are not confident enough to make their investments. It may occur when an economy is in recession as well as the unemployment is high (OSC, 2018).

Political Factor:

During new political party comes to power, for example: victory of Donald Trump as 45th president of USA made the investor worried about the trade price of a stock and financial markets as a whole (Nicholas, 2017). In United State, the Democrats have radically outperformed the Republicans though the dive that the Dow took during President Bush Jr.’s final year did significant damage to the Republicans’ record.

New government generally includes new rules and regulations on trading. These might result in good in the short term but not always in the long term (Vlastelica, 2018). According to (Milyo, 2012) regulatory policy or jurisdicative shocks affect corporate share prices in a predictable manner.

CONCLUSION

To sum up, this paper is all about the influencing factors on a stock price. Without mentioned factors, there might be many more factors which have a direct or indirect possessions for changing a stock price. According to Agtmael (Agtmael, 1984) for a viable and sustainable equity market there are few fundamentals, such as: sufficient demand for and supply of securities, stable political environment, government policy to allow private sector, a growing economy, non-discriminatory tax treatment, well developed accounting and auditing standards to escape incident like Enron Scandal, non-discriminatory tax treatment, existence of investment service, firms and intermediaries and finally adequate legal framework to protect investors’ interest. However, it cannot be alleged that, after implementing all of these, it cannot be said that, stock price will not fluctuate and it will remain same. Last but not the least, an investor must need to know the associated risk with that particular stock before making any investment.

REFERENCE

An Analysis of Financial Reporting Systems of Islamic Financial Institutions in Bangladesh

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Abstract – Financial reporting systems are an integral part for the financial worthiness of any business company. Therefore, this study is deals with the analysis of financial reporting systems (FRS) of Islamic financial institutions of Bangladesh. It covers the significance of the principles of Islamic ethics, necessity of the Financial Reporting System (FRS), awareness of the selected respondents regarding the major components of FRS, applicability of the attributes of good FRS, major financial reports and statements sent to the user groups and actual practices of FRS in the Islamic Banks under Islamic Shari’ah. This study is mainly based on survey data which are collected from actual practitioners in the field of Islamic Banking industry of Bangladesh. A structured questionnaire was approached to 150 respondents who are practicing accountants in different Islamic financial institutions. Primary data were collected from a total number of 70 practicing accountants employed in Islamic Financial Institutions of Bangladesh. Most of the objectives have been identified by the respondents as very important objectives. The main findings revealed that there is a significant gap between the actual practices of FRS and desirable Islamic practices among the accountants of Islamic Financial Institutions in Bangladesh.

Keywords – Financial Reporting System (FRS), Islamic Bank, Islamic Shari’ah, Zakat Statement and Accountability.

JEL Classification: F65, G21, G32, O16 and M4

INTRODUCTION

Financial reporting from an Islamic perspective is a process through which appropriate information is communicated to users which enable them to assess whether the entity is operating within the bounds of Shari’ah and fulfilling its responsibilities to society and the environment, and for the users to make decisions that would persuade the entity to fulfill or to continue to fulfill those responsibilities[1]. For users to make such decisions, financial reporting would need to encompass more than just the preparation and presentation of financial statements. From an Islamic perspective, financial reporting may include financial and non-financial information, and may extend into areas beyond the financial statements, such as other areas of the annual report, and may contain elements of social and environmental reporting [2]. These are matters not usually dealt with by accounting standard setters. The expansive display of non-financial information by the entity has lead to a suggestion that the resultant report should more appropriately be named an ‘Islamic corporate report’, rather than a financial report. There are areas which appear to be the exclusive domain of financial reporting from an Islamic perspective, one of which is the reporting of halal and haram elements present in an entity [3]. Financial reporting from an Islamic perspective calls for the disaggregation of items into haram and halal. For example, finance income would be split among interest and income from the various types of Shari’ah compliant contracts [4]. In the particular case of financial reporting, proponents of financial reporting from an Islamic perspective cite Quranic verses such as the following as the basis for subjecting it to Islamic religious considerations: “O ye who believe! When ye deal with each other in transactions involving future obligations in a fixed period of time, reduce them to writing; let a scribe write down faithfully as between the parties; let not the scribe refuse to write; as Allah has taught him, so let him write...” (Surah Al-Baqarah, verse 282)

With the conviction that the recording of financial transactions is a divine commandment, the field of study known as ‘Islamic accounting’ was created. Given that accountability in Islam is all encompassing, the scope of Islamic Corporate Reporting is thus wider than that which is currently practiced in the West. Although ultimate accountability is to God, an individual is also accountable to society. If the appropriate extent of disclosure in corporate reports does depend on the value orientation of preparers, and if the cultural values of Islamic societies differ from those of the Western world, the type of disclosure advocated in such societies either could or should be different from that which has been traditionally assumed to be relevant to Muslim countries. More specifically, [5] argue that accounting systems in an Islamic society should advocate transparency in disclosure, less conservative measurement practices and greater variability in reporting practices between companies and across time. Finally, and most importantly, Islamic financial institutions should regard reporting as a religious obligation. Essentially what this
means is that the ultimate accountability of the manager/accountant/business enterprise is to Allah. There appear to be some reasons that have triggered the need to externally regulate the financial reporting by Islamic Banks (Abdul Karim, R.A). On one hand, it is argued that accounting standard developed for western business organizations are hardly relevant for Islamic Banks. This is because (a) nature of operations of Islamic banks and the financial instrument they use differ from those of conventional banks; (b) balance sheet model of western business organization, reflecting contractual relationship between these organizations and their debt and equity fund supplier, is inadequate to cater for the different contractual relationship between Islamic banks and their debt (mainly current accounts), profit sharing investment accounts and equity fund supplier and (c) contractual framework of accounting currently applied in the west finds its justification in a dichotomy between business morality and private morality. As such, it cannot be implemented in other societies which have revealed dichotomy and morals that govern all social, economic and political aspects of life.

Therefore, Islamic financial reporting is of utmost importance in case of Islamic banks and institutions. Since banks and financial institutions deal in public money; public confidence is a must in order to run these institutions successfully. If the banks lose public confidence, these are sure to collapse today or tomorrow. So, public confidence needs to be created and also maintained by the banks at any cost. It is true that the main vehicle of creating and maintaining public confidence is introducing good financial reporting system. Good financial reporting system also helps having good corporate governance. However, in Bangladesh, it is alleged that the Islamic banks fail to follow the Islamic principles, standard and norms in financial reporting system as regards its various aspects namely objectives, discloser, producer, various users of financial statements and reports and so on. Such an undesirable state of affairs of Islamic financial reporting in case of Islamic banks has motivated the researchers to conduct a research study on such a vital issue of accounting.

OBJECTIVES OF THE STUDY

Broad Objective
The main objective of the study is to critically evaluate financial reporting practice in Islamic Banks in Bangladesh. However, to achieving this broad objective, the study covers the following specific objectives:

Specific Objectives
- To describe the significance of Islamic Ethical issues in Financial Reporting System (FRS) in the context of Islamic financial institutions;
- To categorize the objectives of FRS from the Islamic perspective as viewed by the practicing accountants;
- To examine the degree of awareness of major components of FRS amongst the practitioners;
- To identify the applicability of the good characteristics of FRS in the Islamic Financial Organization;
- To examine the actual current practices of FRS based on Islamic Shari’ah in the financial institutions under study.

LITERATURE REVIEW

Islamic financial institutions (IFI) have been growing 20% per annum over the last decade and it is expected that by 2020 the assets of Islamic Financial Institutions will reach USD 2.6 trillion with revenue of £120 billion (Islamic Development Bank Group, 2017). Asia is an important part of the global economy as well as the Islamic financial system. Asia is the home to the largest portion of the Muslim population in the world. A majority of the population in many Asian countries are Muslim, including Pakistan (96.4%), Bangladesh (86.3%), Indonesia (87.2%), and Malaysia (61.4%). In some other Asian countries, the Muslim population is a minority but still sizable. In India, 14.2% of the population or 172 million people are Muslim[6]. The foundation of Shari’ah in relation to Islamic financial transactions is enshrined in the Qur'an. Sunnah should also be followed. Riba-interest is prohibited in Quran. However, avoiding Maysir (gambling) and speculation along with Gharar (uncertainty) coupled with exploitation and unfairness are also considered to be important elements of the foundation of the Shari’ah by the Islamic scholars [7]. For clarification purposes, Fatwa’s are given and it is a vibrant source of the Shari’ah, therefore, critiques argue that Islamic financial transactions are subject to different interpretations. Relying solely on Fatwas issued by Islamic jurists had raised a number of serious concerns [8]. Islam pays attention to business through moral aspects to achieve maximum profits. Moreover Islamic principles prohibit making anything that may cause harm to individual or hazardous to environment. Islam also encourages charity for those who needs help and cannot work or unable to obtain any income for their survival [9]. Another study reported that social responsibility in Islam is based on the Islamic concept of human well-being and good life, which stresses brotherhood/sisterhood and socioeconomic justice and requires a balanced satisfaction of both the material and spiritual needs of all humans[1]. In Islam each individual and businesses should pay Zakat. The main purpose of Zakat is a redistribution of wealth [10]. The Zakat is collected from wealthy Muslim individuals and businesses and then paid to the poor. Since the establishment of Islamic banks, one of their main objectives is to practice social activities to alleviate poverty and create better community. Therefore, the new notion in the banking and financial sector-socially responsible banking is becoming well established one [11].
[12] and [13] introduced the economic implications of corporate financial reporting and found that managers would rather take economic actions that have negative long-term consequences than make within-GAAP accounting choices to manage earnings. A surprising 78% of their sample admits to sacrificing long-term value to smooth earnings. Managers also work to maintain predictability in earnings and financial disclosures. They also found that managers made voluntary disclosures to reduce information risk and boost stock price but at the same time, try to avoid setting disclosure precedents which difficult to maintain. [14] studied by examining the social reporting practices of Islamic Banks in Saudi Arabia and this examination involved a comparison of the social disclosures of 4 Islamic banks made through their annual reports against an ideal level of social disclosures that Islamic banks ought to make and compare that the study was accomplished using the Ethical Identity Index (EIi). Another study on Islamic corporate reporting conducted by [15], examined the gap between desirable (Standard) and desired (actual) practice of Islamic corporate reporting. The author tried to find out the gap between these two and explaining the reasons for such gap. She also suggested some policy issues to be followed in Islamic corporate reporting in a Muslim country like Malaysia.

[4] focused in the study of “Towards a theory of Islamic financial reporting” on the position of the Western corporation in Islamic law was examined and found that Islam can only accept a separate legal entity that has unlimited liability and a corporate structure that primarily channels investment through Islamic financial institutions was proposed to overcome that constraint. Through the ideas contained in the study, Muslims should be able to share in the benefits of modern, large-scale commerce without having to compromise their religious teachings. [9] conducted a study on Islamic social reporting to identify the factors that might influence a company to provide Islamic social reporting, with the size of the company, profitability, board composition and type of industry examine that three of the factors chosen: size, profitability and board composition significantly influence a company to provision of Islamic social reporting. Industry type was not an important determinant to provision of Islamic social reporting.

The Asian-Oceanian Standard-Setters Group (AOSSG) Working Group (2010) conducted their research work on “Financial Reporting Issues relating to Islamic Finance” and concludes that the challenge to standard-setters and stakeholders is to enhance the cross-border comparability of Islamic financial transactions, while being mindful of religious sensitivities and believed that some IFRS principles are irreconcilable with their interpretation of Shari’ah, and that separate financial reporting principles are warranted. [16] revealed that at present, Islamic banks in Saudi Arabia have much more in common with their conventional counterparts than they do with banks that are supposedly based on Shari’ah. Indeed, the core dichotomy expected between Islamic banks and conventional banks in relation to Islamic ethics was not clearly shown. [17] in the study of “Comparative Analysis of Reporting Practices of Islamic Financial Institutions (IFIs)” focused to explore how major financial transactions were recognized, measured and presented by the Islamic financial institutions in their annual reports, and argued that there were genuine challenges in adopting IFRS by Islamic financial institutions, wide differences exist in treatments of some of the major transactions, and also the paper provided a detailed explanation of the nature of those challenges.

However, after analyzing the above stated discussions and comments and the review of the studies on the highlighted topics, it can be concluded that most of the research studies were based on financial reporting for Islamic financial institutions or on Islamic perspective and also based of the Islamic social reporting [18]. Therefore, so far our knowledge goes no in-depth study especially on the financial reporting for Islamic banks in Bangladesh was conducted previously. Hence, there appears a gap on the two vital issues of FRS of Islamic Banking in Bangladesh. However, the present study is an endeavor in the regard.

METHODOLOGY OF THE STUDY

The present study is the blending of both library survey and empirical survey. Through extensive library survey, the requisite secondary data were gathered from the relevant text books, reference books and research studies and Google different web side. By the use of empirical survey the requisite primary data were collected with the help of a structured questionnaire, prepared with the line of objectives.

All the Islamic banks operating in Bangladesh numbering 07 were selected as sample size for the purpose of collecting primary data (excluding 4th generation Islami Shariah based PCB). A total number of 70 respondents taking 10 from each bank have selected. These respondents were one Senior Vice-President (SVP) and 03 Vice-Presidents (VP) and 06 Assistant Vice-Presidents (AVP) of each bank with the help of convenient sampling. Data were collected by the researchers by direct interviewing of the respondents. The collected primary and secondary data were processed using SPSS. In order to make this study more informative and analytical statistical tool namely weighted average (WAS) was used wherever applicable.

FINDINGS AND DISCUSSIONS

Since the study is mainly based on primary data, the findings have been analyzed under the following sub-headings:
3.1 Significance of Islamic ethical issues in Financial Reporting System (FRS)

In the West, incorporating ethics into accounting practice is perceived as becoming increasingly important at the present time [19]. However, its study in accountancy may be considered as still in its infancy [20] and [3]. A religion-oriented accounting, it is argued, cannot dispense with its ethical dimensions [21]. Accordingly, the basic premise on which Islamic accounting can be developed lies in the domain of ethics. Developing accounting theory using an ethical approach to incorporate ethical principles into accounting operations results in numerous problems because there is no common source from which ethical values may be derived. As a consequence, questions such as “fair to whom,” “or what purpose” and “under what circumstances” are difficult to determine with any precision. According to [22] from Islamic perspective, however, fundamental business ethics flow automatically from the practice of religion, rather than the codes devised and imposed upon members by professional organizations [23]. Accordingly, developing an Islamic accounting theory using and ethical approach is more natural. The Shari'ah provides the common source from which guidelines on what is considered as ethical business practices could be derived. An important aspect of ethical business practices in Islam is the attitude of mind behind the activities (intentions). An action cannot merely be seen to be good; it must also be accompanied with good intentions. Further, Islamic ethics rest largely on its conception of man in relation to self, God, universe, and society [24]. The Islamic worldview elaborated provides the framework within which Islamic ethical dimensions can be incorporated in the Islamic Corporate Reporting mode. As may be recalled, the emphasis on the wider economic environment and the interests of the general public is central. Because the Shari’ah lays down certain personal responsibilities and obligations to society, the accountants cannot simply accept at face value the utility maximizing theory that traditional neoclassical economic theory has advocated.

At this stage, it is essential to examine the importance of the principles of Islamic ethics applicable in FRS on the basis of opinions of the respondents of Islamic Banks’ top executives.

Table 1 Importance of the Principles of Islamic Ethics Applicable in FRS

<table>
<thead>
<tr>
<th>Principles</th>
<th>Truthfulness</th>
<th>Mutual Trust</th>
<th>Sincerity</th>
<th>Rating Scale</th>
<th>Important</th>
<th>Most Important</th>
<th>Weighted Average</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truthfulness</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>51</td>
<td>4.7286</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mutual Trust</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>55</td>
<td>4.7857</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sincerity</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>23</td>
<td>47</td>
<td>4.6714</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

The table-1 reveals that in terms of weighted average score (WAS), the Mutual Trust occupies the 1st rank with WAS of 4.78 followed by the Truthfulness with 4.73 WAS, Mutual Consultation with 4.71 WAS, Sincerity with 4.67 WAS, Justice with 4.66 WAS, brotherhood with 4.61 WAS, Integrity with 4.59 WAS, transparency with 4.56 WAS, Unity Objectivity with 4.53 WAS, Accountability with 4.47 WAS, Fear of Allah with 4.45 WAS, Responsibility with 4.43 WAS, Competence with 4.42 and Tawhid with 4.39 WAS, Patience and Morality with 4.32, and Equilibrium opined least importance with 4.27. All the above WAS signify that all the 17 principles of Islamic ethics have been significant to the respondents because of the fact that WAS all of the principles has been 4 and above out of 05 total score.

At the last stage, the Islamic principles of FRS whether followed adequately or not needs to be found out. This is because of the fact that the quality of FRS depends on the extent of application of the same. However, the following table shows the picture in this regard. The opinions of the respondents have been portrayed in Table 2.

Table 2 Applying Islamic Principles of FRS

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islamic principles</td>
<td>28.57</td>
</tr>
<tr>
<td>Frequency</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>0</td>
<td>51.43</td>
</tr>
<tr>
<td>Highly Adequate</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Field Survey and complied by Authors

The above table reveals that 51.43% respondents have opined that the Islamic principles of FRS are followed adequately; 20.00% respondents have opined in favor of highly adequate of the same and the rest 28.57%...
respondents were in favor of inadequacy of the same. Thus, it is observed that the accountants’ beliefs as to the practice of Islamic principles of FRS in Bangladesh are adequate.

### 3.2 Categorize of FRS Objectives from the Islamic Perspective as Viewed by the Practicing Accountants

As the researchers, we are to find out the necessity of the objectives of FRS from the Islamic perspective. This is so because the quality of FRS also depends on the importance of the objective of FRS mainly from the Islamic perspective. However, the following table reveals the importance of the objectives of FRS from the Islamic perspective on the basis of the opinions of the practicing accountants of Islamic Banks operating in Bangladesh.

Table 3 Importance of the Objectives of FRS from the Islamic Perspective

<table>
<thead>
<tr>
<th>Objectives of FRS</th>
<th>Rating Scale</th>
<th>WAS</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>To assist users in economic investment decisions</td>
<td>Most unimportant</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>To assist Government in macro financial planning</td>
<td>Most unimportant</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>To measure and collect Zakat</td>
<td>Most unimportant</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>To plan and allocate economic resources</td>
<td>Most unimportant</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>To assist business entities, banks/financial institution in their planning on the Shari'ah</td>
<td>Most unimportant</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>To assist investors in their risk reducing investment decisions</td>
<td>Most unimportant</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>To ensure truth and fairness in financial information system</td>
<td>Most unimportant</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>To disclose unlawful transactions in Islamic framework but lawful in capitalist framework like interest income from external sources, interest paid on ony</td>
<td>Most unimportant</td>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Compiled by Authors on the basis of Field Survey

The above table depicts that in terms of weighted average score (WAS), the objective “To assist shareholders in evaluating the financial conditions” occupies the 1st rank with WAS of 4.86 followed by the objectives “To assist management group in taking managerial decisions” with 4.80 WAS, “To ensure truth and fairness in financial information system” with 4.76 WAS, “To assist users in economic investment decisions” with 4.44 WAS, “Information about entity’s discharge of social responsibilities” with 4.43 WAS, “To assist Government in macro financial planning” with 4.23 WAS, “To plan and allocate economic resources” with 4.21 WAS, “To assist business entities, banks/financial institution in their planning on the Shari'ah” with 4.11 WAS, “To assist investors in their risk reducing investment decisions” with 4.20 WAS, “To disclose unlawful transactions in Islamic framework but lawful in capitalist framework like interest income from external sources, interest paid on ony” with 4.14 WAS, and the objective “To get information about the entity’s discharge of its fiduciary responsibilities opined least importance” with 3.91 WAS. In a nutshell, we can say that all the above WAS representing the objectives of FRS have been significant to the respondents because of the fact that WAS of all the principles has been about 4 out of 5 total score.

### 3.3 Examining the Degree of Awareness of Major Components of FRS amongst Practitioners

Some authors [5, 25] have mentioned the major 10 components of FRS. These components of FRS were placed before respondents to rate their awareness. The following table presents the awareness of the respondents as to major components of FRS.

Table 4 Awareness of the Respondents as to Major Components of FRS

<table>
<thead>
<tr>
<th>Components of FRS</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To assist shareholders in evaluating the financial conditions</td>
<td>60</td>
</tr>
<tr>
<td>To assist management group in taking managerial decisions</td>
<td>56</td>
</tr>
<tr>
<td>To get information about the entity’s discharge of its fiduciary responsibilities</td>
<td>44</td>
</tr>
<tr>
<td>Information about entity’s discharge of social responsibilities</td>
<td>30</td>
</tr>
<tr>
<td>Objectives of FRS</td>
<td>Rank</td>
</tr>
<tr>
<td>To assist users in economic investment decisions</td>
<td>1</td>
</tr>
<tr>
<td>To assist Government in macro financial planning</td>
<td>2</td>
</tr>
<tr>
<td>To measure and collect Zakat</td>
<td>3</td>
</tr>
<tr>
<td>To plan and allocate economic resources</td>
<td>4</td>
</tr>
<tr>
<td>To assist business entities, banks/financial institution in their planning on the Shari'ah</td>
<td>5</td>
</tr>
<tr>
<td>To assist investors in their risk reducing investment decisions</td>
<td>6</td>
</tr>
<tr>
<td>To ensure truth and fairness in financial information system</td>
<td>7</td>
</tr>
<tr>
<td>To disclose unlawful transactions in Islamic framework but lawful in capitalist framework like interest income from external sources, interest paid on ony</td>
<td>8</td>
</tr>
</tbody>
</table>
3.4 Identification of the Applicability of the Good Characteristics of FRS in the Islamic Financial Organization

A number of attributes of FRS have been identified by some authors namely [20]. These attributes of FRS were placed before our respondents to rate their importance. The following table reveals the importance of the attributes of FRS from the Islamic perspective on the basis of the opinions of the practicing accountants of Islamic Banks operating in Bangladesh.

Table-05 Importance of the Attributes of FRS

<table>
<thead>
<tr>
<th>Attributes of FRS</th>
<th>Rating Scale</th>
<th>WAS</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>0 0 0 30 40</td>
<td>4.57</td>
<td>15</td>
</tr>
<tr>
<td>Consistency</td>
<td>0 0 0 24 46</td>
<td>4.6571</td>
<td>13</td>
</tr>
<tr>
<td>Accuracy</td>
<td>0 0 0 10 60</td>
<td>4.8571</td>
<td>2</td>
</tr>
<tr>
<td>Preciseness</td>
<td>0 0 0 15 55</td>
<td>4.7857</td>
<td>9</td>
</tr>
<tr>
<td>Uniformity</td>
<td>0 0 0 25 45</td>
<td>4.6428</td>
<td>14</td>
</tr>
<tr>
<td>Fairness</td>
<td>0 0 0 11 59</td>
<td>4.8428</td>
<td>6</td>
</tr>
<tr>
<td>Appropriate and full disclosure</td>
<td>0 0 0 10 60</td>
<td>4.8571</td>
<td>3</td>
</tr>
<tr>
<td>Timeliness</td>
<td>0 0 0 16 54</td>
<td>4.7714</td>
<td>10</td>
</tr>
<tr>
<td>Objectivity</td>
<td>0 0 0 10 60</td>
<td>4.8571</td>
<td>4</td>
</tr>
<tr>
<td>Understandability</td>
<td>0 0 0 12 58</td>
<td>4.8285</td>
<td>7</td>
</tr>
<tr>
<td>Reliability</td>
<td>0 0 0 8 62</td>
<td>4.8857</td>
<td>1</td>
</tr>
<tr>
<td>Transparency</td>
<td>0 0 0 10 60</td>
<td>4.8571</td>
<td>5</td>
</tr>
<tr>
<td>Completeness</td>
<td>0 0 0 17 53</td>
<td>4.7571</td>
<td>11</td>
</tr>
<tr>
<td>Representation al faithfulness</td>
<td>0 0 0 45 25</td>
<td>4.3571</td>
<td>16</td>
</tr>
<tr>
<td>Neutrality</td>
<td>0 0 0 20 50</td>
<td>4.7142</td>
<td>12</td>
</tr>
<tr>
<td>Verifiability</td>
<td>0 0 0 13 57</td>
<td>4.8142</td>
<td>8</td>
</tr>
<tr>
<td>Substance and form</td>
<td>0 1 0 40 20</td>
<td>4.0000</td>
<td>17</td>
</tr>
<tr>
<td>Prudence</td>
<td>0 1 0 38 15</td>
<td>3.7285</td>
<td>18</td>
</tr>
</tbody>
</table>

Source: Compiled by Authors on the basis of Field Survey

The above table depicts that in terms of weighted average score (WAS), reliability occupies the 1st rank with WAS of 4.8857 followed by accuracy with 4.8572 WAS, Appropriate and full disclosure with 4.857 WAS, objectivity with 4.8570 WAS, transparency with 4.8569 WAS, fairness with 4.8428 WAS, understandability with 4.8285 WAS, verifiability with 4.8142 WAS, preciseness with 4.7857 WAS, timeliness with 4.7714 WAS, and completeness, neutrality, consistency, uniformity and comparability, relevance,


Lastly, we can conclude that most of the accountants of Islamic banks of Bangladesh are highly aware of the financial reports and statements of FRS because of the fact that WAS of none of the component has been below 3 out of 05 total score.
representational faithfulness, substance and from have occupied 11th, 12th, 13th, 14th, 15th, 16th and 17th ranked with 4 and above WAS respectively. In conclusion, we can say that all the above WAS except prudence with 3.7285 WAS representing the attributes of FRS have been significant to the respondents because of high weighted average score out of 05 total score.

### 3.5 Current Actual Practices of FRS from the Islamic Perspective

At this stage, it is essential to examine the actual practices of FRS in Islamic banking sector in Bangladesh on the basis of opinions of Islamic Banks’ top executives. The following table shows the types of the major Reports/Statements with their periodicity, the persons responsible for preparation and user group in order to examine the actual FRS practice in the Islamic banking in Bangladesh.

#### Table 6 Types of the Major Reports/Statements

<table>
<thead>
<tr>
<th>Types of Major Reports</th>
<th>Periodicity</th>
<th>Persons Responsible</th>
<th>User Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chairman’s Report</td>
<td>Annually</td>
<td>Chairman</td>
<td>Shareholders, Depositors, Regulatory Authorities &amp; Stakeholders</td>
</tr>
<tr>
<td>Director’s Report</td>
<td>Do</td>
<td>Director</td>
<td>Do</td>
</tr>
<tr>
<td>Auditor’s Report</td>
<td>Do</td>
<td>Auditor</td>
<td>Do</td>
</tr>
<tr>
<td>Corporate Governance Compliance Report</td>
<td>Do</td>
<td>Chairman</td>
<td>Do</td>
</tr>
<tr>
<td>Report on CSR</td>
<td>Do</td>
<td>CEO of CSR Activities</td>
<td>Do</td>
</tr>
<tr>
<td>Income statement</td>
<td>Do</td>
<td>Director/ VP in Charge</td>
<td>Do</td>
</tr>
<tr>
<td>Statement of Owner’s Equity</td>
<td>Do</td>
<td>Do</td>
<td>Do</td>
</tr>
<tr>
<td>Statement of Retained Earning</td>
<td>Do</td>
<td>Do</td>
<td>Do</td>
</tr>
<tr>
<td>Balance Sheet</td>
<td>Do</td>
<td>Do</td>
<td>Do</td>
</tr>
<tr>
<td>Cash flow Statement</td>
<td>Do</td>
<td>Do</td>
<td>Do</td>
</tr>
<tr>
<td>Fund Flow Statement</td>
<td>Do</td>
<td>Do</td>
<td>Do</td>
</tr>
</tbody>
</table>

Source: Compiled by Authors on the basis of Field Survey

However, the above table depicts that all the report/statements (mentioned above) are prepared annually by every Islamic bank. Furthermore, chairman is responsible for Chairman’s Report and Corporate Governance Compliance Report. In addition, Director, Auditor, and CEO of CSR Activities are the responsible for Director’s Report, Auditor’s Report, and Report on CSR respectively. Production Managers are responsible for Environmental Report and Chief Accountant is responsible for Statement of Sources and uses of fund. According to our respondents every reports/statements is prepared for Shareholders, Depositors, Regulatory Authorities, and Stakeholders and others.

As the researchers, we are to know to whom the accountants and managers have responsibility and accountability. In order to examine the same, we have placed a question before our respondents to identify to whom they are responsible and accountable. The following table shows the Percentage of Respondents of primary responsibility and accountability to Allah, the creator and secondary responsibility and accountability to the organization, the public and other stakeholders.

#### Table 7 Responsibility and Accountability of the Accountants and Managers

<table>
<thead>
<tr>
<th>Responsibility and accountability of the accountants and managers</th>
<th>Frequency</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary responsibility and accountability to Allah, the creator</td>
<td>05</td>
<td>7.14</td>
</tr>
<tr>
<td>Secondary responsibility and accountability to the organization, the public and other stakeholders.</td>
<td>35</td>
<td>50.00</td>
</tr>
<tr>
<td>Both</td>
<td>30</td>
<td>42.86</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Compiled by Authors on the basis of Field Survey
The above table depicts that 50% of accountants and managers of Islamic Banks in Bangladesh have opined that they have secondary responsibility and accountability to the organization, the public and other stakeholders. Whereas, only 7.14% of respondents are of opinion that they have primary responsibility and accountability to Allah, the creator and 42.86% of respondents support both.

To examine the necessity and effectiveness of training programs for the executive of finance and accounts and MIS divisions, we have placed some questions to our respondents. The following table shows the percentage of respondent’s opinion of need of training programs for Executives of Finance and Accounts and MIS Divisions.

Table 8 Need of Training Programs for Executives of Finance and Accounts and MIS Divisions

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need of training programs for Executives of Finance and Accounts and MIS Divisions</td>
<td>Yes</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>00</td>
</tr>
</tbody>
</table>

Source: Compiled by Authors on the basis of Field Survey

The following table shows the percentage of respondent’s opinion of Arrangement of training programs for Executives of Finance and Accounts and MIS Divisions.

Table 9 Arrangement of Training Programs for Executives of F. & A. and MIS Divisions

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrangement of training programs for Executives of Finance and Accounts and MIS Divisions</td>
<td>Yes</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>00</td>
</tr>
</tbody>
</table>

Source: Compiled by Authors on the basis of Field Survey

The above both table portray that 100% of our respondents believe that the training programs for Executives of Finance and Accounts and MIS Divisions is essential. According to respondents, 100% of Islamic banks have arranged training programs for executives of Finance and Accounts and MIS Divisions. As regards the contents of training programs the respondents have opined the following issues which are: Tafsirul Qur’an, Discussion on Hadith with meaning, Importance of Islamic Ethics, Necessities of Sari’ah Law, and Awareness of financial reports and statements. The following table reveals that trainings are arranged on other issues not relating to FRS.

Table 10 Effectiveness of Training Programs

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Rating Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>71.43</td>
<td>0</td>
<td>Most</td>
</tr>
<tr>
<td>Ineffective</td>
<td>28.57</td>
<td>0</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

Source: Compiled by Authors on the basis of Field Survey

The above table shows that 71.43% of respondents are of opinion that the existing training programs are ineffective in the context of FRS. Only 28.57% of respondents are of opinion that the existing training programs are effective in context of FRS.

CONCLUSIONS

The present study critically evaluates the importance of the principles of Islamic ethics, necessity of the objectives of financial reporting system (FRS) from Islamic perspective, awareness of the selected respondents regarding the major components of FRS and examining the applicability of the attributes of a good FRS in the selected organizations, identifying the major financial reports and statements, user groups and thereby assessing the actual practices of FRS in the Islamic Banks [27]. The study indicates that mutual trust, truthfulness, mutual consideration, Sincerity, Justice, Integrity, and Transparency have been the most significant principles of Islamic ethics as opined by the respondents. The study further reveals that the objectives of FRS as shown in table-03 have been significant to the respondents. The study points out that most the accountants of the Islamic Bank have been highly aware of the financial reports and statements as embodied in table-04 of the study. Again, of the various attributes of a good FRS as mentioned in Table-05, reliability, accuracy, full disclosure, objectivity, transparency, understandability, verifiability, preciseness, and timeliness have been the major ones as viewed by the respondents. The study points out that although the practicing accountants have primary responsibility to creator but in practice this is rather disappointing because only 7% of the respondents have been in favor of the same. The respondents although have stressed the need of training programs to the executives of finance, accounts and MIS division but in practice such training programs are mostly ineffective as opined by the respondents. This is so because the contents of training programs do not include most of the aspects of FRS. From the above analyses, it can be concluded that the existing practice of FRS in the Islamic Banks operating
in Bangladesh has been far from the practice desirable in Islamic perspective. Therefore, the relevant authority of banks must take proper steps without any further delay so that the practice of FRS becomes fully in compliance with Islamic Shari’ah.

REFERENCES

Determining Factors Affecting the Influence of Financial Stakeholders – An Empirical Study on the Islamic Banking in Bangladesh

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Paper ID: ICBM-19-0729

Abstract – Islamic Bank has become a new prospect for the financial system of Bangladesh. As a Muslim nation, Stakeholders want to invest their money on Islamic banks due to their religious belief. Hence, the study of this paper is to find out the significant factors which can influence the stakeholders as strong determinants to invest more in Islamic banks. As regards, data were collected from the annual report of four influential developed Islamic Banks in Bangladesh during the period 2013-2017. In this study, “deposits”, “bank size” and “profitability” were considered as independent variables and “Return on asset” was considered as the dependent variable in order to run multiple regression analysis. It was revealed that, profitability and deposits are statistically significant on the basis of Return on asset. On the other hand, it was found out that the bank size is statistically insignificant on Return on Asset.

Keywords – Islamic banking, determining factors, Influence, stakeholders, Bangladesh

Objectives – The research conducted on the Islamic banks has been very minimal. So the objective of this paper is to complete this research gap in this sector.

I. LITERATURE REVIEW

Now a day’s Islamic bank has performed as a country’s Economic and Social welfare. Furthermore, it has become very much widespread in Muslim oriented Country due to their religious value. Yet in Bangladesh, It becomes a severe competition with conventional bank and the most important part is how they have convince their stakeholders or customers to invest on their bank. Many researchers including ref. [3], have conducted studies on factors influencing to the most to make profit. They mainly focus on the effect of capital structure, size, deposits, Liquidity which can make adverse result on Islamic bank. Moreover, they also emphasize on return on equity and return on asset which can draw attention to the shareholders who mostly invest on the Islamic bank. According to ref. [5], [6], People want to invest in the Islamic bank from their beliefs of Islamic principles and it became popular whole over the world. In Addition, Islamic bank should emphasize on the need for understanding customer satisfaction, customer’s bank selection criteria and role of customer’s demographic factors in shaping customer’s awareness and usage of Islamic bank products/services [1].

However, findings by ref. [2] exemplified that interest free banking which operates in accordance with Islamic law can be an influential factors for an Islamic country. And it is the prohibition of haram, immoral and negative elements from economic activities, provides a strong foundation for business to grow regardless of the fluctuations of macroeconomic variables [4]. Correspondingly, the author also demonstrates Roger’s innovation of Diffusion model where it has focus on relative advantage, compatibility, complexity, perceived risk, perceived trust and customer innovativeness which can be strong influential factors.

In the Malaysian context, ref. [10] elaborates Chapra’s Model which is an Equity based financing with the spirit of Shariah and Islamic world view. Likewise, he also illustrates the Ismail’s model. This Model explains that Islamic bank should work as same as commercial bank but with a manner of Islamic law, they can maximize their profit and attract their customers as well. Ismail’s law also indicated that shareholders and depositors should not be burdened with other responsibilities.

II. INTRODUCTION

Islamic banking has started since mid-70s and expanded its business whole over the world specially the Muslim oriented country. By the same token, the development of Islamic banking is drastically increasing in Bangladesh and also including Pakistan, Bahrain, United Kingdom, Afghanistan, France, Kuwait, Turkey, Indonesia, Malaysia, Egypt and many more. The top ten Islamic banking dominions are Iran, Saudi Arabia, UAE, Malaysia, Kuwait, Qatar, Turkey, Bangladesh, Indonesia and Bahrain. The new Islamic financial service industry stability re-counted the growth of Islamic Finance where the global Islamic banking has practiced 4.3% expansion in assets to around $ 1.56tn. On the other hand, Asian Islamic banking has the most improved market share which increased from 22.5% to 24.4% with the growth of key markets such Malaysia, Bangladesh, Pakistan and Indonesia. The reason behind this scenario is the awareness of Islamic values taking people more closely to Islamic banking for having “Shariah” based products (Interest based products). For the purpose of taking “Shariah” based product is to avoid paying and receiving interest which is strictly “Haram” for Muslims. By the same token, once upon a time Muslims were remaining
unbanked and then Islamic banking system removes those barriers and started their business with the “Shariah” based products [7], [8]. Together with, the study of this paper is to understanding the factors regarding Islamic banks in Bangladesh which can influence the financial stakeholders to invest more on Islamic banks. Identically, Bangladesh has started its Islamic operation since 1983 from the demands of our Muslim majority nation where they prefer Islamic banks based on religious grounds. Currently, there are eight full developed Islamic banks in our country. In like manner, 9 commercial banks have their 19 Islamic banking branches and eight conventional banks have their 25 Islamic banking windows in their branch. Moreover, they become each other’s competitors by providing the exceptional factors mainly liquidity, bank size, profitability, deposits, high level of trust, moral impact and many more to attract the stakeholders. In this paper, the research looks into the effect of bank size, profitably and deposits as a factor of independent variables and the return on asset as a dependent variables based on the four top most banks in Bangladesh.

III. METHODOLOGY

There were four Islamic banks have been selected to conduct this research and the paper is done based on stakeholder perception. Therefore a suitable model was also build for accomplishing research objectives. Correspondingly, Regression analysis was conceded to create an acceptable conclusion.

Data Collection:
To conduct this research study, data were collected from the annual report of four influential developed Islamic Banks in Bangladesh during the period 2013-2017. Likewise, the banks are - 1. Al-Arafah Islami Bank Limited, 2. Islami Bank Bangladesh Limited, 3. Social Islami Bank Limited, 4. Shajalal Islami Bank Limited.

Model Specification:
The following model has been developed for this study, ROA = F (Size, Profitability, Deposit) + ε (Error)

The model used for doing regression analysis where ROA stands for return on asset as a dependent variable and size, profitability and deposits as an independent variables. By the same token, regression analysis has been done based on the effect of dependent variables over independent variables. Also the estimated coefficient measured the degree of relation between dependent variable and independent variables where this study has found the significant factors which can influence the financial stakeholders to invest more on Islamic banks in Bangladesh.

Size of the bank: Size of the bank indicates the ownership of assets by banks. Usually, we found the size of the bank from total asset section which is natural log of total asset.
Profitability: It is the profit where earning should be more than expenses and banks raise its profit by using influencing power. Here the study found its profitability from return on equity of banks. The reason behind choosing return on asset over return on equity is Islamic banks financing is made from its deposits moderately than asset [3].

Deposits: Deposits is the one of the major source of doing business in the banks. There is much kind of deposits especially in Islamic Banks. Return on asset will be in an adverse position based on the total deposit of the bank. Deposits could be strong influential factors for Islamic banks because they provide “Shariah” based products with Islamic law and as Muslim nation everyone wants to be safe from their religious beliefs by taking those “Shariah” based products [9].

IV. RESULT AND ANALYSIS

This part of the paper analyzes with the multiple regression analysis. Here the results measured which independent variables are significant on the basis of dependent variable. In this way, we have found the factor which is strongly influential for the financial stakeholders.

### Al-Arafah Islami Bank Limited

<table>
<thead>
<tr>
<th>Year</th>
<th>ROA</th>
<th>Size</th>
<th>Profitability</th>
<th>Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>1.31</td>
<td>11.31</td>
<td>14.15</td>
<td>5.14</td>
</tr>
<tr>
<td>2014</td>
<td>1.1</td>
<td>11.31</td>
<td>12.8</td>
<td>5.22</td>
</tr>
<tr>
<td>2015</td>
<td>1.08</td>
<td>11.35</td>
<td>12.82</td>
<td>5.23</td>
</tr>
<tr>
<td>2016</td>
<td>1.23</td>
<td>11.43</td>
<td>15.7</td>
<td>5.3</td>
</tr>
<tr>
<td>2017</td>
<td>0.99</td>
<td>11.49</td>
<td>14.07</td>
<td>5.39</td>
</tr>
</tbody>
</table>

**Interpretation:**
Here, Regression Statistics for the bank of Al-Arafah Islami Bank illustrates that Multiple R, R square and adjusted R square is almost near to 1 which indicates that dependent variables is fitted on the independent variable and the association between dependent and independent variable is positive.

On the other hand, among all the independent variable, it is clearly shown that “Profitability” is only statistically significant on the basis of Dependent variable which is Return on asset. So it is proved that relationship between ROA and profitability is statistically significant.
Interpretation:

Here Regression Statistics for the bank of Islami Bank of Bangladesh illustrates that Multiple R, R square and adjusted R square is also near to 1 which indicates that dependent variables is fitted on the independent variable and the association between dependent and independent variable is positive.

On the other hand, among all the independent variable, it is clearly shown that "Profitability" and "Deposits" are statistically significant on the basis of Dependent variable because the P values are below 5%. So it is proved that coefficient of profitability and deposits on return on asset are significant.

### Social Islami Bank Limited

<table>
<thead>
<tr>
<th>Year</th>
<th>ROA</th>
<th>Size</th>
<th>Profitability</th>
<th>Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>1.67</td>
<td>11.1</td>
<td>11.01</td>
<td>5</td>
</tr>
<tr>
<td>2014</td>
<td>2.36</td>
<td>11.18</td>
<td>15.68</td>
<td>5.09</td>
</tr>
<tr>
<td>2015</td>
<td>2.08</td>
<td>11.25</td>
<td>16</td>
<td>5.17</td>
</tr>
<tr>
<td>2016</td>
<td>2.06</td>
<td>11.35</td>
<td>16.16</td>
<td>5.2</td>
</tr>
<tr>
<td>2017</td>
<td>1.4</td>
<td>11.44</td>
<td>10.27</td>
<td>5.36</td>
</tr>
</tbody>
</table>

**Interpretation:**
The result of regression statistics for the bank of Shahjalal Islami Bank Limited is remain as same as the other three banks where the relationship of Dependent and independent variables is positive. Besides, All P values of the independent variables of Shahjalal Islami Bank are more than 5%. As a consequence, there dependent variable doesn’t have any effect on independent variables. So they are statistically insignificant.
V. CONCLUSION
The paper attempted to examine the effect of dependent variable over the independent variable of the four top most Islamic banks in Bangladesh. To emphasize the regression analysis, this paper includes “size”, “profitability” and “Deposits” as an independent variables and “Return on asset” as a dependent variable. As shown above, the regression analysis illustrates that profitability and deposits have the statistically significant impact on the all Islami Banks in Bangladesh. Therefore these two variables are also depending on Return on asset. Though, this analysis didn’t find any significant impact on Social Islami bank and Shahjalal Islami bank limited. However these findings offer some implications by which Islami banking system can find out the more strong valuable variables for influencing the financial stakeholder. Meanwhile, this analysis also focused on the factors which need to have improvement to run the banking business and also the survival factors in the banking sector in Bangladesh.

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Transportation Supply Chain Performance: Bangladeshi Tourism Industry Viewpoint

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Paper ID: ICBM-19-0733

Abstract – This empirical study focuses on the prospects of transportation associated with tourism industry. Bangladesh has developed a transportation network that includes roads, railways, inland waterways and airports as the country is adorned with natural beauty that attracts the tourists. The main objective of this study is to categorise the complications and scenarios of transportation in tourism sector in Bangladesh thorough investigation on the problems in transportation system. This is remarkable that to evaluate Bangladeshi tourism growth and expansion many researches have been created in many times to explore possibilities and limitations in terms of Bangladesh tourism sector. This research is mainly a qualitative one. To conduct this research on transportation supply chain practices from the perspective of Bangladeshi tourism, authors have used reliable secondary data. Finding denotes that due to having under constructed roads and poor connectivity is one of the main reason for which the growth of tourism is getting hampered. Moreover, this sector has huge potential and if they utilize proper supply chain model for transportation then it is for sure that they will be successful in their business. Depending on the ways and also the segments the whole transportation supply chain can be created easily. Tourism is currently the quickest developing and single biggest industry on the planet. The advantages that are obtained from tourism ought to be genuinely conveyed, and afterward just will tourism be contributory, and hence, the privileges of nearby inhabitants will be appropriately perceived, and tourism will be dependable and manageable.

Keywords – Tourism, Transport, Sylhet, Competitiveness

INTRODUCTION

Tourism is travel for pleasure or business. Tourism is a key of economic and social substantial that has been renowned in both developed and developing countries. Bangladesh is full of natural beauty. The country is adorned with natural beauty that attracts the tourists. It has beautiful beaches as well as the longest beach in the world that is Cox’s Bazar sea beach. Rivers, beaches, hills, prehistoric sites, historic mosques and monuments, forests and wildlife, waterfalls, tea gardens, religious places surround it. Hundreds of twisting waterways, sparkler pure water lakes encircled by evergreen hills, plentiful tropical rain forests, world’s biggest mangrove forest well-preserved as World Heritage, exquisite Saint Martin coral landmass, Kuakata, home of the Royal Bengal Tiger, wind in the paddy fields, rich cultural heritage, relics of ancient Buddhist civilizations and colourful tribal vibes—etc. made Bangladesh a land of peace. To observe the beauty of nature, huge amount of domestic & foreign tourists visit around the country and its tourist places. Sylhet is such a spot that tourists love to visit.

One thing that disturbs tourists to travel in Bangladesh is transportation. Lack of good transportation and communication system is one of the major problems among various problems of tourism industry in Bangladesh. Bangladesh has developed a transport network that includes roads, railways, inland waterways and airports. Among them road transport has been used heavily by tourists. However, road construction is very poor in our country mostly in tourist spots. Roads are broken here and there. Broken roads often give the feelings of rollercoaster. Direct transport is not available in most tourist areas such as Sylhet. Tourists have to hire private transport to travel areas from their hotels/motels/places they stay which sometimes become costly. They often also have to hire local transport called “Chander Gari” to visit places. Moreover, safety issue is now a concern for travellers as terrorism on highway is increasing. These things are decreasing the number of tourists in our country. It is very necessary to develop proper transportation system to attract domestic as well as foreign tourists.

OBJECTIVE OF THE STUDY

The main objective of this study is to categorise the complications and scenarios of transportation in tourism sector in Bangladesh. The objectives of the study are as follows: to investigate the problems in transportation system in Bangladesh. To identify the major constraints to the development of transport, and to prescribe the necessary recommendations for the improvement of the tourism sector in Bangladesh.

LITERATURE REVIEW

To evaluate Bangladesh tourism growth and expansion many researches have been created in many times to explore possibilities and limitations in terms of Bangladesh tourism sector. The government of Bangladesh has taken steps to conduct rational
speculation which cannot be achieve without the proper help of constructive marketing and management action if the desire outcome is to meet with the proper policy goals regarding the well-being of framework, national airlines in short countries overall tourism sectors. Moreover, in the tourism sector of Bangladesh it is discovered that there is a huge absence of executive management process. For instance, lower networking system, absence of proper groundwork and also failed to capture a good image to the market. For the development of tourism sector in Bangladesh it has been identified that Bangladesh Parjatan Corporation (BPC) is highly blamed for not maintaining its responsibilities as it is the governmental tourism syndicate and also the developer of tourism improvement. [1]. For serving to the present and implicit traveller it is highly recommended to work on the improvement of infrastructure, assuring satisfactory services, work on establishment and moreover, need to conduct an efficient and effective management procedure.[2]. [3] Claimed in his research that regardless of all the attempts and determinations of the administration, Bangladesh Parjatan Corporation yet is holding a rigid position, and still capable of doing great works toward progress of tourism sector in here Bangladesh. The theory of traditional manufacturing supply chain management is applied to the study of tourism supply chain. Based on the view of sustainable development, a large-scale relevant literature review concerning tourism supply chain and sustainable supply chain is performed, in which current situation and deficiency are reviewed. In order to solve the problem, this paper tries to discuss and establish a new sustainable supply chain pattern, in which tourist attractions are taken as core enterprises. Furthermore, this paper tries to find an optimization strategy to do facilitate long-term sustainable development of tourism and improve the tourism industry profitability and competitiveness. As the environment problem is becoming increasingly serious, the concept of sustainable development springs up, which is put into the research of supply chain management by a growing number of scholars and they devote to the coordination and optimization of economic, social and environmental benefits. In the early research of tourism supply chain, travel agencies are core enterprises having the function of comprehensive coordination. [4]. However, as travel ways transfer and e-commerce platforms develop, travel supply chains have had more problems, in which travel agencies are considered as cores. Based on the perspective of sustainable development, tourism supply chain development and tendency are revaluated and tourism supply chain of scenic areas is built as the core enterprise in this paper. In the next step, suggestions and strategies for scenic areas to have a role to play are introduced, so as to optimize the sustainable tourism supply chain structure. Discussing the development, design, marketing and service of the sustainable development strategy will be beneficial for the implementation and operation of sustainable tourism supply chains, which will do facilitate long-term sustainable development of tourism.

Domestic tourism supply basically satisfies the needs of tourists. However, the rationality of allocation still needs to be optimized. Tourism products always lack specialties and innovations, which has caused intensive market competition and thus over-supply occurs. On the other hand, in-depth tourism, experiential products and high class supplies are insufficient. Individual travelers are growing very fast and they can obtain information and arrange their own trips on the internet. Based on the tourism supply chain ideas, an increasing number of scenic spots build comprehensive marketing and reception systems; from their own e-commerce platforms, they get in touch with their tourists directly and supply them with accommodation, catering and entertainment. Meanwhile, travel agencies have gradually lost their leading positions in the market. In addition, diversified tourism supply chains have adapted personalized tourists’ requirements. Regarding travel agencies as the core, traditional tourism supply chains mainly undertake the work of resources integration, organization and coordination and they are the cement of various relevant enterprises. During the actual operation, travel agencies are provided with complicated default risks and they are hard to respond to market changes. At the same time, travel agencies pay attention to short-term benefits and ignore the reception ability of scenic spots, which will result in the damage to the environment and have an influence on tourists’ experiential contentment. In other words, as travel ways transfer and e-commerce develops, competition occurs between travel agencies and suppliers and the problems of travel agencies’ low operation efficiency and lack of ability to coordinate and integration become increasingly apparent. Besides this, he also demonstred the principle that causes why tourism sector of Bangladesh yet playing a role of backdated and providing poor outcomes compare to the other Tourism-based country where he blamed especially factors like, absence in systematization, visualization, adequate strategy planning etc. In addition, he also recommended that the necessity for spread and development of frame working is must to increase the tourism business in Bangladesh. However, [5] added that Bangladesh tourism sector is holding a great market with possibilities and marketing game plans. He also mentioned that though Bangladeshs unsuccessful to capture the big market of tourism compare to the other South Asian countries but yet it is successfully capable to fascinating a remarkable number of travellers to visit in Bangladesh every year with its variety of attractiveness. In addition, Hasan has requested to establish a different anticipation and constraints of traveling area of Bangladesh. Bangladesh is holding a huge future possibility in terms of hotel and Restaurant services and also can achieve a dynamic improvement. [6].Lacking's of sufficient absolute tourists' goods, the impoverished connection to the ambition, similarly the
absence of enough and adequate marketing encouragement has identified as the main dilemma of Bangladesh tourism sector. [7]. Though Bangladesh is blessed with nature, the country is still lacking behind in tourism sector [8]. Though the country is lacking behind still one in 30 of working population is related to tourism. Both the foreign help and domestic investment in this sector are not satisfactory. There are some major issues for which Bangladesh cannot grab the attention of the foreigners. One of them is image problem and also the policy makers of the country do not have enough and clear idea about tourism. There is problem in every sector whether it is budgeting or accommodation or maintains the standard of the places. Bangladesh has all the beauty to grab the attention of the tourists [9] which includes many places of the country including sylhet the land of tea garden and hills. To the world Bangladesh is a low economic country with lots of problems which is undeniable but also the country has many historical glory and many natural blessings which is yet needs to be shown to the world [10]. It’s a great source of tourism and earning revenue earning and also foreign exchange [11]. Tourism not only contribute at the economy of a country it also plays a vital role in the overall development of a country [12].

METHODOLOGY

The research is based on secondary data and observation. It is an exploratory research with a focus on relevant data existing as a finding of researches done by experts. The research is mainly a qualitative one where three significant research papers were studied which is: “Service supply chain practices from the perspective of Malaysian tourism industry”, “Prospects and constraints of tourism sector in Bangladesh: An Analysis” and” Problems and prospects of tourism industry at sylhet region in Bangladesh”. Some of the tourists who frequently visited sylhet were randomly interviewed and there suggestions were recorded. The paper mainly emphasized on the surveys shown on the journal and research paper which have been followed to get a clear view of the situation of sylhet tourism.

FINDINGS BASED ON LITERATURE

Bangladesh is surrounded with all the scenic beauty and mesmerizing tourists’ places. When we think about the tourist place in Bangladesh then we can easily divide it among three parts which are Archaeological, Historical and Natural beauty. Each and every other places are significantly different and worth visiting. For national economic expansion tourism plays always one of the most important roles. But from the literature review we have found that transportation is one of the main reason for which it is quite difficult for Bangladesh to attract tourist.

Roads are not constructed well. Moreover, poor connectivity is one of the main reason for which the growth of tourism is hampering. Akhtaruzzaman Khan Kabir the chairman of the corporation said that they are discussing this issue with the local government for the infrastructure of the roads. If the roads are constructed smoothly then tourists can easily visit the desired destination without any hindrance.

To solve all these problems there is a huge opportunity for the risk takers who want to be an entrepreneur and they can work for the transportation supply chain in Bangladesh for all the tourist places. Moreover, this sector has huge potential and if they utilize proper supply chain model for transportation then it is for sure that they will be successful in their business. From the conference paper of “Service Supply Chain Practices from the Perspective of Malaysian Tourism Industry” written by T. K., HONGand S.ZAILANI there found a model which is basically the “Relationship between the Tourism, Hospitality and Travel Industries”.

Here, we can see that there are lots of ways which are basically ways of transportation. One of the most important and interesting part is in this model the author have segmented the people also. The ways of transportation are trains, ferries, airlines, bus and coach, car rental. On the other hand, the criteria of tourists are commuters, local travellers, migrants and students.

Depending on the ways and also the segments the whole transportation supply chain can be created easily. For sylhet the organizers can arrange car or buses or mini buses or even car basically based on the segmentation of tourist and then bring them in sylhet. For the sylhet tour organizers can booked steamers and comfortable way of transportation so that travellers doesn’t need to be bother to look for transportation for roaming. Same things can arrange in terms of Sunderbans forest, Rangamati, St. Martin’s Island, sea beach resort in Cox’sBazar,
Himchari, Patanga sea beach, Bogalake, Foy’s lake and many more. Therefore, for cox’s bazar travel agencies can also maintain the proper and full package including the entire tourist place visiting with proper and smooth transportation system. Because when tourist will not think about the transportation issue only then they will feel motivate to visit all the renowned places. Therefore, by implementing transportation supply chain model the management of this sector will be much more productive and tourist will be motivated in visiting the tourists’ spot of our country. As a result, a proper transportation system can easily increase the number of tourists from which national economic development can occurs excessively.

CONCLUSION AND RECOMMENDATION

The implication of tourism is seen from numerous edges like monetary, social, social, political, and so forth. Tourism is currently the quickest developing and single biggest industry on the planet. The business has accomplished noteworthy development worldwide as far as visitor entries and remote trade income which has driven the regularly expanding rivalry among the goal nations and increased best need in the vast majority of the goal nations. Tourism in Bangladesh is a gradually creating remote cash worker. The nation has much to pull in global and residential travellers. Bangladesh’s vacation destinations incorporate archaeological locales, verifiable mosques and landmarks, resorts, shorelines, excursion spots, woods and innate individuals, natural life of different species. Bangladesh offers sufficient chances to visitors for calculating, water skiing, waterway cruising, climbing, paddling, yachting, ocean showering and in addition getting one close touch with flawless nature. Bangladesh needs to build up residential tourism which is socially and psychologically adequate, naturally and environmentally maintainable, and monetarily practical. The advantages that are obtained from tourism ought to be genuinely conveyed, and afterward just will tourism be contributory, and hence, the privileges of nearby inhabitants will be appropriately perceived, and tourism will be dependable and manageable.

To make Bangladesh a tourism responsive nation, the following recommendations can be implemented:

- The government should contribute a key part to set up guiding principles for planning and improvement, promoting, control and selling of tourism segment, since it gives abundant business chances to the native and gains remote cash for the nation. The government should screen the actives of travel agencies which are engaged with task. They should take necessary steps for attracting the tourists to visit those sites.
- The entrepreneurs working in this sector should apply the model of transportation supply chain smoothly and efficiently. As a result of which, the management of this sector will be much more productive and will tourist will be motivated in visiting the tourists’ spot of our country.
- The government ought to screen the performances of travel agencies which are associated with tour business. Bangladesh tourism faces numerous issues including region of marketing, administration, foundation, arrangement, direction and image. All issues are not inimitable and like the truth of overall tourism goals. Arrangements ought to be determining considering each perspective precisely and significant proposals ought to be given based on involvement, view of specialists and applicable learning of others. The new strategy ought to perceive the parts of both public area and the private segment in the advancement of tourism.
- Local neighbourhood ought to be reasonably instructed to safeguard their natural resources and tourist spots ought to be quiet, clean and tidy and in addition it should have a fun, energizing, unwinding, educative, educational and exact data of tourist spot should be distributed to the sightseers.
- The improvement of tourists’ facilities should be taken up in an arranged way at government and non-government levels. Tourism should be coordinated with all the national occasions, either social or religious and it must be arranged more trustworthy and appealing exposure things, including visit agenda, for sharing.

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Bond Market Analysis of Bangladesh

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Abstract – This paper analyzes the bond market of Bangladesh and found it to be significantly smaller than the neighboring countries at only 6.43% of Gross Domestic Product (GDP). The main objective of the paper is to find the factors dragging down the bond market of Bangladesh. The components of the bond are analyzed alongside DSEX – index of Dhaka Stock Exchange and the bank fixed deposit rate and bond yields are found to be higher than the fixed deposit rates. The main hindrance in the Bangladesh bond market is found to be the lack of knowledge and the lack of promotion of the market itself. Recommendations include the increase in development of Islamic bonds - Sukuk and increase funding of financial literacy programs.

Keywords – Bond, Capital market, DSEX.

I. INTRODUCTION

Bond market serves as one of the best alternative source of investment for investors around the world while serving as one of the easier routes to ensuring finance for a business. In fact, the global bond market, which stands at $100 trillion, is considerably larger than the global stock market, which is valued at $64 trillion.

Bangladesh has seen significant economic growth over the years; however, the bond market has yet to flourish in Bangladesh capital market, which has showed very little signs of growth. The lack of a flourishing bond market has deprived Bangladeshi investors and companies of various benefits that they could have reaped had there been a developed bond market.

The paper aims to shed light on the following matters:

- Current state of the bond market in Bangladesh.
- Key factors that have been dragging down bond market improvement over the years.
- Lastly, provide some suggestions based on the factors hindering the growth of bond market performance.

II. LITERATURE REVIEW

Ref. [5] found out that only 5% of their respondents opted for investment in corporate bonds while 97.37% of the respondents found the bond market too inefficient. According to ref. [5] survey, 67.5% and 57.5% of their respondents thought inefficient market regulation and lack of actions against market manipulators few of the strongest reason to avoid investment in bond market and their subsequent below-par development.

Ref. [3] found the market in Bangladesh to be very inefficient with respect to number of issues, volume of trade, number of participant, long-term yield curve, interest rate policy etc. Ref. [3] identified some key factors hindering the growth and development of bond Market in Bangladesh such as risk and return factor, liquidity and government policy, management issues, macro-economic variables and regulatory issues.

III. METHODOLOGY

The main source of information for the research paper has been secondary data that is available on the Internet. The price fluctuations of the bonds and DSEX index values have been gathered from the DSE Annex Building Library. Various qualitative data has been gathered from the Internet, which has enabled to compile this paper. Two articles on the bond market of Bangladesh were also used to provide secondary information regarding the market.

IV. RESULTS

Compared to the bond market of India, Pakistan and Sri Lanka the bond market of Bangladesh is significantly small and underdeveloped. Furthermore, the corporate bond market is close to non-existent with only 1 bond currently in flotation [1], [2].
The tenure wise breakdown of the treasury bonds shows higher coupon rates as tenure of the bond increases. This reflects into a rising yield curve – an indicator of a healthy economy.

The prices of three corporate bonds in recent times have been analyzed above which shows a significant number of standard deviation. IBBL Mudaraba perpetual bond generated a return at 10% of declared dividend along with profit earned by the Mudaraba fund at 1.25 weightage.

The lack of knowledge among investors is the single biggest hindrance in the development of the bond market of Bangladesh. Even though bonds provide a higher return than fixed deposits, people still prefer to save at banks instead of investing due to the lack of knowledge about how bonds and capital market operates.

Lack of promotion of the bond market by the government and the corporations are also thought to hinder the growth of the bond market. As shown in Fig7, at least 50% of the issue of corporate bonds is in private placements so general investors have very little awareness regarding bonds.

The Bangladesh financial system is heavily dominated by banks with 58 scheduled banks in the economy. Banks and capital markets are competing for funds from investors and the dominance of banks have been making it difficult for the development of capital markets and thus bond markets are specially lagging behind.

VI. RECOMMENDATION

Financial literacy programs need to be encouraged to improve the investors’ knowledge regarding capital markets and bond markets in particular. The government recently has taken initiatives and more programs need to be held to make people aware of the capital market.

Increased promotion of the bond market is required to make investors realize of the potential of higher returns compared to the fixed deposits at banks. Corporations

Fig. 2. The summary of Bangladesh Treasury bond market

Fig. 3. Tenure wise breakdown of coupon rates of treasury bonds

Fig. 4. Corporate bond market summary

Fig. 5. Correlation matrix of DSEX with corporate bond prices
opt for private placement due to lower cost and ease of issuing. However, initiatives should be taken by the government to encourage more public placements of bonds, which would bring in more general investors.

In Fig 4, it was seen that IBBL Mudaraba bond’s standard deviation was the lowest among the three bonds that were compared. One of the key reason for this could be the Islamic law – Shariah - followed by the bank which made the investors feel more secure and also satisfied due to the income generated being “halal”. The IBBL Mudaraba bond has been floating since 2007 and recent reports have been that another issue is likely to be underway. This tells us that the bond has been successful for the company and the comparatively low standard deviation also indicates a slightly higher investor confidence in the bond. Therefore, flotation of such Islamic bonds should be encouraged in the market.

Bangladesh has a Muslim majority population where people might refrain from investing in fixed interest earnings due to interest being haram. Therefore Islamic bonds such as Sukuk should be encouraged in the market. Sukuk has been very successful in Malaysia as reported by The Star in 2018 and Bangladesh being a Muslim majority can also have their fair share in the Islamic bond market. This would help remove the “interest” barrier that hinders a lot of people from investing in the bond market [4].

Finally, increased support and security is required from the Government of Bangladesh, Bangladesh Securities & Exchange Commission & the Dhaka Stock Exchange to make the bond market flourish. A healthy and growing economy is always big boost to the development of a market be it stock market or bond market.

VII. CONCLUSION

The bond market of Bangladesh would eventually develop if the right regulations are in place and when general investors in the economy are financially literate. The poor knowledge and the low popularity of the capital market turned out to be the major factors in the underdevelopment of the bond market. To achieve these 2 objectives, the government would need to invest heavily in regulations and training and development of investors. A developed bond market would bring several benefits to the economy as it would act as an alternate source of capital for the firms and also provide great passive income for the general investors.

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An Empirical Analysis on the Performance of Bonds in Dhaka Stock Exchange

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Abstract – This study begins with a compact view of bond performance in Bangladesh. The research is proceeded in a systematic manner. Our analysis continues in the same path walked by Cornell \& Green (1991). We factored Monthly Bond Return against the 5 years Treasury Bond Cut-off Yield and monthly returns of the DSEX index. Additionally, we made 3 different equations for the 3 bonds in the market. The regression revealed that all 3 of the bond returns have positive $\beta$ coefficient with DSEX Index return. Conversely, none of the 3 bonds are affected by Treasury bond yield. To sum up this study, we answered the research questions. The answers cover that the return on bonds are not up to the level of the Index return. As well as, the bond returns were seen to be following the DSEX return direction in general. Finally, this research indicated that the return on bonds were not satisfactory for the investors.

Keywords – Bond performance, DSEX Index, Return/Yield

I. INTRODUCTION

Rationale of the study

This paper is about the bond performance in Bangladesh. The findings reveal the returns generated by bonds in comparison to the Dhaka Stock Exchange (DSEX) index return. Since there is a limited number of bonds present in Bangladesh there is a lack of studies in the field. Therefore, this research will be very helpful to investors who are looking to invest in bonds.

Statement of the problem

The main problem with bonds in this country is that only a handful have ever been issued. Additionally, the mass public do not have the knowledge of their existence and little alone how bonds work. On top of that, there is a gap in the research of bond performance in Bangladesh. This is where our research comes in place to solve this problem.

Scope and delamination

The main intention of the study is to figure out and compare the returns of bond with return of the DSEX index. The paper will cover whether the return on bond is over satisfactory level or not for the investors.

However, the study is based on the available DSEX data which is from February 2013 to December 2017.

Objectives of the paper

The objective of the research can be broken down in two forms:
1. General Objective:
   This research is primarily prepared to find a place in the prestigious BBS-ICBM.
2. Specific Objective:
   More specifically, this study entails the following aspects:
   • To give an overview of the return on bonds.
   • To compare the bond performance with the index performance.

Research Questions

Q1. How is the return on bonds compared to the return on the DSEX index?
Q2. Is the bond return moving in the same direction as the market return?
Q3. Is the return on bonds satisfactory to the investors?

II. METHODOLOGY

The study is proceeded in a systematic manner starting from selection of the topic to the final paper preparation. The data used in the paper is publicly available data from the DSE. Therefore all the data used in this research is secondary.

III. ANALYSIS AND INTERPRETATION

In congruence with ref. \cite{1} and the data we had in possession \cite{2}, we have based the research on the following equation:

\[
\text{Bond Return} = B_0 + B_1 \times \text{TB} + B_2 \times \text{DSEX} + \varepsilon
\]  

Here the dependent variable is Bond Return, which represents the monthly return on bonds. The Bond Return is controlled for two factors, TB and DSEX. The first independent variable TB is the 5 years Treasury Bond Cut-off Yield. And the second independent variable DSEX indicates the monthly returns of the DSEX index \cite{2}.
The data we used for this research was the DSEX trade information from February of 2013 to December of 2017. So that to measure the performance of bonds I extracted the monthly return from this 5 years period. For this a simple formula was used:

Monthly Bond Return = \frac{\text{Bond price at the end of the month} - \text{Bond price at the beginning of the month}}{\text{Bond price at the beginning of the month}} \times 100 \tag{2}

As mentioned before, there has been a scarce number of bonds issued in Bangladesh, a scanty number of only 3 in history. They are:

- ACI 20% Convertible Zero Coupon Bonds
- Subordinated 25% Convertible Bonds of Brac Bank Ltd
- IBBL Mudaraba Perpetual Bond

2 of the 3 bonds have been issued by banks and one by a pharmaceutical company. As of now, only the ACI bond has been matured and other 2 are still active in the market. Instead of generalizing the bond return, we formulated the bond performance individually with relevance to the available dataset.

In this regard Microsoft excel was used to calculate the monthly Bond return in the following manner:

![Fig. 1. Monthly return of ACI 20% Convertible Zero Coupon Bonds from February 2013 to March 2015](image1)

*Note: The data ACI bond matured in 2015

![Fig. 2. Monthly return of Subordinated 25% Convertible Bonds of Brac Bank Ltd from February 2013 to December 2017](image2)

Fig. 3 Monthly return of IBBL Mudaraba Perpetual Bond from February 2013 to December 2017.

Most of the bonds in DSEX have a maturity bracket of 5 years. Therefore, the 5 years Treasury Bond Cut-off yield has been used to factor for the bond return, in order to synergize with the bonds in the market. As given on the website of Bangladesh Bank (2018), the cut-off yield of 5 years Treasury bond is 4.5%. Hence, we used the 4.5% yield in the dataset to run the empirical test.

Finally, the last element in our equation is the DSEX return. The monthly DSEX return was calculated from the DSEX file (2013-2018). So that to calculate the index return we used similar formula to that of bond return:

Monthly DSEX Return = \frac{\text{DSEX Index at the end of the month} - \text{DSEX Index at the beginning of the month}}{\text{DSEX Index at the beginning of the month}} \times 100 \tag{3}

Again, we used Microsoft excel to figure out the DSEX return in the following way:

Fig. 4 Monthly return of DSEX Index from February 2013 to December 2017.

IV. EMPIRICAL ANALYSIS AND RESULTS

We began the regression analysis once we arranged the dataset to the likes of the equation. Microsoft excel was used to run the regression. Based on the equation Bond
Return = B_0 + B_1*TB + B_2*DSEX + \varepsilon, I formulated 3 separate equations for 3 bonds.

The data contained only two years trade information about ACI 20% Convertible Zero Coupon Bonds, starting from February 2013 up to March 2015. Hence, we used the same number of observations in TB and DSEX. The formula used to calculate ACI Bond return is as follows:

ACI BOND RETURN = B_0 + B_1*TB + B_2*DSEX + \varepsilon

Fig. 5 Snapshot of the regression result of ACI Bond Return

The R^2 from the regression says that 7.1% of the variation in the ACI bond return is explained by the variation in Treasury bond yield and DSEX return. The standard error tells us the average error of estimation is about 0.034% per return. Moreover, there was a total of 26 observations for this regression.

The coefficient on the intercept reads 0.015% return from the ACI bond even if the TB yield and DSEX Return are 0. The coefficient on the DSEX return indicate that a 1% increase in DSEX return will increase the ACI bond return by 0.17%.

Therefore the underlying formula becomes:

ACI BOND RETURN = 0.0145190555666426 + 0*TB + 0.174057321265196 + \varepsilon

We had the full 5 years data for the rest of the 2 bonds. Starting from February 2013 up to December 2017. Thus, we had a greater number of observations for the next two regressions. The formula used to calculate Brac Bank Bond return is as follows:

Brac BANK BOND RETURN = B_0 + B_1*TB + B_2*DSEX + \varepsilon

Fig. 6 Snapshot of the regression result of Brac Bank Bond Return

The R^2 from the regression says that 7.6% of the variation in the Brac Bank bond return is explained by the variation in Treasury bond yield and DSEX return. The standard error tells us the average error of estimation is about 0.029% per return. Moreover, there was a total of 59 observations for this regression.

The coefficient on the intercept reads -0.003% return from the Brac Bank bond even if the TB yield and DSEX Return are 0. The coefficient on the DSEX return indicate that a 1% increase in DSEX return will increase the Brac Bank bond return by 0.21%.

Therefore the underlying formula becomes:

BRAC BANK BOND RETURN = -0.00307750586941236 + 0*TB + 0.217356713804186 + \varepsilon

We had the full 5 years data for the rest of the 2 bonds. Starting from February 2013 up to December 2017. Thus, we had a greater number of observations for the next two regressions. The formula used to calculate IBBL Mudaraba Perpetual Bond return is as follows:

IBBL BOND RETURN = B_0 + B_1*TB + B_2*DSEX + \varepsilon

Fig. 7 Snapshot of the regression result of IBBL Bond Return

The R^2 from the regression says that 8.6% of the variation in the IBBL Bond return is explained by the variation in Treasury bond yield and DSEX return. The standard error tells us the average error of estimation is about 0.029% per return. Moreover, there was a total of 59 observations for this regression.

The coefficient on the intercept reads -0.0001% return from the IBBL Bond even if the TB yield and DSEX Return are 0. The coefficient on the DSEX return indicate that a 1% increase in DSEX return will increase the IBBL Bond return by 0.18%.
Therefore the underlying formula becomes:

\[ \text{IBBL BOND RETURN} = -0.000110296374673298 + 0.183489496276585\beta + \varepsilon \]

One common thing to be noted among the 3 results is that the \( \beta \) coefficient on Treasury bond return is 0. This is 0 because the 5-years Treasury bond rate is fixed at 4.5%.

**Other Recommendations**

On completion of the study we realized that we have only covered the tip of the iceberg of the bond market situation in Bangladesh. There is a wide horizon of research to be done on the topic bonds in Bangladesh. In the light of this subject further research should be done on bond performance especially with additional factors like shonchoy potro return, inflation rate, recession etc. We believe the bond performance can be better explained with additional factors as such.

V. CONCLUSION

We attempted to fill the gap in research on bond performance with this paper. To wrap up, we will answer the research questions we had at the beginning of this research.

Q1. How is the return on bonds compared to the return on the DSEX index?
The 3 bonds has produced 3 individual returns when compared to the DSEX index return. The DSEX return has been fluctuating all over the 5-years length.

![Fig. 8 Trend line of monthly return of DSEX Index from February 2013 to December 2017](image)

It can be seen that the index return has created sharp spikes with no fixed trend. In contrast, the bonds seem to be telling a different story.

Firstly, the ACI bond generated positive returns through 2013 to February 2014 then it slowed down for a month before picking up once again up until 2017 December.

![Fig. 10 Trend line of monthly return of Brac Bank Bond from February 2013 to December 2017](image)

Secondly, the Brac Bank bond return was mostly positive from 2013 to February 2014. Starting from April of 2014 the return steeply declined to about -12% till April of 2016 after which it fluctuated all the way till December 2017.

![Fig. 11 Trend line of monthly return of IBBL Bond from February 2013 to December 2017](image)

Thirdly, the IBBL bond return never settled into any trend it had steep declines throughout the 5 years term but managed to climb back each time.

In a nutshell, it can be said that the return on the Index fluctuated quicker than the bonds. As a consequence, the DSEX index produced greater number positive returns in the last 5 years than the bonds.

Q2. Is the bond return moving in the same direction as the market return?

From this research it can be seen that the return on bonds have positive correlation to the DSEX return. All 3 bonds seems to be trailing the DSEX index but at a slower pace. The following are illustrations of the return paths of the 3 bonds compared to the index:
It can be noted from the graphs that the bonds have been moving in the same direction as the DSEX index. The Brac Bank bond has been tailgating the index most closely with a β coefficient of 21.7%.

Q3. Is the return on bonds satisfactory to the investors?

In accordance to figure 11, 12, & 13 it is apparent that the index has been giving higher returns than the bonds. Although the bonds have been following the index, the returns were not quick enough to catch up to the index return. Thus, it can be concluded that the return on bonds have not been all that satisfactory to the investors.

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Stock Market in Bangladesh: A Holistic Approach

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Abstract – Stock market is an indispensable barometer that shows the pros and cons of economic state of a country, when the turnover of stock market can contribute a lot towards the Gross Domestic Product (GDP). The stock market has introduced in Bangladesh in 1954. Despite its operation of half a century, it is one of the smallest markets among the neighboring countries like India, Pakistan and Nepal etc. The objective of the study is to demonstrate the overview of the stock market. This paper also focuses on problems of the market and suggestions to overcome the respective problems. While the hypothesis regarding the unhealthy market takes place. Sadly, the market remains its embryonic condition in absence of active market professionals, the existence of weak legal and regulatory frameworks, the predominance of individual investors, and a serious dearth of foreign and institutional investors. This article suggests that the government and concerned authorities should be more active to protecting the investors on a priority basis in order to achieve public confidence again.

Keywords – Gross Domestic Product, growth, investor, regulatory framework, turnover

I. INTRODUCTION

A stock market is a public market for the trading of company stock and derivatives at an agreed price; these are securities listed on a stock exchange as well as those only traded privately. Usually a stock market is the reflector of its countries economy. The stock market plays various roles in an economy. It acts as an intermediary between surplus units and deficit units of the economy and facilitates savings into investments. Also by providing liquidity of these investments, the stock market ensures optimum allocation of resources. All these activities make it the engine for the growth of the economy. Stock market in Bangladesh is not yet to play its potential role as a vehicle for financing long term investment. However, the hangover of an unpalatable historical past which saw a dramatic plunge in the second half of 1996 and starting of 2011 only to be followed by a drastic downswing has been successfully trying to overcome. A number of actions from the regulatory bodies were the main reason of losing public confidence from the stock market. Frequently changing the policy and poor response of institutional investors, merchant banks and commercial banks in the crisis period make the market unstable. Such poor condition of the market is the effect of "overregulation" by Securities and Exchange Commission (SEC), the stock market regulator, and Bangladesh Bank (BB), the monetary watchdog, due to they are not regulating in a right way in the right time.

II. OBJECTIVE OF THE STUDY

Stock market, being an important element of today’s economy, demands an intensive and special attention. The objective of this study is to look into overall scenario of stock market and identify its different pros and cons along with some guidelines to overcome existing problems. Specifically our focuses are:

1. To give a holistic idea about the stock market of Bangladesh;
2. To find out the problems associated with the market.
3. To provide a number of concrete suggestions to overcome the hindrances of Bangladesh stock market.

III. HYPOTHESIS OF THE STUDY

The performance of the regulatory bodies of stock market is not sound. They don’t work for interest of general investors.

IV. LITERATURE REVIEW

There are various kinds of studies that had been conducted on stock market in Bangladesh and some of them are given by:

Ref. [5] concluded that regulatory systems are not transparent as well as not sound, as a result investors remain in dark in knowing the rules which are fluctuating also and that consequently invite the syndication appears to have dominated which causes market situation uncertain when local investors do not keenly intend to invest in the said market and foreign investments do not take place in time as well. Here, the intermediaries among the four groups mentioned earlier do not play adequate role in the development of the stock market.

Ref. [3] reported in an Article “The prospects, possibilities and challenges of Bangladesh stock market” that the recent growth of stock market (CM) of Bangladesh was far behind time. He witnessed the money market (MM) grew stable in this country over the last decade and the economy was starving for a matured and stable.

M.K. Mujeri and Md. Habibur Rahman in his study titled “Financing Long Term Investments in Bangladesh: Stock Market Development Issues” regarding the stock market position that there has been an increased demand for the development of infrastructural services and opening up of the infrastructural sector for private investment so that a large number of intermediaries and private sector participants would participate the financial market to raise...
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Analysis has been made on the basis of the objectives mentioned before in the context of "Stock Market in Bangladesh: A Holistic Approach". This research has been written on the basis of information collected from primary and secondary sources. This study is basically exploratory in nature based on qualitative analysis. The primary information has been collected from the traders and some general investors who have investment in the stock market. And the secondary data has been collected from website of Dhaka Stock Exchange (DSE), Chittagong Stock Exchange (CSE), Stock and Exchange Commission (SEC), International journal papers, Journals and monthly review of Dhaka Stock Exchange, Different websites for report on stock market, News Paper articles.

V. METHODOLOGY

The stock market inception in Bangladesh refers to 28 April, 1954 when the East Pakistan Stock Exchange Association Ltd. was established. Formal trading began on the bourse in 1956. The trading was suspended during the liberation war of Bangladesh in 1971. Operation resumed again in 1976 with the change in government policy. During 1976, there were only 9 listed companies with total paid up stock of Tk. 0.138 billion and the market capitalization of Tk. 0.147 billion which was 0.138% of GDP (Khan,1992).Since then the stock exchange continued its journey of growth. The second stock exchange of the country, the Chittagong Stock Exchange (CSE) was established in December 1995. In order to control operation of the stock exchanges and trading of stock of listed companies, the government of Bangladesh established the Stock and Exchange Commission of Bangladesh on 8th June, 1993 under the Stock and Exchange Commission Act, 1993. The mission of the SEC is to protect the interests of stock investors, develop and maintain fair, transparent and efficient stock markets, ensure proper issuance of stock and compliance with stock laws, while it is an attached department to the ministry of finance.

Stock market in Bangladesh can be split into two main sections: the primary and secondary market. The primary market is where new issues are first offered, with any subsequent trading going on in the secondary market. In the primary market people can invest to purchase the Primary Shares of the established companies in the primary market through the initial public offering (IPO) and they become considered to be the Share Holders who can get the ultimate dividend of the companies concerned. Of course, in this market purchased shares cannot be sold. The investors can also invest their money in the secondary market purchasing the secondary shares in case of secondary market.

The market has stabilized a bit these days, as evidenced by the 24% increase in market capitalization to about $41 billion (as of July 2016) from $33 billion in February 2011. The contribution of the banking sector has shown a healthy reduction of exposure to the stock market and has decreased to 12.6% in July 2016 from 28.8% in December 2010 (Figure1).

![Figure 1: DSE Market capitalization](BDT= Bangladesh Taka, LHS= left-hand side
RHD= right-hand side)

The rising trend of the DSE index and market capitalization continued during FY2015. At the end of FY2016, the DSE Broad Index stood at 4,507.6, up 1.0% from the previous year's 4,480.5 (Figure 2).
The problems of the stock market:
The problems of the stock market in Bangladesh are structural, and, actually quite far reaching meets the eye. The unexpected rise and fall in share prices mostly followed from the general confidence of the investors about political stability, euphoria of investment in shares, prospect of quick stock gains, a vacuum in respect of institutional presence in the share market, monopolistic dominance of member brokers, inefficiency of the SEC’s to cope with the developments, absence of proper application of circuit breaker etc. Delivery versus payment mechanism was used as one of the main vehicles of manipulation. The problems of Bangladesh stock market are given below:

If we look at the issues individually like the DSE Index, the syndicates, comprising of stock exchange members and the SEC we can find the common link, which is the stock exchanges and the SEC. There are big syndicates acting together to artificially influence the prices resulting in huge profits for them at the expense of the average investors who put in their hard earned lifetime savings. Many of the stocks are overpriced and this is a serious risk factor for the inexperienced investors. Entry of new companies in the market can help reduce gap between demand and supply and help bring stability in the market. New companies need to be encouraged to come to the bourse through market friendly policy. But recent policy interventions do not seem to be moving towards that end. The state owned companies are not coming forward for listing despite repeated assurances given by the authorities. Access to high quality and credible corporate information remains a major problem in the market. While a handful of institutional investors may enjoy certain benefits since they have an investment unit manned with qualified officers, nothing exists for retail investors. And, in the absence of independent research houses, retail investors primarily focus on advice given by their brokers, which often consists of market rumors. This is not acceptable, and it often leads to enormous losses for small investors who are vital for a low-income and emerging market like Bangladesh.

Filtering of information among different types of investors may leave scope for manipulation; this assumption had been proved right in the 1996 market meltdown at the cost of many individuals and households. Many companies do not focus real position of the company as some audit firms involve in corruption while preparing financial statements. As a result the shareholders as well as investors do not have any idea about position of that company. On the other hand some companies do not hold Annual General Meeting (AGM) and eventually declare dividends that confused the shareholders about the financial positions of the company.

And last, but definitely not least, is the Stock and Exchange Commission (SEC) whose total policy and regulations favors' the syndicates which primarily consists of high net worth people and the stock exchange members resulting in an "artificial demand driven market". Until and unless these fundamental issues are addressed the stock markets here will fail to see the light of the day.

Findings and Recommendations:
The overall condition of the stock market of Bangladesh and we are also looking to more general, institutional and the foreign participants to overcome this situation. One of the main reasons why the market is going down can be identified due to sustaining volatility in the money market. Frequently changing policies make the overheated. Individual investors are losing confidence from the market. Our regulator, Security and Exchange Commission is also need to be more cautious in monitoring all the discrepancies done by any listed company in compare to their past years activities. They are now remarkably competent and proficient in performing their activities. In the final analysis, the Bangladesh stock market still has a long way to go. It is growing, but the pace needs to be faster. With the support from government and multilateral institutions for capacity building this market has every possibility to improve. We are yet to have in place several missing parts of the vital market infrastructure, and valuation and appropriate rules are essential segments of this expected infrastructure. So, it is easily to be felt that our stock market is growing and seems to have a very healthy shape in the coming days to come.

Recommendations for Regulatory Bodies of Stock Market:
Stock and Exchange Commission (SEC), in collaboration with other relevant agencies, can initiate several steps with a view to enhancing the confidence of the investors, increasing the quantity and variety of instruments, and improving the functioning of the market. Some of the measures to help in sustainable market condition and improved performance of stock market are as follows;

a) It is expected that stock market has its own nature and if regulatory body and respective parties perform their role perfectly then this unwarranted situation can be over. The SEC should protect investors’ interest and create an efficient market environment for issuers. It must employ more resourceful, competent and qualified people. The SEC may think of imposing a permanent policy for the margin ratio rather than frequent experiments. Merchant bankers and brokerage houses can organize regular awareness program for investors. They can also motivate investors to invest in fundamental based share and avoid
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rumors’ based investment. Besides, brokerage houses should stop comments about speculation of share price.
b) Government can improve its guidelines for stock market. At present there are more than 5000 garments in Bangladesh with strong financial background. These garments industries should be encouraged to be listed. A separate corporate bond market can be introduced. Less time-consuming compliances of numerous formalities, low cost of initial public equity offerings, elimination of double taxation will be helpful to equity market improvement.
c) SEC should initiate awareness, educational and promotional programs through institutional training for a vibrant market with active presence of issuers and investors
d) During downtrend, it has been observed that most of the general investors came to the street, show protest and then suddenly prices go up. This indicates the existence of syndicates and market manipulators in the stock market. Market experts believe that the bearish trend is a result of market correction. It is true that a correction is needed but it should be in a proper way. If the correction destroys the market and confidence of the investors then there is no need such type of correction.
e) Now, there is a fund Taka 50 billion open-ended mutual fund called Bangladesh Fund (BF). The timing of its floatation has not also been specified. In this context, the announcement about the fund is clearly purported to give a positive signal to the small investors about the joint efforts of seven state-owned financial institutions, including the Investment Corporation of Bangladesh (ICB), four commercial banks and two insurance companies, to help improve the demand-side situation in the country's stock market, in the midst of a turmoil, if not a collapse. Offloading this fund within a short period of time can make the stock market stable.
f) The regulatory body’s frequently changing policy and rules that is not good for the market stability. For example margin loan ratio. No stock market regulator in any country fixes loan margin ratio but that was done in Bangladesh.
g) As of now, enforcement powers of SEC are, after due enquiry and giving an opportunity to the violators to be heard, limited to cancellation or suspension of registration of market intermediaries, and imposition of penal measures which may involve levying of fines on or filing of cases in competent courts against issuers /market intermediaries. These are no legal provision for SEC to award compensation to shareholders or to file cases on behalf of shareholders. SEC is in the process of drafting amendments to the relevant laws so as to be able to better protect the interests of the shareholders.
h) A sound stock market requires depth with a wide range of products and instruments to cater to varying risk return liquidity preferences of investors and also to ensure that the adverse effects arising from disturbance in some part do not assume systemic proportions. In this regard, SEC, in collaboration with Bangladesh Bank had made long term government bonds tradable on stock exchanges. But, not much of trading has been actually taking place. SEC and Bangladesh Bank have formed a joint committee to suggest measures to activate trading in government bonds. Recently introduced asset backed stocks which are now being issued only on private placement basis need to be brought into the mainstream secondary market.
i) At the initial stages of stock market development, privatization of state owned enterprises can make a signification contribution. In Malaysia, for example, the Privatization Master Plan resulted in many governments linked firms being listed with Kuala Lumpur stock exchange. Seven largest firms listed with the exchange belong to this category. Government linked firms account for 34 per cent of total market stock capitalization. In Bangladesh also efforts are being made to progressively offload government shares through the stock exchanges.
j) A healthy stock market requires engagement of competent professionals by a wide range of market actors. Among the positions which require the services of people with adequate knowledge of the principles of corporate governance as well as security laws and regulations are the members of company boards, company secretaries, officials of the share departments of companies, authorized representatives of brokers, compliance officers of market intermediaries etc.
k) Regular TV and Radio program should be made on developments and other topics relating to the stock market to make the investors aware and also to train them up. It would help them to learn more about market fundamentals and technicalities.

Some long-term proposals for individual investor:

More than three million people are currently involved in the country's stock market. After the crash, most of them have lost 70 to 80 percent of their stock which brought them on to the street to demonstrate. Some long term proposals for individual investors are given below:

a) Stock market is not a quarry where one can come, dig and get the money out and become rich. It is a very sophisticated place where success depends on the very well thought- off and soundly analyzed investment decisions. After making the investment, the investors should wait for some time to get the result; but in our country most investors do not want to wait for long and they want the return immediately which is not possible. To see a better market in future, people should discard this type of attitude.
b) People like students, retired persons etc, should not come to this market, as they are dependent on their savings. A decision with marginal error can eat up their investment. Only people with sufficient savings who are also well informed about the market and do not hesitate to take risks, should come here and make investment. It is not a place for risk-averse people.
c) To influence investors to make long term investments, the government should introduce capital gains tax.
d) Investors should understand that a fundamental analysis includes three steps: economy analysis, industry analysis and company analysis. Often much importance is given to the company analysis. But investors should give emphasis
to the economy and industry as well. Good understanding of the state of the economy and stage of the industry will help investors generate useful insight about future price movement of a particular company’s stock.

VI. CONCLUSION

Bangladesh has a small but growing stock market in South Asia. However, the stock market of Bangladesh is still underdeveloped, in spite of recent initiatives. The size of the country’s stock market is quite small in relation to world’s developed stock markets. Bangladesh stock market is characterized by poor liquidity with high market concentration mainly due to the excessive dependence of corporate entities and banking sector. However, the government is making efforts to develop the reliability and efficiency of stock exchanges as investment market.

REFERENCES

A Review on Competitive Advantage and Multinational Applications of Generic Strategies

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Abstract – This paper explores to review how multinational companies can apply generic strategies so that they maintain competitive advantage. The generic strategies proffer a solution and remedy on how both multinational and domestic companies should compete in various markets by exploiting their competitive advantage. Organizations that manage businesses across national borders are known as international firms or multinational corporations while strategic management is the process of determining an organization based on long-term goals and objectives, then implementing action plans to achieve the goals. This paper is based on qualitative descriptive exploration with secondary data source. The main source is articles from various scholars. Systematic mapping study is being used to identify evidences that is available on the theory of generic strategies and its application on creating competitive advantages. This paper also will endeavor to identify and explain competitive advantage and the two generic strategies applicable in multinational companies. It will unpack the concepts of competitive advantage. Finally, it will justify why the generic strategies are key in the global markets. A number of multinational companies have failed to remain afloat and folded as a result of ignoring generic strategies in business.

Keywords – Competitive advantage, Multinational Company, Generic strategy, Leadership

I. INTRODUCTION

Multinational companies operate in a highly volatile global environment. The environment is characterized by competitive markets and rapid technological change. For a multinational company to remain relevant, profitable and with a long term success it must craft and adopt competitive strategies. According to [1] state that multinational organizations adopt and make use of the same strategies applied in domestic companies. Michael Porter a guru on competitive strategy, proposed two framework of generic business strategies that organizations use to gain a superior performance. The two generic strategies differentiation and low cost help both domestic and multinational companies cope with competitive forces in the market and achieve and sustain competitive advantage.

Every comparative company will always compete in one market. Strategies developed or planned by management team in multinational companies (MNCs) may have implicitly evolved through various functional managerial department. In this era of globalization, multinational organizations are not spared from competition with each other, notwithstanding that domestic, global or operating companies in manufacturing processes or service-based companies. To improve competitiveness, companies must implement strategies to win the competition. There are several strategies that can be implemented to increase competitiveness and it will further discussed in this study. This paper is going to focus on the competitive advantage and multinational application of generic strategies. The purpose of this paper is to understand more on concept of competitive advantage, generic strategies and its application in multinational companies. The method that had been used to complete this paper was content analysis method and systematic mapping study.

II. LITERATURE REVIEW

A number of scholars have contributed to the role of strategy in multinational management. Most of the scholars are in consensus on the need for strategy for any organization to succeed. According to [2] emphasizes on competitive strategy for a company to be successful whilst the Russian born mathematician and economist According to [3] preaches corporate strategies where he emphasize on the growth of a company’s market. On the other hand, according to [4] emphasize on the need to observe markets behavior and avoid repetition hence the development of the four basis strategies. The authors prove the importance of strategy in any business venture. According to [5] further supports the issue of strategy as key to sustainable competitive advantage in multinational companies. This basically prove that strategy researchers believe that both multinational and domestic companies should efficiently and effectively use available resources to enable it to achieve competitive advantage.

A number of scholars have examined [2] generic studies and have concluded that both multinational and domestic companies that followed differentiation and low cost strategies performed fairly well. According to [6] supported by Gopalakrishna postulate that organizations that competes with generic strategies have a higher return on investments. According to [7] highlights that low cost strategy and differentiation improves quality performance. The author however highlighted that the effects of differentiation were overcome by low cost strategy.

One of the literature that had been used was from [8]. In the article, [8] analyzed extensive literature from various scholar to explore more on competitive advantage. The main objective of their research is to analyze the factors
behind competitive advantages and reconnect the relation of competitive advantage with resources, capabilities and core competencies of the organization. Based on the study, it was found out that MNCs need to exploit and understand their sources of competitive advantages such as organizational structure, human resources and technology in order to include themselves in competing with other MNCs. It was also stated that each generic source that available for competitive advantage can work together in creating competitive advantages for an organization and this does support the concept of competitive advantage where each and every source that available in the MNCs matter as they will contribute values in creating competitive advantage and later on, affecting on performances of the company itself.

The role of competition of the strategic management in Multinational Companies (MNC) has attributed significant factors in the business environment as globally; for example, the specified progress in the rate of change in corporate bodies of multinational companies (MNC); and the specified progress of science and technology to the management process. The rapidly changed occurred led to the capability to be proactive in an attempt to avert threats to the firms, to anticipate change and to take advantage of modern opportunities. Interests and acceptance are as a result of new technology on explicit and analytic approaches in order to make decisions that lead to increase in the ability of the management in dealing with increasing competition in the future [9].

III. METHODOLOGY

The writing of this paper is based on qualitative descriptive exploration with secondary data source. The main source is articles from various scholars. Systematic mapping study is being used to identify evidences that is available on the theory of generic strategies and its application on creating competitive advantages. Organizations that manage businesses across national borders are known as international firms or multinational corporations while strategic management is the process of determining an organization based on long-term goals and objectives, then implementing action plans to achieve the goals. The concepts are further discussed in the subtopics written in this paper.

Competitive strategies can be defined as a distinguished method applied by a firm or intended to be applied by a firm in order to have a successful market. Many scholars have different applied the approach in evaluating the idea of competitive strategies; however, Michael Porter has done the main research in the field [10].

Competitive dominance should be achieved by competitive strategies. It is believed that competitive dominance is a concept that starts with the acceptance that long-term success is not guaranteed by leadership especially in a place of global market. A framework is provide by the competitive strategies for the firm to tackle different kind of problem existing in the operating environment of the firm. Similarly, competitive strategies are developed by the multinational companies (MNC) to allow them to sustain competitive advantage and design strategic initiative in the market [11].

IV. RESULTS

A. Competitive Advantage

Whilst strategy seeks to determine two issues where you want the business to go and how to get there, competitive advantage is determined to outdo a competitor in business. Competitive advantage should be a by-product that a company creates for its customers that exceeds the company’s cost of producing it. According to [1] state that competitive advantage seeks to provide a better and greater value to its consumers and outdo its competitor in attracting, maintaining and sustaining its targeted clientele. The value comes in the form of low prices or providing extra ordinary quality services that justify and in tandem with the higher prices charged. It is prudent that a competitive advantage strategy must not be within reach of imitation by competitors.

Cost leadership and differentiation are the two basic types of competitive advantage. According to [1] postulate that both domestic and multinational companies can out maneuver its competitors by seeking sources of lower cost or differentiation in its value chain. Competitive advantage could be sourced in both primary and support activities with the value chain. The competitive advantage ranges from sourcing of raw material, production, sales and after sale. Competitive advantage could also be in the form of cheap raw material and cheap labor for example many of the software multinational companies utilize the many quality engineers in Singapore or India.

The value chain in both domestic and international companies can be used to identify areas to create value for its clients. Value chain is basically all the activities undertaken by both domestic and multinational companies to design, produce, market, deliver and support its output. It is the value that the firm produces which determines what customers will ultimately pay for the commodity. According to [2] subdivides the value chain into two distinct categories the primary and support services. Primary activities depicts the physical actions of design, manufacturing, selling and after sales. Primary activities are further divided to down and upstream. Research and development and dealing with suppliers is an early activity in the upstream whilst later activities as sales after sales fall in the downstream. Support activities focus on human resources, organizational design and control and a company’s basic technology. Figure 1 shows a value chain where a multinational company can find a source for differentiation or low cost.
The basis for competitive advantage are captured in the Five Forces diagram. The diagram depicts Porter’s thoughts of competitive advantage as the basically illustrates the rules and regulations of the global market competition. According to [12] postulates that the end result of competitive advantage is to adapt with and ideally change the rules in a company’s behavior. Thus the five forces framework determine a company’s profitability by providing a platform to global managers on the key result areas for a durable competitive advantage. It is however important to analysis the market and identify key drivers as compared to merely composing a list of forces in the competitive environment. The five forces framework need to be taken as a guide and reminder of the various likely sources for what the driving forces could be.

Sustenance of competitive advantage is key in both domestic and multinational companies. According to [1] state that for an organization to have a long term profit, its generic strategies must be sustainable. Sustainable refers to strategies that are full proof and would not easily budge to attacks by rival competitors. Strategies therefore should resist attack from competitors and [13] outlines three conditions for sustenance of competitive advantage. On the other end [1] state that there are four characteristics to sustaining competitive advantage. The bottom line is that for competitive advantage to be maintained there is need for value capabilities, rare capabilities that competitor might not possess, difficult to imitate due to a number of distinct sources, non-substitutable and constant improvement and upgrading.

V. DISCUSSION

A. Application of Generic Strategies

Generic strategies are basic ways that assist both domestic and multinational companies to achieve, keep and sustain competitive advantage. According to [1] refers to generic strategies as the alpha and omega of an organization that seek to achieve a lasting position in its business. According to [14] state that generic strategy is broad and can create competitive advantage for any organization regardless of type and size. A generic strategy takes advantage of economies of scale for business to be competitive. According to [2] identifies differentiation and low cost as the two primary generic strategies that both domestic and multinational companies uphold to gain competitive advantage. Most domestic and multinational companies pursue only one generic strategies, whilst those that pursue both by bringing in a differentiated product at a low cost succeed for a short period of term due to a clash of interest in the long run. Based on the principle, Porter stated that there are 3 principles of generic strategic, namely the Low-Cost Leadership Strategy, Differentiation, and Focus and the concepts will be elaborated as following:

**Cost Leadership Strategy:** This strategy, the best profits are enjoyed by a firm that produces products and services at the lowest cost. Lower cost production is a strategy employed by many firms in order to achieve a cost-benefit significantly from the competition of the market. Additionally, in the market share, growth is achieved to this effect. In most cases, this strategy is linked with large-scale business providing standardized products that are distinctively differed from other competitors that target a wider set of customers. In any market, the low-cost leaders achieved competitive advantage from being capable to get
lower cost products, and for many labors are trained and recruited while the factory is constructed and maintained in order to deliver production to the bearable cost. The focus is the cost advantage; every single element of the chain value is shaven off by the cost. Product tends to be no frill. Low price however is not always achieved by low cost. Producer can be exploring the advantages of a wider margin and can price at competitive parity than the competitors. Nissan as an example of an organization have the marketing skills and brand to use a policy of premium pricing; the interesting thing is that the company is very good at producing high quality autos. Lowering the overall costs than the competitors, this is what we can call a low cost leadership’s concept in competitive advantage. There are nothing new in the need to manage costs. However, a quite number of firms are surprisingly surviving to control successfully the operations expended over time. According to [15] reported that to discovering a way to drive a cost out of business is an exceptionally good character of successful low-cost leaders.

**Differentiation Strategy:** The customers’ needs are satisfied by the differentiated services and goods by a reliable competitive advantage. Due to this companies can focus on values that lead to better margin and comparatively higher price and to desensitize prices. Producers are required by the advantages of differentiation in order to target good and service as a particular sector leading to more than average price. For instance, the services of the British Airways are differentiated, in the creation of competitive advantage, additional costs are incurred by the differentiating organization [16].

According to [17] increment in the revenue can be used to offset the costs by the sales. Recovery of the cost is important. It is also possible for any competitor to copy any differentiation. There is therefore, remuneration to continuous improvement and innovation. To provide for the need of the customers, focusing on a smaller market sector is a strategy broadly applied in corporate sense. It comprises identifying the customers’ need in the market and developing product that can sustain their need. Differentiation can be pursued by many companies from different point of view. Notably, it may be found by the firms to produce a similar and distinctive product to enter an industry.

The purpose of differentiation is developing a company’s uniqueness. It endeavors to find ways to provide a unique value to its clientele. According to [1] suggest that domestic and multinational companies that adopt differentiation strategy always find ways to provide superior value in the market. According to [18] postulates that there are many ways and dimensions on how an organization can differentiate itself from its competitors. The differentiation superior value comes from unique product features, design, brand image, technological features or high quality service and business charge a premium for its goods and services. By developing the unique features [2] postulates that the business will be trying to be totally differentiated from all other rivals. Example of business entities who have used the differentiation strategy include Nike athletic shoes, BMW, Mercedes Benz, Apple Computer and Caterpillar who also offer after sales service for their high quality machinery.

**Cost Focus Strategy:** In the corporate world, it can be an acceptable strategy by lowering cost benefit into segment of the market sector with making basic services to a higher priced market leader. This is also can be lead to same products in the market to more higher pricing products which can be surely accepted, and can result the satisfaction of the customers. Securing the competitive advantage is the main aim of focus strategy based on low cost by satisfying the customers in the target market niche than the rival competitors at a lower price. When a company can significantly lower its cost, the strategy has a considerable attraction by reducing the base of the customers to a well-defined segment of buyers. Strategies of focus low cost are very popular and common in the market [19].

Low cost strategy is the conceptually simplest strategy that emphasizes on company efficiency for it to able to produce or distribute commodities at a lower cost than its rivals within the global market. According to [12] defines low cost strategy as trading standard products combined with aggressive pricing. It is a strategy to achieve competitive advantage through reducing and controlling costs. Low cost strategy can be achieved through economies of scale, control of administrative costs and technology. According to [20] and [21] postulate that low cost strategy just like the differentiation strategy seeks to process the value chain in the best economic sense and produce a high quality product at a low cost. A company that decides to follow a cost leadership strategy has the objective of being able to realize its offer at lowest possible cost. The competitive advantage of cost leadership is achieved by performing important value chain activities at lower cost than a competitor.

Low cost strategies is more suitable in developing countries. According to [22] supports the notion that developing countries such as China, Malaysia and Indonesia are more suitable to low cost strategy due to the availability of cheap labor. A cheap labor force will reduce production cost without interference and reduction on quality. Against this background an organization will be
able to produce numbers of quality commodities with it taking advantage of the economies of scale. Therefore the product will be produced at a relevant lower prices and made available to a large customer base.

According to [23] highlights that low cost strategy is competitor based as compared to being customer orientated. A domestic or multinational company engaged in low cost strategy needs a bigger focus on the supply chain as compared to the market demand. It is prudent therefore to continuously benchmark against rivals. According to [24] emphasize that in low cost strategy companies need to pursue cost reduction measures on overhead expenses, in research and development as well as marketing. Toyota Company in Japan is a good example of an organization that successfully adopted low cost strategy.

Low cost strategy need to be maintained by an organization. Maintaining this strategy calls for a nonstop cost reduction measures in both the primary and support activities of the value chain. A vigorous marketing and extensive distribution of products ensures a success of the strategy. Access to cheaper raw material, labor and any other inputs is key to maintaining the comparative advantage. However it is envisaged that due to global competition, the future is bleak for this strategy as production cost and overheads are likely to increase.

**Differentiation Focus Strategy:** The aim of any business is to differentiate between a number and one of the segments of the target market. The special needs of the customer of any segment imply the chances that give the firms’ product which are obviously distinct from the other competitors that might want to explore wider number of customers. Thus, the different needs of the customers are demanded to be given recognition. Porter’s Generic Strategies underscores that a company stands more chance of attaining sustainable competitive advantage if only the company makes an unwavering strong very hard work to any kind of this strategy, while such strategy can be properly delivered and executed [25].

It has been questioned by many scholars and there is a claim that between strategies, there is sustainable ground. For example, many companies have expanded gradually by entering as a niche player. As differentiation could be a way to achieve low cost, the model of porter is faulted by [26].

An integration of low cost and differentiation was proposed by Hill as it might be needed for the firm to achieve a sustainable competitive gains [27].

Additionally, there another main strategies which are essential; Joint venture has gradually become a widespread phenomenon in today’s global market and through integration such as joint venturing; many multinational corporations have managed to achieve sufficient growth. In order to explore the competencies of each other to achieve competitive advantage, many companies have gathered to work together from different cultures and background. The parties involved from the both sides have to share pool skills, knowledge, responsibilities, joint management, mix employees, assets and ownership once they involved in joint venture [28].

Several firms have been supported with the process of joint venture to facilitate new idea development and enter inaccessible markets with contribution towards methods that prevail the industry and changing the conventional structure. The knowledge of international joint has been wholeheartedly accepted by the business world as a result of rapid changing in the international markets and this is considered today as an instrument for rapid sustainability and growth in the market.

**VI. CONCLUSION**

Competitive advantage occurs when a company outsmarts its competitor in the market. Generic strategy gives a competitive advantage over rivals in business. Multinational companies that adopt generic strategy have posted excellent and positive performances. A company must make a clear choice and adopt one of the generic strategies of low cost or differentiation. Companies that have decided to adopt a hybrid strategies that is taking the two are still in quandary in the middle whilst those who have adopted one only have been successful. Each company should adopt a strategy that best suits its business. It is important for a company to fit its generic strategy within the value chain and sustain its competitive advantage. A differentiation strategy generates more profit than a low cost strategy. Low cost strategy generates an increase in market share.

The procedure of bringing a more stable competitive advantage is very challenging. This can be included the basic knowledge of basing the resources available. There also some different mechanisms which require to be thought of during the processing of this endeavor of competitive advantage. The significance of the competitive advantage is that it offers the firms a permanent maintenance at a certain level and advancing the continuation of the service in a stable approach within the market. This can result advantageous desirable benefits and can give the firms’ manager to be an aware in any changes. This also certain for the company to reach its dreams.

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A Study on Multi-Dimensional Supply Chain Performance Measurement (SCMP) Models in Manufacturing Industries and Way Forward

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Abstract – Supply chain management is being envisaged as an extended enterprise connecting business in several places and facilitating allies to propel competitive advantage within the era of globalization. Substantial analysis has been undertaken at the side of literatures on offer chain performance management from value and non-cost stance, strategic, practical or stress on operational aspects views from business as well as financial arenas. In order to gratify customer orders rapidly and efficiently than competitors, supply chain needs to warrant continuous upgradation of its processes and competitive strategies and to apprehend how supply chain contests? it is indispensable to comprehend the performance of the availability chain. The importance of modeling and development of the supply chain has been recognized as one of the competitiveness strategies of scientific research. However, much of the work done focuses on the design of models and development of the supply chain in developed countries, with less concern for its partners in developing countries. In the developing countries, the manufacturing industry was a fierce competition for its products and, consequently, the loss of market share. The Supply Chain Operations Reference (SCOR) provides a description of supply chain processes, performance indicators, best practices and licensing technologies. It offers a comprehensive approach to improve supply chain operations. It was designed by the Supply Chain Council (SCC). This article presents a review of the literature of the materials published so far in relation to the adaptation of the SCOR model.

Keywords – Supply Chain Management (SCM), Supply Chain Operations Reference (SCOR), Supply Chain Council (SCC).

INTRODUCTION

Originated by Supply Chain Council (SCC) to support organizations to increase their effectiveness, business process reference model is indispensable for a company to examine the overall supply chain strategically and to determine its strong as well as its fragile linkage that displays a path for improvement. The objective of the SCOR model designed to regulate a terminology and procedure to benchmark organizations supply chain parameters [29]. These parameters are inter-connected to the bottom-line of the organization performance and it reflects on companies’ financial statements. The mechanism of SCOR model that assimilates as a process to re-engineer and to benchmark cross functional that stretches from supplier’s supplier, up to the end consumer and voyage through each stage of the supply chain. The SCOR model was designed and established by the SCC to stimulate firms in increasing the effectiveness of their SCs, and to deliver a process-based method to SCM. The SCOR model stipulates a common route and uniform vocabulary among the partners in the supply chain community in the following decision areas: PLAN, SOURCE, MAKE, and DELIVER. SCOR model has been designed as an instrument to define, measure and appraise any supply-chain configuration. There are 12 performance matrices as part of the SCOR model to measure process performance [30].

Fig 5: SCOR Model [29]

The performance measurement clustered are:

(i). Delivery reliability
(ii). Flexibility and responsiveness
(iii). Costs
(iv). Assets

LITERATURE REVIEW

The Chain of the SCOR developed production chain is a reference model, a diagnostic tool for the management of the supply chain. In 1997, the Supply Chain Council presented the first version of the SCOR model. Metrics, best practices and technology, with the cadence of supply, design, manufacture, source and transport (Phelps, 2006, Galazzo, N. 2006, Magnusson,
The SCOR model consists of five basic processes: Plan (P), Source (S), Make (M), Deliver (D) and Return (R). SCOR's modeling approach is based on the assumption that the process of any supply chain can be represented by a combination of processes P, S, M, D and R. The Plan provides a balance to meet the most demanding requirements of Supply and demand, manufacturing and delivery. The SCOR model contains three levels of detail in the process. Level 1 is the highest level that deals with the types of process. This determines the scope of the supply chain. Level 2 is the configuration level that deals with the process categories. Level 3 is the level of the process element and the lowest level in the SCOR model.

Table 1 shows the process definition of the SCOR model at level 1. Paste Table 1 MIDC tries to accelerate and improve its performance to produce better products and provide services. To achieve this goal, industrial organizations strive to optimize processes in the supply chain. Companies in developing countries need to improve their performance by performing performance measurement systems. Therefore, performance measurement systems must be considered a critical element in transforming the strategy of the supply chain into action. Research is needed to tailor performance measurement in the context of developing countries to meet their environmental and local factors.

Challenges of SCOR adaptation in developing countries

Supply chain management within a country is complicated due to the various uncertainties of demand, supply and process. In the most advanced countries, there is limited uncertainty to satisfy all basic needs, such as power, communication of information and technology (ICT), roads, water, etc. However, in developing countries, infrastructure is weaker and many new countries face new challenges. You may have succeeded with proven strategies and models that have failed in advanced economies. The classic example is Wal-Mart (Han et al., 2002), which has effective cross-transit facilities in the United States that puts a minimum inventory at the same time and allows suppliers to go to retail outlets. When Wal-Mart came into operation in South America (Brazil) and Korea, it was very difficult to operate a logistics system based on such coupling devices and adjust its focus. Wal-Mart faced great challenges with timely delivery and took the products to the shelves for their customers. Timely delivery of goods is an ideal concept in Sao Paulo's excellent traffic, for example, in Seoul, where Wal-Mart relies on suppliers or contracted trucks to send most of its merchandise directly to warehouses. As a result, Wal-Mart started operating in 1995 (Simchi-Levi, Kaminsky, & Simchi-Levi, 1999). In addition, he faced challenges in establishing a collaborating partner, since manufacturers and retailers did not cooperate with Korea because of their distrust. Therefore, supply chains in developing countries often make it necessary for companies to allow the

<table>
<thead>
<tr>
<th>SCOR Process</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Plan</td>
<td>Processes include gathering customer requirements, collecting information on available resources, and balancing requirements and resources to determine planned capabilities and resource gaps.</td>
</tr>
<tr>
<td>Source</td>
<td>Process describe the ordering or scheduling and receipt of goods and service.</td>
</tr>
<tr>
<td>Make</td>
<td>Process describe the activities associated with the conversion of materials or creation of the content of services.</td>
</tr>
<tr>
<td>Deliver</td>
<td>Process describe the activities associated with the conversion of materials or creation of the content for services.</td>
</tr>
<tr>
<td>Return</td>
<td>Process describe the activities associated with the reverse flow of goods back from the customer.</td>
</tr>
</tbody>
</table>

Table 1 Process of SCORE model
restructuring of existing strategies or models or the development of new ones for the environment (Han L., 2007 and Han, 2002).

In the most advanced countries, companies successfully apply the SCOR model to its components: business processes, key performance indicators, best practices and relevant technology (Phelps, T. 2006). However, the SCOR model is not a magic tool; It is somewhat cumbersome, ingenious and takes a long time to manufacture the SCOR model in the manufacturing industry. In economically developed countries, such as the USA, EU and the EU, the manufacturing industries are well designed and offer an exceptional infrastructure that, in turn, allows the smooth delivery of information and physical products to suppliers, manufacturers and customers.

The lack of a well-developed infrastructure, which is a prerequisite for successful operation and improvement of the supply chain, puts additional pressure on the implementation of the SCOR model. This condition is difficult to synchronize demand and supply. This results in the supply chain not functioning, which generally results in an accumulation of inventory along the supply chain (Andel, 1996, Andreoli, 1995, Davis, 1995). Craighead and Shaw (2003) argue that the performance of the supply chain depends on multiple capacities: SC connectivity, manufacturing capabilities, ICT capabilities and operational capabilities. These four options, in addition to the desire of the final customer, create and accumulate the value of the sales chain. The manufacturing industry of developed countries is well-founded and the status of the four-capacity SCOR model was successfully implemented. Almost all manufacturing industries in developing countries have very low CS and production capacities, information and communication technologies, and very low and limited operational capacities.

Other important obstacles are related to poor support infrastructure in developing countries. This infrastructure leads to unresolved problems due to delays in delivery and shortage of materials. Magder (2005) highlighted this problem by researching the Egyptian garment industry, highlighting the need to improve the country's support infrastructure to expand the proportion of export industries such as clothing, fresh food and flowers. This is the most important obstacle facing industries in the developing industry.

Adapting SCOR Model to Different Scenarios

Despite the fact that the SCOR model is designed and applied by the manufacturing industry, identified by the limitations and shortcomings, research and achievements of different professionals and academics, the model can be extended to further enhance SCOR to improve its importance proven practice. In the SCOR model, research material is found in the manufacturing environment. Fronia et al. (2009) have shown how SCOR can be extended to develop a design framework for the supply chain. The researcher has six standardized Proposed Process Models for the process level of origin 2. Compared to those with native SCOR, these models show that they are beneficial, even that they differentiate between the different acquisition modes. Obviously (see Figure 4). In turn, it is shown that two models have been detailed at the SCOR level in levels 3 and 4. The models and frameworks mentioned above can be used to collect the appropriate data for the cost of the procedure and the cost of social capital in a structured manner, and simple. This step will also serve as the basis for the next section of the supply chain. More analysis of logistics performance indicators. This predominantly in the configuration of the supply chain Encourages the evaluation of the overall performance of the supply chain and the impact of strategic logistics measures.

The population has to satisfy many needs. Colloidal conflicts must be resolved to maximize the market value of the companies, since the decision field is very complex. The existing methods still contain useful information to solve, or at least in part, the problem of the decision. However, numerous companies of the German companies Wriggers et al. (2009) found that a decision support system for optimization problems is easy to use. This study describes the procurement support scheme that has been used successfully to address the problem, as the basis for the adaptation of SCOR. Hwang et al. (2008) identified the critical supply chain indicators for Taiwan's thin-film transistor liquid crystal (TFT-LCD) with SCOR V.7.Model. Although the study focuses on the process of source management, the other four management processes are also taken into account. There are no extensions for this model. Based on the SCOR model, Ren, et al. (2006) provides a comprehensive framework for SC performance management, which includes all aspects of performance management, from performance measurement to performance development. It focuses mainly on performance modeling and performance analysis. The framework can be used to diagnose the supply chain, transform the supply chain and explore the operational mechanisms of the supply chain. It can also be used as a guide for the design of business applications, for example. The business performance management system (BPMS).

Desodt et al. (2007) brought together the supply chains of the textile and garment industry to model the supply chain. Then, using these performance data, important variables were identified and endogenous and exogenous relationships between the variables were examined. The SCOR model had to adapt to the study.
The study, conducted by Han et al. (2007) integrates the concept of supply chain, cooperative product and SCOR to propose CSCOR for the life cycle of the product. This model consists of four hierarchical levels: a cooperative business model; cooperation model cooperation; collaborative process model; and a collaborative operational model. Based on Project Management (PM), CSCOR includes five main processes, resource, production, delivery, and return plans. This study also assesses the efficiency of CSCOR with the use of China’s regional manufacturing industry. The contribution of this study is to extend the SCOR model to the CSCOR proposal and create a supply chain of reference models of universal application. This study also applies to CSCOR and provides a system for the electronics industry that provides examples of a supply chain that collaborates with customers, manufacturers, contractors and suppliers.

RESEARCH METHODOLOGY

Comprehensive overview on supply chain performance measurement (SCPM) practice is investigated through reviewing widespread research papers and conference papers have been appraised from international journals such as PROQUEST, EMERALD, EBSCO, IEEE, ACM, JSTOR etc. Meanwhile few interviews were conducted amongst senior executives to understand their experience and the challenge faced while implementing the BSC model.

DISCUSSIONS

This study depicts the SCOR model comprised of five components: Plan, Source, Make, Deliver and Return. The component Plan balances the resources in order to establish and meet the requirements of a supply chain and its source, production, delivery, and return activities. The component Source includes processes that manage the procurement, delivery, receipt, and transfer of raw material items, subassemblies, products, and services. The component Make includes processes that transform products into a finished state. The component Deliver includes processes that provide finished goods and services, including order management, transportation management, and distribution management. And the component Return includes post-delivery customer support and processes that are associated with returning or receiving returned products. Each of these components is considered both an important intra-organizational function and a process. This framework can be viewed as a strategic tool for describing, communicating, implementing, controlling, and measuring complex supply chain processes to achieve good performance. The SCOR-model specifies five performance metrics in two categories: customer-facing metrics that include reliability, responsiveness, flexibility, and the internal-facing metrics that includes cost and assets. Each of the performance attributes contains a set of metrics.

Supply Chain Performance Measurement Model

This exploratory study classifies a model where SCOR, input-process, and output model are deep-rooted with strategic, planning and operational level decisions into each stage of supplier relationship management (SRM), international supply chain management (ISCM) and customer relationship management (CRM). In addition to that, the six drivers of the supply chain beefed-up with decision alternatives be it responsive supply chain or be it an efficient supply chain, discussed in the literature review have been penetrated and glued into the whole decision-making process in order to shadow the comprehensibility [25; 26].

Supplier Relationship Management (SRM) and Supplied Inputs

In the conceptual model, the researcher classified supplier relationship management (SRM) where the focus was on supplier as well as supplier’s supplier in order the supplier to supply all types of materials such as raw, packaging, semi-finished or finished component materials which are considered as supplied inputs. Supplied inputs will be transported through inbound logistics services at the factory premises.

Internal Supply Chain Management (ISCM) and Core Process
In the conceptual model, the researcher classified internal supply chain management (ISCM) which are considered as a core process, where the focus is on internal purchase, production, and distribution of goods from inbound logistics to outbound logistics. The purchase function focuses on the internal procurement which is seamlessly connected through the factory production as well as the distribution in order to ensure the raw materials to bring in time to the manufacturing site and to bring out the finished goods from the manufacturing site to the end customers. The commercial activities such as clearing & forwarding (C&F), freight forwarding (FF), customs, port terminal, inbound and outbound logistics are closely knitted through this process.

Customer Relationship Management (CRM) and Supplied Outputs

In the conceptual model, the researcher identified customer relationship management (CRM) which are considered as a customer as well as customer’s customer who will consume the finished goods deals with supplied outputs for different customers internally as well as externally.

Supply Chain Performance Measurement Model

This exploratory study classifies a model where the balanced scorecard (BSC) model is amalgamated where financial, process, learning & development; and finally, customer-centric issues are to be considered along with the model at phase 02.

- Training and development, capacity building are also excluded in the SCOR scope
- No clear interaction of inter and intra organizational or functional activities

Limitations of BSC

BSC does not consider leadership and employee capacity building aspects in its model. It also failed to address employee motivation, employee engagement and team building issues etc. (Thakkar et al., 2009; Kurien et al., 2011; Saleheen et., 2018). BSC does not consider recent global issues such as continuous improvement issues (Taticchi et al., 2010), sustainability and green supply chain issues in the business, society and environment (Cagnazzo, et al., 2010); Wanger, 2007). (Thomas, 2003) mentioned that agility issues to remain competitive, (Cagnazzo, et al., 2010) mentioned on business resilience factors in order to avoid risk and disasters (Cagnazzo, et al., 2010), government regulation issues for borderless business economy, uncertainty factors in the dynamic economy, collaboration and visibility factors (Cagnazzo, et al., 2010) to ensure seamless operations from supplier, manufacturer, distributor and customer and finally future business trends and market competitions perspectives etc. (Kurien et al., 2011; Tangen, 2004; Taticchi et al., 2010; Saleheen et., 2018) BSC is devised as a monitoring and controlling tool for strategic level instead of tactical or operational level and it is challenging to construct comparisons within and across firms. It also delivers little guidance on how the appropriate measures can be identified to manage business. (Kurien et al., 2011; Tangen, 2004; Taticchi et al., 2010; Saleheen et., 2018).

Future research

Future study is recommended to design a comprehensive model and performance measurement attributes to overcome the constrains and limitations where BSC completely failed to address in order to bridge the constrains in the academic as well as in the industry (Saleheen et., 2017, 2018)

Contribution

This study unlocks the frontier, particularly model development for the perspective researches in the area of supply chain performance measurement (Saleheen et., 2017, 2018).

CONCLUSION

In past two decades since the commencement of BSC model, it is now broadly acknowledged across all industrial sectors, from manufacturing to service industries, from large to small businesses and from public to private projects. The strengths of the BSC model is integrating three non-financial metrics – customer, internal process, and learning and growth – with the traditional financial metrics. The common practices of the BSC are performance measurement,
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strategic management and project management. The benefits of the BSC include overcoming inadequacies of the traditional financial-based performance measurement tools, providing a holistic performance outlook, transforming strategy into a tangible performance measures, aligning organizational activities to strategy and providing a deeper insight into business operations and ways of creating value. Simultaneously, a handful of companies have been gone through uphill challenges and required extensive modifications in order to implement it in their operations. The BSC model could not distinctly explain the correlation with organizational performance and the objectives, the description of measures also eliminate key stakeholders, the definition of key success factors that necessary in order to identify KPIs is also not elaborated and the four categories of the BSC restricts the view of the organization perception as well. In practice, the BSC concentrates its resource to attain its objectives towards optimizing organizational potential beyond the targets of the BSC; it also ignores inter-organizational innovation; perceives an organization has already hierarchical structures, job responsibilities are also defined and organization has one-way linear cause-and-effect relationships. These constraints hinder the effectiveness of the BSC and fuels the organizations to reevaluate the ultimate use and gives a second thought whether to abandon the BSC altogether for better alternatives (Kraaijenbrink, 2015; Saleheen et., 2017)

REFERENCE


Lessons from the IL&FS Financial Crisis

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Abstract – India’s leading infrastructure development and financial services company - Infrastructure Leasing & Financial Services (IL&FS) and its subsidiary companies failed to repay multiple debt obligations and thereby started to default in mid-2018. This caused panic in the Indian debt market creating a cascading effect on other financial services, particularly in the NBFC sector. Government of India and the monetary regulator – the Reserve Bank of India (RBI) quickly stepped in to rescue the company. Rejecting a blanket bailout solution, but considering the “too big to fail” size of the company, they took timely action barely avoiding a total financial collapse. This meant that India avoided a ‘Lehman Brothers moment’. This paper explores reasons leading to the crisis, steps taken by Government and regulators to rescue, consequences of the default and lessons learnt from the experience. While Indian experience in large-scale financial defaults is limited, this paper takes the opportunity to understand the problem and post-crisis handling. Learnings from this study can help strengthen regulatory provisions so that these do not recur, minimize the trouble from spreading to other financial segments of the economy and possibly protect the vulnerable company stakeholders such as creditors, investors etc.

Keywords – financial crisis, credit default, default risk, liquidity, nbfc, ilfs

JEL Classification - G01, G14, G18, G33

I. INTRODUCTION

Credit deployment growth rate of Indian Non-Banking Finance Companies (NBFC) has surpassed that of the banking sector in FY17 [7]. In terms of credit flow, NBFC is now no longer a complementary but an alternative to the banking sector. With 11,402 NBFCs and a combined balance sheet size of Rs 22.1 trillion, 249 of them classified as ‘Systemically Important Non-Degposit Accepting NBFCs’ (NBFCs-ND-SI) as per Reserve Bank of India (RBI), the NBFC is a diversified universe within itself.

Liquidity in the formal economy increased after the 2016 Indian currency demonetization. NBFCs who were till then depending on banks for borrowing switched to debt market instruments such as non-convertible debentures (NCDs) and commercial papers (CPs). Used for short term borrowing, these are available at attractive rates and used to get rolled over upon maturity. In the middle of 2018, a sense of trust-deficit started building in the global economy. The US hardened interest rates, crude prices raised and Indian Government bonds gave sharp spike in yields.

Registered as a RBI Core Investment Company, Infrastructure Leasing & Financial Services (IL&FS) is a leading infrastructure development and financial services company. With a huge geographic and sectoral diversity and often working closely on Government projects, IL&FS is no less sort of a ‘shadow bank’. Over the months following June 2018, various businesses of the IL&FS group were unable to repay their debt obligations and have defaulted on multiple occasions causing panic in the Indian economy. The company had a whopping aggregate external principal fund-based outstanding of Rs 94,215 crores and non-fund based outstanding of Rs 5,138 crores.

This study attempts to find the reasons for the collapse, understand the immediate financial implications and observe how various stakeholders reacted.

II. METHODOLOGY

Descriptive research methodology is followed to gather preliminary information from secondary data sources, observe the developments happening, record the events and describe immediate possible consequences.

III. RESULTS

1. NBFCs are exceedingly leveraged and over-dependent on borrowings from commercial banks and mutual funds.

2. Regulation strengthening and stringent prudential norms by various regulators (RBI, IRDA, PFRDA, SEBI etc.) is necessary.

3. Considering the huge number of participants and their heterogeneous nature of the sector, separate sub-sector level regulations need to be enforced.

4. A comprehensive data compilation for the NBFC sector is necessary. A data repository has to be developed and institutional disclosures and standardized financial reporting be insisted.

5. Though short-term liquidity issues are taken care, mid and long-term needs are to be addressed as well, for
example, by allowed by increased the corporate bond limits.

IV. DISCUSSION

A. NEED FOR STUDY

1. IL&FS fell into unmanageable leverage trap because of mismanagement. This makes it one of the biggest and most watched financial crises in India and will have far fetching economic consequences if not handled properly.

2. IL&FS raised money from diversified debt instruments from different sources such as Nationalized Banks (38%), NCDs (27%), Other Banks (10%), Financial Institutions (10%), Foreign Banks (6%), Commercial Paper (3%) and hence will have implications across the board within the debt segment.

3. With Rs 8.3 trillion in retail credit assets (as of Sep 2018) and registering a 25% YoY growth in H1FY19, the NBFC sector is a very important for the Indian economy. Banking, Insurance and Mutual Fund sectors have direct or indirect exposure to it. Any turbulence in NBFC sector will cause panic in other sectors and thereby trigger a domino effect. Despite RBI and Government actively managing the issue, the situation is posing a question: Is there a systemic risk in the Indian financial system because of NBFCs?

B. LITERATURE STUDY

Simpler regulations after the 1991 liberalization led to the Indian NBFC revolution. They evolved from being informally governed into well-regulated and changing with times – by adopting technology, innovation and risk management [1]. The two critical decisions for an NBFC are – its capital structure and the prevailing regulations [5].

A risk assessment model [3] in which various types of risks (liquidity risk, operations risk, credit risk, market risk and quality of information) are weighted is of great use in evaluating them. No-action letters and several other proposals were made to understand (and avoid) NBFCs from posing systemic risk [4].

Though financial frauds, scandals and mismanagements are not new to India, large scale instances are handful few. Unfortunately, such instances are gradually increasing over the years. The Punjab National Bank Scam (Rs 13600 cr) and Saradha Group financial scandal (Rs 2500 cr) are of notable mention. If Satyam fraud is considered the Indian Enron, this IL&FS episode comes close to becoming an India’s own Lehman Brothers’.

C. THE IL&FS CRISIS

The IL&FS group has a complex business structure comprising subsidiaries, joint ventures / jointly controlled assets, associates and joint control operations under 347 verticals. LIC (25%), Orix Corp, Japan (24%), Abu Dhabi Investment Authority (13%), ILFS Employees Welfare Trust (12%), HDFC (9%), Central Bank of India (7%), SBI (6%) etc. are its major shareholders.

IL&FS heavily depended on short-term debt for its operations. In March 2018, it postponed issuance of $350 million bonds forcing it to roll over certain short-term debt. Unable to repay on time, the company had to skip repayment of some papers in August 2018. Using short term borrowings to fund long-term infrastructure projects lead to asset-liability mismatch. Slow-moving and stalled projects meant no fresh money inflow for the company. Mismanagement, lack of proper governance, high leverage, poor returns from investments and asset-liability mismatch are the key factors that led to the value destruction of this 32-year old empire.

D. INTERFERENCE BY GOVERNMENT

The Government of India is indirectly the major stakeholder and considering the size of the institution, IL&FS is “too big to fail”. Both LIC and SBI got ready to provide necessary liquidity for the company to ensure it does not collapse.

On October 1, 2018, the Government took approval from the National Company Law Appellate Tribunal (NCLAT) to take over IL&FS operations. Learning from the Satyam scandal, the Government stepped into swift action dissolving the old Board and replacing it with a new team. The new Board had experts such as Uday Kotak as its Chairman, Vineet Nayyar as its Vice-Chairman and Managing Director and five other industry stalwarts as new Directors. Giving due legal immunity, the team is mandated to prepare a plan of action to the keep the boat afloat. The NCLAT granted interim relief to IL&FS by way of moratorium on actions (stay on legal action) from creditors. On October 31, 2018, the new Board presented a Report on Progress and Way Forward giving a picture on the state of affairs and how it wants to go ahead.

E. IMPLICATIONS OF THE CRISIS

When IL&FS defaulted, a sense of no-trust in the entire NBFC sector arose leading to liquidity tightening in the debt market and hurting companies, particularly housing finance companies (HFCs) such as DHFL and Indiabulls Housing Finance. Stock prices of both companies tumbled down and investors had to suffer. These companies neither defaulted nor done anything wrong. Fresh lending to NBFCs became difficult and expensive. Cost of borrowing increased by 100-110 basis points in H1FY19. An additional cost for carrying got incurred. This mounts pressure on operating profit margins (by 0.3% to 0.50%), portfolio growth moderation and impacts company profits.
Retail loan book, fueled by increased consumer demand, is the main reason for the quick growth rate in NBFCs in recent times. Though much of IL&FS problem is confined to institutional lending, real estate and infrastructure projects, liquidity squeezing has hurt retail-oriented sub-sectors. HFCs, for example, are forced to charge higher interest rates when lending to realtors and hence will cause demand changes in real estate market and indirectly impact home buyers.

F. IMPACT ON OTHER SECTORS

The company bonds enjoyed AAA rating indicating excellent credit worthiness just before the collapse. This raises serious questions on the working and methodologies of credit rating agencies.

NBFCs hold around 17% of all mutual fund debt assets (around Rs. 23,000 crores). MFs picked as much as 97% NBFC commercial papers and 78% NCDs between March 2017 and October 2018. Much of this money went into liquid, ultra-short duration, short duration and credit risk funds. When IL&FS defaulted, credit rating agencies downgraded ratings and this forced mutual funds to accept mark-to-market losses. Debt mutual fund schemes, which are perceived to be “safe”, surprised with deep negative returns. This hurts investor trust and good-will of mutual funds. DHFL exited mutual fund business citing its need to focus on core housing finance business and sold its entire 50% stake in DHFL Pramerica MF JV to Prudential Financial Inc.

The Indian insurance and pension sectors which provide important social security net (SSN) are still in a nascent stage and has huge scope of growth. NPAs in insurance sector are on the rise (near to Rs 22,600 cr; up by 26% in FY17) and the IL&FS can be a wakeup call for insurance regulator IRDA to make some tougher regulation

IL&FS exposure to pension fund managers (PFM) is at around Rs 1,200 crores. Rules state that PFM are allowed to invest in debt paper that is at least AA while ILFS bonds are rated AAA. Pension fund regulator PFRDA asked its PFM to make a way out from IL&FS and directed funds mangers to be more prudent, do their own evaluation and due diligence and not solely rely on credit ratings.

G. THE CLEAN UP

The new Board at IL&FS identified governance shortcomings in which loans were issued or taken within the group beyond permissible limits. It cancelled hiring of 55 former employees (post their superannuation) as consultants for the company at exuberant perks. Post-retirement benefits granted to previous directors and senior management is withdrawn. Property leases taken as guest houses for select employees or their relatives are cancelled. Parent company has no access to financial data or central control because of the use of multiple ERPs by its verticals.

The new Board re-constituted key committees by infusing its own members as Board members of key vertical companies. A “Core Operating Committee” was formed to oversee day-to-day operations on the whole. A dedicated team is engaged for monitoring cash flow of the company. Financial & transaction advisors are appointed.

The new board decided to exit from non-core businesses to improve liquidity and try to stop fresh defaults. On sale are its assets in road projects, EPC & OEM businesses, sports complex, renewable energy assets, education & technology services, thermal power project, IL&FS Securities Services and IL&FS Settlement & Transaction Services, and IL&FS Investment Managers (IIML) and holdings underneath them amongst other things. While the clean-up is going on, in January 2019, its group company IL&FS Financial Services (IFIN) defaulted on external commercial borrowings (ECB) as well.

The new Board wants to bring good governance, conduct resolution process so that financial stability and commercial feasibility is brought back at the earliest. To do this, it requires three things: significant capital infusion (either from existing or new investors), asset monetization to retire debt and resolution / compromise with the creditors. Resolution plans will be implemented at the group level, business vertical / platform level and at asset level to bring about “Final Resolution” in parts and stages in the next 6-9 months after taking due consent from NCLT.

H. RBI’s INTERFERENCE

Historically, Indian NBFCs experienced a state of under-regulation followed by over-regulation. Minimum Net Owned Funds (NOF), as a part of capital adequacy norms remained a critical factor. BASEL norms are applicable for NBFCs as well.

RBI used to strengthen its regulatory framework reacting quickly and learning from the experience every time a scam or a scandal came up [8]. It is constantly doing a clean-up of the NBFC sector from time to time. It cancelled 368 licenses in first-half of 2018 (double to what it cancelled in FY18) citing economically non-viable and failure to meet the Rs. 2 crore NOF requirements.

RBI fueled liquidity in the NBFC sector by tweaking bank funding norms so that efficient NBFCs do not fall into crisis. Banks’ Liquidity Coverage Ratio (LCR) requirements is relaxed by allowing them to use government securities equal to their outstanding credit to NBFCs and home financiers - over and above their
outstanding credit to them as on 19 Oct 2018. This allows banks to lend to NBFCs thereby opening liquidity tap. The single borrower limits for non-financing infrastructure NBFCs has been increased from 10% to 15% of capital funds till 31 December 2018. It bought Government bonds on several instances to infuse cash into the system.

IL&FS episode made RBI to think about strengthening Asset Liability Management (ALM) framework for the NBFC sector on similar lines to that of banks. NBFCs are inherently vulnerable to liquidity risks because their passive strategy allows asset-liability mismatches be covered in the wholesale funding markets. Earlier in October 2018, RBI allowed NBFCs to co-originate priority sector lending along with banks so that synergies of low-cost funds from banks and low-cost operations of NBFCs be brought.

RBI wants NBFC growth rate to continue while addressing liquidity issues and a solution to this is relaxing bank norms by allowing liquidity support to NBFCs till end-March 2019. At the same time, it does not want the IL&FS episode to spoil the bank ongoing Non-Performing Assets (NPA) clean-up activity. So, it rejected bankers' plea for a six-month moratorium seeking special dispensation of asset classification norms. This means that all unrecovered monies from IL&FS beyond 90-days have to be shown as NPAs and due provisioning has to be made.

I. AUDITORS ROLE

Three of the big four auditors - EY, Deloitte and KPMG via their India affiliate firms - S R Batliboi & Co, Deloitte Haskins & Sells and BSR and Company respectively are the auditors for IL&FS and its affiliate firms. The Ministry of Corporate Affairs (MCA) sought approval from NCLT to reopen and recast the books of IL&FS and subsidiaries for the past five years for investigating financial mismanagement. This is the first time that the Section 130 of Companies Act 2013 is being invoked which empowers Government to reopen books only with a court / tribunal order. NCLT felt the auditing firms have only audited and not prepared the accounts and that proceedings against them should be taken only if they are found guilty. RBI, SEBI and the Income-tax Department gave their no-objection for restarting the accounts as required by NCLT.

Preliminary reports by the Institute of Chartered Accountants of India (ICAI) and the Serious Fraud Investigation Office (SFIO) and given to MCA which in turn placed it before the NCLT, Mumbai bench. The reports made some serious observations against the statutory auditors for being negligent and having failed at multiple levels in determining if the company is fit or not as per RBI investment company norms, failing to make note of parent company investments in direct and indirect subsidiaries of negative net worth group companies, not giving reasons for non-consolidation of loss making associated companies in the parents' consolidated statement, examination of eligibility of top IL&FS management to draw high salaries and if due permissions were taken or not, not disclosing the impact of insufficient debt provisioning, identification of probable material misstatements and preparing incorrect financial statements etc. SFIO felt there is definitely liquidity concerns and mismatch in assets and liabilities and that the balance sheet has not reflected this. It added that there was corruption, personal enrichment of some key employees, income misreporting, deals that lead to conflict of interest, ever-greening of loans, dubious transactions and non-transparent deals.

The auditors said ICAI probe is at a nascent stage and cannot be the basis of restating accounts. The NCLT, however, felt that though it cannot yet conclude that auditors have a role to play in preparing accounts, gave interim directions to MCA to appoint separate auditor for reopening accounts in the interest of fairness.

J. SCOPE FOR FURTHER STUDY

The IL&FS financial mismanagement can be studied from various other dimensions including inefficiency of independent directors [2], role of auditors [6] etc.

NBFCs rationale for entering into banking space, impact of IL&FS on Bank NPAs, feasibility of creating a new instrument that allows household savings be channelized to NBFCs as suggested by Government to RBI are potential topics for further study.

Long-term institutional lending and small retail lenders have different characteristics and hence cannot be handled with the same regulation stick. 95% of NBFC loan book is from retail lending with small ticket sizes and 2 to 4 years average loan tenure. Should large NBFCs have a different regulation compared to others? Though there are thousands of NBFCs, as many as 276 of them constitute 85% of the credit assets of the sector.

Why doesn’t NBFCs have a representative network or association that glues them together? Isn’t this making Government and regulator difficult to get data and take suggestions?

V. CONCLUSION

Mismanagement, complex holding structure and several other factors led to the almost financial collapse of IL&FS. The default has put banks and other financial institutions into trouble and triggered liquidity crisis. Timely intervention by Government and regulators minimized the damage and stopped it from spreading to other sections of the economy. The issue exposed vulnerabilities and systemic risk in our financial system.
which the regulators have to tighten up going forward. The IL&FS crisis, for sure, will teach several lessons that will remain in the chapters of Indian financial history.

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Women Entrepreneurship in Bangladesh: Opportunities and Challenges

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Abstract – To keep a sustainable economic development and social progress, women entrepreneurs are playing a very important role however it’s still has not been properly tapped due to the lower status of the women society. This paper is containing three objectives. Firstly, is to gather information about development of the body of work known as, women’s entrepreneurship and its status in Bangladesh. Secondly, to appraise the contribution of their work and lastly, to find the challenges and opportunities they have faced while earning this position. On the basis of this study some suggestions are given to encourage future research.

Keywords – Women entrepreneurship, Bangladesh, opportunities, challenges

I. INTRODUCTION

Entrepreneurship set in motion in economic development in all over the world whether it is in a developed country or developing country however the industry was always been run with an iron fist by the male society , however from recent studies it is gathered how significant the contribution of women is in today’s business world. In the late 1970s both the contribution of male and female is highlighted in business industry. Women’s part played in the economy and their ownership and control over making an effective productivity boost up literacy, helps overcome poverty, decreases inequalities and improves children health and dependency ratio as per, reported by the Organization [1]. Women are most likely to dedicate more of their earnings share back into their families and then their male counterpart feeding money back into their local communities. A training program on personal development skills awareness conference was held on June 15, 2015 “Tomorrow’s CEO” the program was jointly organized by Women Entrepreneur association of Bangladesh (WEAB) and Workplace Skill Development Academy (WSDA) it was a whole day program, the theme was Skilled Women Entrepreneur, Successful Business Mentor. Women entrepreneur have been reconstructing their house-based business activities into joint ventures or industries for many years which shows that they have a golden opportunity to transform he society.

Nowadays customers are more careful about beautification. As a result beauty parlor business are increasing rapidly. It is getting quite renowned as it requires low cost and risk and more return which is ideal for a startup business. ‘The salon industry is worth around ten billion and it is growing each day. The sector has been contributing to the economy by employment and revenue generation.’[12]

II. OBJECTIVES

The objectives of the paper is threefold. First to identify the present scenario of women entrepreneurship in Bangladesh, to analyses the current condition regarding to what extent women are getting support or other requirements. Second, is to analyze the challenges women have faced specially fashion house owner in Dhaka, as our analysis on having physical store, women fashion house owners. Third is to recommend some opportunities and scope where women can improve more if they are given proper support, taken support from the primary survey.

III. LITERATURE REVIEW

An entrepreneur is a person who attempts to create a new product, service or a solution while accepting responsibility for the results. It infers to what can be considered the following critical elements of entrepreneurship including a relationship between with the abiding twins of any entrepreneurial endeavor, success and failure. Someone cannot be identified as an entrepreneur unless that person takes ownership of execution and results. [3]Identifies that an entrepreneur is a person who comprises the entrepreneurship qualities, bears the risks, utilizes capital and uses them in setting up a business. They initiate innovative ideas look for new business opportunities, make investment take risk and enjoy the return as the reward of their venture and expand the business. International labor Organization (ILO) [4] cited that an entrepreneur as a person should have a complete package of characteristics that naturally includes, self-confidence, future oriented and leadership. Not only that Bangladesh institute development studies (BIDS) organized a seminar on robust analysis of the impact of Women Entrepreneurs in SMEs where Professor Naoyuki Yoshino, Dean and CEO of the Asian Development Bank Institute (ADBI) (2018) suggested that extensive studies were done on male entrepreneur and now it focuses on the study of female entrepreneurship, their inspiration, upbringing and the difficulties they faced for starting a business. Women of today are very unique than women of past years in many ways. In present time they look for economic independence and challenges. This wide platform allows
women to form a bridge between serving the society and earning money for their survival. Henceforth, women play a pivotal role in shaping up the economy of developing countries [5] responded that Dr. Yunus and the Grameen Bank has made it possible that half of the population which was once ignored are now being evolved into stakeholders in the economy of Bangladesh. Internationally, women appear to form the largest of the poor and vulnerable group as mentioned by Nessa Ali from Grameen bank mostly because they are frequently granted fewer rights and privileges than their male counterparts. Microcredit allows women to break out of this mold because it provides opportunities for women to start their own businesses, which opens up the floor of decision-making opportunities for women who have always been subject to the authority of their husbands or the authority of societal pressures.

PRESENT SCENARIO

If we take a look at the developing countries of the world it is seen that there are not much of an opportunity for womenfolk to enter businesses. Women are equally qualified as men to become successful entrepreneurs, however they suffer two distinct disadvantages. First, there is the initial lack of self-confidence. Years of accepting a subordinate status and strict role detachment has left women doubting their potential to venture into new possibilities. Second, there is society’s lack of confidence in women’s ability. In the south Asian region women entrepreneurs suffer from negligence, unfair policies and lack of proper education which has been a barrier from the very beginning. In the perspective of Bangladesh, although there are 1.5 million small and medium sized enterprises (SMEs), women own only 10% of that and majority of them are micro. From 2006-2009 banks increased their total lending by 55% annually where women only received a mere 3.5% of the total loan. So, it speaks about the poor chances of the female here in a developing country. In gender focused global entrepreneurship survey released in [6] India ranked 16th among the 17 countries. In India women entrepreneurial role is limited only in the technology-based businesses. Women in the south Asian region mostly own the micro business or initiate an Entrepreneurial approach from the online platform which is in a very small scale. Where Asian countries suffer from male dominance Ghana an African country has made a name being the number one country in the rank of women entrepreneur which has 46.4% of their business owned by the female population. In South Africa women have access to knowledge and financial services. Nigeria is also one of the highest ranked countries where women entrepreneurs rise shine through all the hurdles. Mentioned by [7] there are more than 10 percent of female entrepreneurs from the total number in Bangladesh. Females are holding only 6.3 percent out of 5.59 core of employment population, from there 5.6 percent females are professionals and 0.7 percent are entitled as managers According to QLFS [8].

There are many factors that withdraws a women from going forward in the employment. Some experts believe that psychologically women think that they are responsible for their failure to some extent because they may have preferences about the type of job and location that are difficult to match with the supply of jobs. Therefore, educated women who are still unemployment is a matter of great concern in Bangladesh.

IV. METHODOLOGY

To complete the research both secondary and primary data are used. Secondary data are collected from several of articles, journals, which are related to women entrepreneurship and the internet. Primary data are collected from conducting a survey on women entrepreneurs of different age, class were randomly selected for collecting data. The questionnaire was designed taking support from literature review we asked fifteen women entrepreneur in Dhammondi and Banani to give a self-administered questionnaire. The collected data are analyzed using some common statistical tool and techniques such as percentage and table to represent the chronicles.

V. PROBLEM FACED BY WOMEN ENTREPRENEURSHIP

➢ Access to finance and financial

Institution:

In Bangladesh women entrepreneurs face several of stoppage to access to finance. Insufficient initial capital is one of the biggest dilemma for the women entrepreneurs in Bangladesh. Singularly, when a new venture is established, extensive difficulties is faced by them in accessing credit. According to [2], South Asian women are virtually invisible to formal financial institutions they get paid less than 10% of commercial credits. Similarly, this brings the stereotypical gender-based obstructions for example, culture and social values, lack of collateral all aggravate the complicity encountered by women. Increases in transaction costs, the rigidity of collateral requirements and heavy paper work are further deterrent to women entrepreneurs [9] remarked that the reasons for hindering the progress and existence of enterprises handled by women entrepreneurs are lack of experience and information, lower investment and unavailability of facilities like business premises or other apparatus.

➢ Lack of entrepreneurial training:

Entrepreneurial training is essential for processing, manufacturing, livestock and fisheries activities. However, such training facility is possible to get in urban areas. Lack of appropriate training, lack of experience can highly affect the efficiency and productivity of the rural women entrepreneurs. Based on [10] it is evident that having the benefit of earning a certain volume of credit is not enough unless the rural female entrepreneurs
could also be offered adequate training facilities. It has an adverse effect on opening of a new business segment. Opportunity for entrepreneurial training has increased significantly, but only in urban areas.

- Lack Of Support Services:

Whether it is in rural or urban, women entrepreneurs in Bangladesh usually are not having the access to appropriate cooperative or support services from the respected authority and this generates social, cultural and economic drawbacks which indisputably have a direct reflection upon their product quality and thus revenue.

- Access To Marketing Information And Network:

The activities that are carried as a female entrepreneurship are not easily involved in trade, industry or business involvement. Having access to marketing information is challenging for women entrepreneurs. It is difficult to get access to domestic as well as export market. Even some women do not have knowledge of properly using the market promotion activities. Having self-reliance, good cooperation and attempt to make improvement in their business becomes difficulties due to rare number of women majority networks.

- Lack of R&D To Improve Quality:

Research and development is very essential to improve the quality of products. It is very hard for women entrepreneurs to do their own research and development in micro, small and large enterprise because it requires huge amount of investment which is difficult to afford the unavailability of research and development sector can hold back women to compete locally and globally since they cannot effectively use recourses to improve quality and innovate new product.

VI. FINDINGS AND ANALYSIS

The entrepreneurship status of the population shows that out of 46.8% self-employed citizen, women take up only 8.3%. The situation is quite opposite for urban areas. In urban area nearly 15.4% of the 36.7% self-employed people are women. In rural area, it is only 7.4% of 47.6% and it is noticed that most of the women are unpaid family helper, 83.2% in rural area and 42.9% in urban area. A part of the poor women works also as day laborer. On national level it is 5.7%, in urban area 6.2% and in rural area 5.6% [11]. Previously, women’s enterprises were confined in sectors that were dominated by male counterparts, such as food and beverage, beauty parlor, health, education, webbing, tailoring and wholesale and retail apparel trade. However the situation is slowly developing as in today women are also in occupations, which were solely controlled by the male before. Now, some of them dominates top management post in private as well as in public sector enterprises, not only that women sit in the most important policy making bodies of the country, and hold their own enterprises. Women are now seen also as owners and managers of cold storage, shipping lines, advertising firms, travel agencies, interior decoration, and engineering workshops and even garment industries and many more.

<table>
<thead>
<tr>
<th>Name of division(no. of districts)</th>
<th>Number of women entrepreneur</th>
<th>Percent of women entrepreneur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dhaka (17)</td>
<td>155</td>
<td>33.4</td>
</tr>
<tr>
<td>Chittagong (11)</td>
<td>81</td>
<td>17.1</td>
</tr>
<tr>
<td>Rajpur (10)</td>
<td>68</td>
<td>13.9</td>
</tr>
<tr>
<td>Rajshahi (8)</td>
<td>52</td>
<td>12.5</td>
</tr>
<tr>
<td>Khulna (8)</td>
<td>46</td>
<td>11.1</td>
</tr>
<tr>
<td>Sylhet (4)</td>
<td>31</td>
<td>7.5</td>
</tr>
<tr>
<td>Barisal (6)</td>
<td>19</td>
<td>4.6</td>
</tr>
</tbody>
</table>


Table 2: Distribution of Ownership by Gender of Owner

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Percent of all SMEs</th>
<th>Average no. of workers</th>
<th>Percent of SME workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>women</td>
<td>6</td>
<td>2.3</td>
<td>2</td>
</tr>
<tr>
<td>men</td>
<td>94</td>
<td>15.5</td>
<td>96</td>
</tr>
<tr>
<td>Co-ownership by women</td>
<td>1</td>
<td>7.6</td>
<td>1</td>
</tr>
<tr>
<td>total</td>
<td>100</td>
<td>5.2</td>
<td>100</td>
</tr>
</tbody>
</table>


Table 3: Contribution to GDP by women Owners

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Total contribution to GDP (in million Tk.)</th>
<th>Percent of total contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>49993.71</td>
<td>18</td>
</tr>
<tr>
<td>Fishing</td>
<td>94.28</td>
<td>3</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1397.36</td>
<td>50</td>
</tr>
<tr>
<td>Construction</td>
<td>75.38</td>
<td>0</td>
</tr>
<tr>
<td>Wholesale trade,retail trade</td>
<td>4227.38</td>
<td>15</td>
</tr>
<tr>
<td>Hotels Restaurants</td>
<td>2370.61</td>
<td>8</td>
</tr>
<tr>
<td>Transport, storage communication</td>
<td>327.72</td>
<td>1</td>
</tr>
<tr>
<td>Real estate,renting, business activities</td>
<td>514.19</td>
<td>2</td>
</tr>
<tr>
<td>Health and social work</td>
<td>338.15</td>
<td>1</td>
</tr>
<tr>
<td>Other services</td>
<td>308.54</td>
<td>2</td>
</tr>
<tr>
<td>total</td>
<td>14309.17</td>
<td>100</td>
</tr>
</tbody>
</table>


Dhaka and Chittagong hold the highest number of women entrepreneurs as per table 1 [10] mainly due to the growing fashion industries. Moreover, in Rajpur and Rajshahi women are excelling in SME sector. Microfinance has given the liberty of taking loans to rural and urban women entrepreneurs. Previously the percentage of women participating in SME business is low compare to men as shown in table 2 [2] this is due to the unavailability of microfinance and on hand training. It also shows that women are focusing more in manufacturing clothing. In many universities in

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Bangladesh female graduates have exercised their skills and knowledge to practice in the business world. A large handicraft sector has evolved, with small women-owned firms selling high-quality goods and merging into international brands’ supply chains. Moreover, table 3 [10] illustrated the contribution of female owners in GDP. The highest contributing is seen for the manufacturing sectors with 50% next is agriculture with 18% then 15% on wholesale, retail trades and thereafter is the restaurant with 18%.

**From the survey:**
A survey conducted on 15 women entrepreneurs unveiled that majority of them 60% are engaged in boutique houses, 20% in parlor business and the rest 20% on food. The respondents were approached with questions on different problems they faced and 60% of them strongly agreed that access to finance is a major dilemma for conducting business the rest disagreed. Next they were asked about the significance of education background to start a business because a clear knowledge about business environment, economy, management and policies are essential in today’s business here, 40% strongly agreed, 46.6% agreed and 13.3% disagreed. Further, the women had to answer regarding do they face gender discrimination there, 66.6% strongly agreed and 40% disagreed. Fourthly, they were asked to voice opinions regarding Institutions encouraging women entrepreneurship and survey said 53.3% disagree that institutions are not providing them with the scope of becoming an entrepreneur. Next the respondents were requested to address whether government policies are favorable to them survey said 33.3% strongly agreed, 33.3% agreed, 26.6% disagreed and 6.6% strongly disagreed, this reflects how confidently women can depend on government facilities. Lastly we asked them are women and men on the same scale when it comes to gaining skills and knowledge, the survey said 66.6% agreed and 33.3% disagreed.

**VII. RECOMENDATIONS:**
After analyzing the findings some recommendations are suggested in order to overcome the barriers endured by female entrepreneurs in Bangladesh.

- At first Government should step forward followed by NGOs to face financing need of women entrepreneurship since it is the major dilemma. The government can start by creating a channel for women in both rural and urban areas through different state owned bank at a lower interest rates.
- Related to women entrepreneurship development, government and NGOs introduce policy guidelines these will favor the growth of business whether it is micro, SMES or large enterprise.
- Formal and informal institutions should initial entrepreneurship related courses these will improve their skills enrich knowledge and inspire them to become entrepreneurs. Not only will that women see themselves as job creators instead of job seekers.
- Private sector and NGOs should introduce practical training session for increasing skills and knowledge regarding business, management and environment practically assist the entrepreneurship risks. This will allow them to conduct business effectively and efficiently and increase accountability. Women with ease can be more confident in tasking risks, bear cost or enjoy the benefit from the outcome, not only that they will also have more market information.
- Bangladesh chamber commerce and industry (BWCCI) intensively working on women’s economic and social empowerment, are already introducing various types of practical training facilities that will help them to grow their business.
- Formal and informal both educational institution should introduce courses on entrepreneurship these will improve their skills and knowledge, strengthen their self-confidence to emerge as entrepreneurs. With this women can also see themselves as potential job creator rather than job seekers.
- There are barriers when it comes to marketing products produced by female entrepreneurs this can be solved by allowing exposing them to different marketing strategy related knowledge intermediaries can be used like private or NGOs who can buy their products in bulk and sell it at different parts of the country. Another strategy can be used like involving grade fairs for displaying their products only.

**VIII. CONCLUSION**
Entrepreneurship serves like a catalyst for industrialization and economic growth. Not only for the source of income women entrepreneurship also served as a way of gaining economic independence. Economic development is important to ensure there is an overall development in the country, for which both the participation of male and female are essential. To encourage women participation in the SME or large enterprise Bangladesh government along with other financial institutions are acting as intermediaries to provide credits to female entrepreneurs. Still there are lack of communication and collaboration form various organization that restrains the women from achieving success. Thus, proper policy adjustment and execution will lay out the foundations for the development of women entrepreneurs. When women are exposed to more facilities they will surely close the gap success and contribution to the society. Hence, more management training and easy access to market information will help them to improve their productivity. On the other hand, women entrepreneurs will be more successful a large number of NGOs are collaborating with them to reduce gender discrimination. On a positive note, microfinance is helping a lot of women to bring their dream of having their own business into reality. These measures will not only be added as a benefit for Bangladesh’s economy but...
also will contribute to sociocultural improvement of female entrepreneur immensely. Consequently, entrepreneurship has become a supreme professional among women in both rural and urban areas.

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Third Party Logistics- A Solution to the Business Support

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Abstract – Third Party Logistics has prospective and people define it in many ways. In this paper, we try to review definitions with the real world aspects. Third party logistics as an external logistics service provider providing logistics support to its customers (principal) by the means of contract. The pattern of logistics support depends on need basis (varying from principal to provider). We also discuss the reasons why business is outsourcing its logistics functions to 3PLs. 3PLs has become a major trend and we are seeing a prosperous future in this sector. In the Third Party logistics business both the parties (principal & provider) have to work jointly for an objective of growth. Thus choosing an outsourcer is also a crucial task as the success depends on the 3PL provider mostly. With the help of partnership, this business is spreading lights and creating new path and opportunities.

Keywords – 3PL, outsourcing, logistics, warehousing, principal, commission

I. INTRODUCTION

Third Party Logistics- known as 3PL is one of the most used terms in these days. Business environment has changed a lot and it is always in the pace of changing. In this global village era, business is becoming more competitive. To stay in competition; businesses are in need of continual search of new ideas and theories. In search of these ideas and theories, customers and consumers are demanding for innovation in product. To bring innovation, it always asks for designing new products which is costly. Other than designing, it also needs manufacturing, storing and distributing; for storage and distribution purpose it almost take 25% to 30% of the total costs. To reduce this huge cost, organizations begin outsourcing the logistical functions to the 3rd Parties. Third part logistics have the resources, scope and efficient in warehousing, distributing, transporting and moreover much efficient with less expenses than the in-house. Before going to the throughout discussion, we will be giving a literature review to explore the wide range of 3PL practices.

II. LITERATURE REVIEW

3PL indicates giving the logistics or taking the logistics support like contract logistics and integrated logistics from the third party. 3PL has many theoretical aspects and people may term it from various aspects. There are some definitions given to bring light to the 3PL as follows. According to the Council of Supply Chain Management Professionals [1], 3PL refers to “a firm that provides multiple logistics services for use by customers. Preferably, these services are integrated, or bundled together, by the provider. Among the services 3PLs provide are transportation, warehousing, cross-docking, inventory management, packaging, and freight forwarding.”, Bridgefield Group [2] terms “3PL as an outsourced provider that manages all or a significant part of an organization’s logistics requirements and performs transportation, locating and sometimes product consolidation activities”. Bagchi and Virum [3] refer to 3PL as a long-term partner that provides all or a considerable number of logistics activities for the shipper. Berglund et al. [4] define 3PL as a logistics service company providing service on behalf of a shipper responsible for the management, transportation and warehousing of goods. Sink and Langley [5] refer to 3PL provider as an external supplier performing some or all of a manufacturer's or customers logistical functions. We take Third Party Logistics provider as an external source who is offering one or more logistics solutions to its client or principal. Both the parties (Principal & the 3PL) are bound by a contract where the principal entitles all the logistical services or support to the Third party and the Third party works for the principal and all the activities are devoted to the growth for both the parties.

III. REASONS for 3PL OUTSOURCING

In this competitive era, companies need to experience growth and for this, the biggest challenge is to meet the demand of their supply chains. To meet the growth, companies have to concentrate on their core competencies. Sometimes they are in need of partners who are better and pioneer in assembling, packaging, warehousing and distributing. Companies go to these partners for a better solution in these aspects while they concentrate more on product or service as well as minimize their cost than in-house management. The major benefit for going outsourcing is saving both the cost and the time. In terms of a large scale corporation for distribution and warehousing it takes more than 20% of overall costs. Hiring a third party can provide warehousing, labor support, transportation or distribution and also providing various supports as asked by the principal can reduce the cost drastically, while it is freeing up more time to concentrate on the core business. Other than logistics support, a business needs various hassle of documentation, invoicing, auditing, recruiting and other activities involved
with supply chain which are also eliminated by the 3PL. In terms of a new company or a new market, there are no footprints of the principal company. Here, 3PL provides the best support with its established presence by giving access to its distribution centers and warehouses which allows the principal company to grow in new areas by distributing the goods. 3PL providers have vast resource establishment which helps to grow faster in cost effective manner. Some companies deal with seasonal demands or release new products frequently. This may occur problem for in-house warehousing and inventory management. In case of 3PL, they have the ability of providing space and resources as per the demand from the principal which releases flexibility in favor of the principal. While the in-house is having the constraints of various resources and limited to the various accessibility; 3PL partners fulfill all the needs as “higher the business volume, higher the revenue” as they have deal with the principal in terms of “Commission or percentage” in line with business volume. Other than this, 3PL has many advantages which triggers in-house to go for 3PL sourcing:

- Customer service level Improvement
- Conflict resolution and setting business objectives
- Less or Zero Capital investment
- Improve expertise, market knowledge and data access
- Integration in all the supply chain activities
- Increase in growth and productivity
- Risk reduction, uncertainty and fluctuation avoidance
- Getting competitive advantage both in locally and globally
- Market knowledge, expertise and efficiency gathering
- Reduce manpower count and adequate resource allocation

IV. FACTORS CONSIDERING FOR CHOOSING AN OUTSOURCING AGENT

Outsourcing plays an important role in the whole logistics system in inventory management and distribution. Customers expect a very few lead time and always available products at their doorstep. 3PLs have the resources, capability and it is the pioneer in the logistical support thus ensuring services more efficiently in a cheap way. As 3PLs are the representatives of their principals, they have to have some strengths and competitive advantages which allows their acceptability to the principals.

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>OPPORTUNITIES</th>
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</thead>
<tbody>
<tr>
<td>Cost &amp; Financial Strengths &amp; Operational capability &amp; network availability</td>
<td>Cost Saving</td>
</tr>
<tr>
<td>Capability</td>
<td>Prior experience</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Customer friendliness</td>
</tr>
<tr>
<td>Performance</td>
<td>Manpower</td>
</tr>
</tbody>
</table>

V. DISADVANTAGES OF OUTSOURCING

A third party logistics provider works for the principal and has direct communication and knowledge of both the market and the customers. While working in the market for a long time 3PL providers can play with the market and may fall principal in the false position and can become the principal. They can make hostage of the both principal and the market by stopping the product flow into the market. As 3PLs are the representatives; so whatever they do, everything goes to the principal company’s (principal) reputation.

VI. FUTURE OF 3PL

Looking back on 20 years, 3PL was only involved in transporting goods from one boundary to another. That time it was not expanded into an integrated system. Now it is not only bound in transportation but in everywhere starting from warehousing to distributing to the end customer. The size of this business is getting bigger in day to day basis. According to a new study done by Grand View Research, Inc. [6] - The global 3PL market is expected to reach USD 925.31 billion by 2020. Global Third Party Logistics is considered as a whole of Dedicated Contract Carriage, Domestic Transportation Management, International Transportation Management, Warehousing & Distribution, and Logistics Software. This number signifies how big the market is going to be! Just grabbing the hand of 3PL; Accenture- a global management consulting and professional services firm introduced a new concept called the fourth party logistics (4PL). 4PL Company works as a coordinator who pulls together the resources, capabilities and technology of other organizations to design, build and run the whole supply chain network on behalf of its principal. 4PLs basically do the administrative activities but leaves the physical movement like warehousing, trucking and other services to their contracted 3PLs. 4PLs mostly do not belong any kind of physical assets rather than providing knowledge relative to fulfilling the customer/ principal’s requirements [7].
VII. CONCLUSION

Companies are focusing on their core competencies and outsourcing their logistical functions. This has become a generalized practice in the business world in these days. Sometimes due to intense competition; there is a chance of decrease in growth. In the past, 3PL provided only single service like transport or warehousing but if we look at the future trend then we can get the idea of a long term relationship with the principal by providing variety of logistics support and services.

REFERENCES


Impact on Capital of a Manufacturing Company after Introducing Information System

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Abstract – Capital has become the most important factor of business. Financial assets or their financial value as well as the tangible factors of production including equipment used in environments such as factories and other manufacturing facilities is called Capital. On the other hand, capital includes facilities, such as the buildings used for the production and storage of the manufactured goods. Capital involves the aspects of the company that help shape and grow it, and includes any of its assets that can benefit the company in the long-term future. In this paper focus will be given to wealth in the form of money or assets, taken as a sign of the financial strength of a specific manufacturing company, and assumed to be available for development or investment. By introducing information system (IS) in this manufacturing company, it was possible to increase capital which was managed inside the manufacturing process. Basically, an information system (IS) is a group of components that interact to generate information. A combination of hardware, software, data, business process and functions which can be used to increase efficiency and management of a company is information system (IS). Here relationship between information system (IS) and capital of business will be shown.

Keywords – Capital, Information System, Manufacturing Company, Engineering, Manufacturing Process, Warranty of product

INTRODUCTION

One of the products of this manufacturing company is LED lights & Energy Saving lights. Information system (IS) primarily introduced in two steps of the entire company. The result of capital after introducing information system is very satisfactory. Management could able to manage some extra fund to re-invest in business saving from above two steps. There were some problems in these two vital steps of manufacturing. Problem was critical so no one could identify earlier. After IS implementation those problems were solved. Due to this problematic issue some extra fund was needed for these two steps. But now this fund is re-invested in Business. This investment effects directly on capital of the business. This effect occurs revenue generation of the company. Among these two steps, most important second step will be discussed [1]. Gradually management has the plan to bring total manufacturing plant under information system (IS). But test case of two steps was more than satisfaction. So in future this company can make business expansion plan also, with this fund. So information system has direct impact on capital for this company.
User returns lights & collects same number of lights from company. But when these fused lights are sent to ‘servicing center’ of this company, it is seen, some users violated condition of getting warranty. But in the mean time they already exchanged new lights. So there was a coordination problem. After applying information system (IS), no one could exchange new lights which are out of warranty.

In this paper we will make analysis on Step-5: After Sales Service.

RESULT

In a survey, it is seen, market price of lights which are exchanged every month out of warranty is ten lacs Bangladeshi taka.

Now every month this amount of lights is not replaced in free of cost moreover these lights is being sold in market. This graph is number of light replacement VS year. After the year of 2016 no lights are replaced which violated warranty conditions [3]. This reduced replacement number. This amount of lights is sold in market. So in this graph, the curve of replace in sharply downward in 2016. This extra money is invested in business. So in 2017 capital of the business increased. On the other hand sales of the lights increased also.
USUAE OF THIS CAPITAL IN BUSINESS

Capital for this manufacturing organization is the sources of money for a business.

Diagram-2: Utilization of Capital in this business

A. Operations:

Firms need Capital to:

1. **Start up**: this company used this capital to pay for premises, new equipment which are used to manufacturing new LED lights, machineries which are imported from India & China and advertising overall capital of Bangladesh.

2. **Run** the business; in this case this company used enough cash to pay staff wages and suppliers on time. That made this company a well reputed in their industry. In future it will help them to hire potential candidates.

3. **Expand** the business, having funds to pay in different phases in different cities of Bangladesh.

Businesses in this field find difficult to raise capital because they usually have just a few customers and many competitors. Lenders are put off by the risk that the business may fail. If that happens, the owners may be unable to repay borrowed money.

B. Short Term Usages

1. **Trade credits**, payments of suppliers who delivered goods previously. This made their relationship better. In future when necessary, suppliers will be interested to deliver goods on large scale credit [4].

2. **Factoring**, payment to avid factoring. If cash is not enough in hand, company becomes bound to do factoring at discount. As now cash is in hand, so no need to carry discounts [5].

C. Long Term Usages

1. **Loans**: There are a lot of loans from bank, financial institutions, and from family and friends. So company paid loans from the capital. Huge amount of interest is gain the by the company [6].

2. **Debentures** are loans made to a company. This ratio is also decreased for this manufacturing company [7].

3. **A mortgage**, against the asset, special type of loan for buying equipment & machineries where monthly payments are spread over a number of years. Company could release the asset earlier & planned to utilize the asset in business [8].

4. **Hire purchase or leasing**, where monthly payments are made for use of equipment/ machine such as a generator. Leased equipment is rented and not owned by the firm. Hired equipment is owned by the firm after the final payment. So with the capital, company purchased instead of leasing or renting [9].

DISCUSSION

For the time being this company changed their technology & improved performance of their lights as well. But this decision was subjected to new invest. But with existing investment, just by introducing information system (IS), this company increased their sales & capital at the same time. After 2017 they maintained warranty and replace policy strictly & used that fund to produce new product. With this fund they achieved some milestones. They did not have to take bank loan that much. They imported more equipment & produced huge amount of product. They gave more force in sales. Their sales also increased. Now they also increased some inventory which was very important.

Previously they had to refuse big offers because of not having completed (ready-made or finished) product in store. Now this problem is also solved. Capital indicates how well the company positioned to meet its near-term cash needs. So this manufacturing company is successful.

CONCLUSION

Only implementing Information system (IS) this company has brought huge change in their business process. Due to lack of proper implementation this company was replacing bulk amount of defective lights which are actually out of warranty. But after implementing IS- company was not replacing lights which are out of warranty. With the money which was being used as replacement cost, now using to produce new lights. Company is importing row material (equipment) to product more lights. New automated advance machineries are also imported which is helpful to product quality products. As a result quality of their lights improved. Their sale increased in the time being. This is the way, how this company successes in business. Here we discussed the impact on capital after introducing Information System. In data analysis part, direct relationship of profit after implementing this is shown.
REFERENCES

Abstract – In this business analysis, various types of chemicals are considered which are being used mostly in Bangladesh from long since. Strength, weakness, opportunity, threats moreover overall challenge of chemical industry in Bangladesh is highlighted here. A clear conception about chemicals business in Bangladesh will be developed with analysis in different perspective. This paper includes historic data, future forecast which made this analysis a valuable resource for industry executives, marketing, sales and product managers, consultants, and other people looking for key industry data in this chemical business. Recession has been difficult for most businesses, and the chemicals industry is no exception. But the downturn hasn’t affected every chemical company equally. Some have fared significantly better than others—and their experience offers some lessons as the industry moves forward. However, the recession led to a steep decline in chemical companies’ profits. Most companies responded by cutting costs and capital spending sharply and putting mergers and acquisitions (M&As) on hold. This was applicable for global companies only. But the specifics of how each company took such actions varied, and had a strong bearing on how well each weathered the storm. Now details analysis of this chemical market business will be discussed here.

Keywords – Business analysis, Chemical Industry, business cycle, cash flow,

INTRODUCTION

The demand of chemicals in the country has increased sharply in the recent years. Low worker wages and easy raw material availability are some of the prime factors driving the country’s textile industry as well as other allied industries such as textile chemicals to reach its destination. However, due to limited technical capabilities and poor infrastructure, multinational textile chemical companies have not been able to set up their production facilities in Bangladesh as well as Bangladeshi entrepreneurs have not been able to set up an industry that remarkably manufacture textile chemicals, mainly coloring materials. This is the reason to import from other countries and pay unaffordable amount—which are sometimes kick us to omit from the market. The country is witnessing significant investments in the textile market from all across the globe, primarily from China and India. In addition, changing patterns in the consumption of specialty finishing and pre-treatment chemicals is expected to drive the demand for textile chemicals during the forecast period. However, in this paper, the present conditions of the textile chemicals market in Bangladesh with prospects and challenges in growth are discussed [1] [2]. Also an analysis on SWOT of textile chemical business in Bangladesh in context of importing or manufacturing is presented.

CASH FLOW OF BUSINESS

Cash flow of this business is dependent of four (04) main factors. In business cycle of chemical market, needs support of cash in four steps [9].

To take any decision is chemical business; these steps must be kept in consideration.

Capital investment:
The investment in new developments is made up of two main components:
1. Structures (e.g., buildings), and
2. Equipment.
Investment in structures is mostly for industrial buildings and related structures (loading docks, terminals, etc.). The investment in equipment includes process equipment such as pressure vessels, storage tanks, heat exchangers, pumps, compressors and electrical equipment. These are discussed in the unit Chemical reactors [3]. High priority is given to instrumentation, computers, and related automation or information processing technologies. New investment needs include expanding production capacity for both new and existing products, replacing worn-out or obsolete plant and equipment, and improving operating efficiencies (saving energy, increasing protection for the environment).

METHODOLOGY

The information contained in this analysis is based on both primary and secondary sources[4]. Primary research included interviews with textile chemicals suppliers and industry experts. Secondary research included an exhaustive search of relevant publications like company annual reports, financial reports and proprietary databases, bank reports, and different company websites. The main data source would be secondary data base of BBS, Bangladesh Planning Commission, and Bangladesh bank, EPB, UN, World Bank and IMF and other country’s data from their website as well as from some companies of Bangladesh.

DATA ANALYSIS

At first a graph of year VS cash flow is shown. Demand and consumption of chemical is increasing day by day, so cash flow will be also increasing.

In second graph, year VS income (USD in Billion) is shown. So expected cash flow & income for corresponding year is shown here. The relationship of cash flow & income is here to take decision.

After 2nd graph now concentration will be given to 3rd graph. This graph is about capacity of chemical. From 2009 to 2013, Asia added close to 400 million metric tons of chemical capacity.

Chemical global market demand is mentioned as below. Up to year 2015 this value was sharply increasing [5]. In future this value will be also increasing. China indicates one third of the total demand of the world.
Major import items in Bangladesh:

Among all import items chemical is number five in serial. So it indicates a clear signal of future perspective of this industry [6].

<table>
<thead>
<tr>
<th>SERIAL</th>
<th>ITEM</th>
<th>AMOUNT (Million USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest</td>
<td>Animal Product</td>
<td>4.667</td>
</tr>
<tr>
<td>2nd Highest</td>
<td>Machineries</td>
<td>4.582</td>
</tr>
<tr>
<td>3rd Highest</td>
<td>Vehicle</td>
<td>0.883</td>
</tr>
<tr>
<td>4th Highest</td>
<td>Plastic</td>
<td>0.718</td>
</tr>
<tr>
<td>5th Highest</td>
<td>Chemical</td>
<td>0.705</td>
</tr>
</tbody>
</table>

Table-1: Major import items in Bangladesh

FACTORs INFLUENCING CHEMICAL INDUSTRIES

There are some factors influencing the development and competitiveness of the chemical industries of developing countries [7][8]. Competitive factors in the chemical industry are similar to those in other industries except for the greater influence of petroleum and natural gas resources and the relatively smaller importance of labor costs. In general, they include the following, which are discussed later in this report:

✓ Minimum economic plant size
✓ Investment funds
✓ International financial institutions
✓ Exchange rates
✓ Inflation rates
✓ Petroleum and natural gas resources
✓ Mineral and agricultural resources

RESULTs

Now few distinct points will help to take decision. According the data of the section V (Data Analysis) of this paper, the result is drawn below.

1. Globally the demand of chemical is rising
2. China producing more chemical
3. Due to progressive rate in Pharma & RMG sector in Bangladesh, chemical demand will be more increasing
4. Capacity of chemical is increasing
5. Cash flow of each step of chemical process is mentioned here
6. Against the cash flow, income is mention & income is increasing
7. Capital investment is not subjected to many steps
8. Good cash back for the investment
9. Distinct market
10. The costs of chemicals control to the chemical industry are small in comparison with its turnover.

CONCLUSION

Lured by the size and returns of this market, investors have strengthened their presence in this sector. All points in Section VI (Results) focus that, chemical industry has bright future. Investors will be attracted to this industry. Some countries are getting FDI for chemical industry. This is also matter of great manpower engagement. It is so obvious, chemical industry is a key growth element of our economy. In the Chemical Sector, 100% FDI is permitted. Import of certain organic chemical products to requires the approval of the Directorate General of Trade ministry. Our Chemical industry has the potential to grow significantly, if some of the key growth imperatives are taken care of. Securing feedstock, the right product mix and export opportunities are currently the key imperatives for the chemical industry. The chemical industry is one of the oldest industries in Bangladesh. Over the last decade, it has evolved from being a basic chemical producer to becoming an innovative industry. With investments in R&D, the industry is registering significant growth in the knowledge sector comprising of specialty chemicals, fine chemicals and pharmaceuticals. But Chemical industry has had to face the brunt of the global slowdown in the past some years. Global economic uncertainties along with recent regulatory issues have resulted in low FDI inflows into the country.
But, a large population, dependency on agriculture and strong demand are the key growth drivers for the Chemical industry, which have resulted in the recent upswing, visible in the latest figures.

REFERENCES


Restructuring Distribution System: A Case Study with Akij Food and Beverage Ltd

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Abstract – Akij food and beverage Ltd is one of the leading Fast-Moving Consumer Goods (FMCG) companies in Bangladesh. This research introduced a new restructured distribution system for beverage product of Akij Food and Beverage Limited. The main objective of the research is restructuring the distribution system of Akij Food and Beverage Ltd in Dhaka city. It is also directed to find out shortest route to deliver product, to reduce distribution cost and to ensure the proper utilization of delivery van to reduce the number of delivery van. Primary data is used in the research which is collected from the officials of the company and from field review. Moreover, details distribution plan, dealer point’s forecasted daily demand and the distribution cost have been introduced in the report. In the details distribution plan there is in depth description from where the company will distribute the product, what will be the capacity of the delivery van and how many delivery vans will be required to distribute the product. After comparative analysis of existing distribution system with proposed distribution system, it has been found that there is opportunity to reduce distribution cost near about fifty seven percent.

Keywords – Restructuring, Distribution system, Akij Beverage, Delivery Van, Delivery Time, Distribution Cost

I. INTRODUCTION

In today’s modern world research and development is more of a never-ending process where there will always be scope for further study in any educational matter. The purpose of the study is to maximize the distribution route of beverage product of Akij Food and Beverage Ltd. To maximize the route of distribution, have to consider shortest route as well as less traffic route to deliver the product to the dealer points. In this study another purpose is to deliver the product on time smoothly without creating any stoke out scenario. Moreover, cost minimization is another important purpose of this distribution restructuring system to gather more efficiency. Even increase the responsiveness and efficiency will create idle tradeoff scenario.

(1) Objective of the Study

In Akij foods and beverage, there is no proper route planning and proper plan to distribute product. As a result, they haven’t created the proper and effective delivery plan. Primary objective of the report is to restructuring distribution and delivery system to minimize cost of distribution and cost of sales.

(2) Scope of the Study

This study is done for academic purpose and study is limited within the Dhaka city where AFBL conduct its sell. The study is conducted in Dhaka and I worked in Dhaka Warehouse of Akij food and beverage ltd. In this distribution restructuring system is not totally applicable for dairy of Akij food and beverage Ltd because dairy delivery system is different than others beverage product of AFBL. The efficiency of the employees in distribution system should consider another factor of successful distribution. So, for the further research on restructuring the distribution system the efficiency of the employee should consider as major factor.

II. STUDY OF PRIOR LITERATURE

There is a great influence of transportation in the economic development of an area. Mainly raw materials for production of marketable commodities and distributes the product of industry to the marketplace by the transportation. There are five carrier of transportation such as rail, road (truck, buses and automobiles) air, water and pipeline. Different mode of transportation has different cost and service characteristics. The elements of transportation cost are line haul, pickup and delivery, terminal holding, billing and collecting. Proper knowledge of selecting the right shipping mode enable a shipper to get a better price. The ways of reduce shipping cost are: 1. Decline line-haul cost by expanding weight delivered 2. Reduction pickup and conveyance cost by diminishing the quantity of pickups. This should be possible by merging and expanding the load per pickup. 3. Lessening terminal-handling care of expenses by diminishing the quantity of packages by uniting shipments.4. Decline billing and collecting costs by merging shipments. [1]

Warehouse is the physical storage of goods and in a factory store perform the role of warehouse and store raw materials, work in process inventory, finished goods, supplies and possibly repairs parts. On the basis of the service function warehouse is divided in two types. One is general warehouse and another is distribution warehouse. In general warehouse goods are stored for a long time. Main purpose of this warehouse is stored and protect product until they are needed. Dissemination distribution center has a dynamic reason for development and blending.
Products are get in huge volume outfits parcels, put away quickly and separated into little individual requests of various things required by client in the commercial center. The accentuation is on development and taking care of as opposed to on capacity. This sort of stockroom is broadly utilized in conveyance framework. [1]

Supply chain process restructuring includes playing around with something like one of three elements of the supply chain toward the path as appeared: Postpone the point of differentiation: By moving the purpose of separation however much as could reasonably be expected, a main part of the exercises can be completed utilizing the total dimension gauge as opposed to the variation level figure.

Alter the shape of the value-addition curve: Shift the main part of the cost expansion as late as could reasonably be expected. This will diminish the stock in the chain and furthermore help the firm in having some adaptability. In the event that the main part of the cost expansion happens at a later point in time in the chain, one will be in a situation to react to unexpected changes with the least expense.

Advance the customer ordering point: Move from a MTS to a CTO production network. By moving the client requesting point as right on time as could reasonably be expected, one can complete the main part of the exercises. [2]

Supply chain management is one of the most important major components of today’s organization to enhance organizational productivity and profitability. Supply chain management starts from supplier and end with customer. Distribution is one of the most impairment part of supply chain and today’s world is focusing on re-engineering of distribution system. (Maslaric, Groznik, & Brnjac, 2012)

Every month there is huge transport fuel cost. AFBL products first load to the large capacity truck and unload in Dhaka warehouse and again the product have to load small delivery van to deliver distribution point as a result they have to pay three times loading unloading cost. Due to lack of proper demand forecasting, there is creating shortage of product in Dhaka ware house; is creating disturbance in distribution channel. More ever there is no enforcement of keeping safety stock in dealer point on the basis of company policy.

The researcher introduces a methodology for the distribution network restructuring. Main purpose of the paper is to represent a comprehensive tool to the distribution channel restructuring in order to increase the successful rate of the restructuring project. In distribution channel re-engineering process mostly depends on efficient use of IT to decrease the uncertainty and improve the performance. In restructuring companies have to invest large amount of money to redesigning the existing traditional and fundamental product distribution channel. The methodology is already tested on a petrol company. The described methodology helps to achieve significant savings and efficiency for the case study company. [3]

III. METHOD OF STUDY

The primary method of this study starts from discussion with distribution manager to observe the core challenges and their influential factors. It resembles the idea how the distribution system can be re-structure.

(1) Sources of Data - Majority of the study is based on secondary data. Fifty days distribution data is used for this study which is extracted from system. The information includes “Drivers Salary” “Travel Allowance”, “Fuel Cost”, and “Distance”. Primary data source is face to face interview with the AFBL officials who are responsible for the respective department. Moreover, field review of the distribution system provides information about actual scenario.

(2) Analysis Tools - In this analysis have used excel to analyse the fifty days distribution data. Firstly, analysis the average fifty days consumption of every dealer under Dhaka warehouse to know their consumption pattern. Secondly, by using the fifty days data try find out the daily average consumption, average consumption on every order. Moreover by analysis the data tries to find out on an average point of quantity as safety stock and its delivery time. Even, to propose a well-established shortest route of deliver the beverage product have to used Google map to calculate the distance of every dealer point from Dhaka warehouse of Akij food and beverage Ltd. To do the proper route planning, transportation model and shortest route problems is used through excel solver in this study. Saving algorithm is used in this study for analysis purpose.

IV. DESCRIPTIVE ANALYSIS

The proposed restructuring of distribution system of AKIJ food and beverage Ltd has introduced a proper way to deliver the product. Firstly, On the basis of the forecasted demand of the product and the location of dealer points Dhaka is divided into fourteen routes with applying shortest route problem. Secondly, to fulfill the forecasted demand of dealer points the delivery plan is designed. Huge demand’s dealer point’s delivery will be from the factory by large capacity delivery van. In this area there will be seventeen, thirteen and fifteen times delivery in fifty days. Delivery from direct factory will reduce loading unloading cost. The dealer points which are situated beside narrow roadside its delivery will be from Dhaka warehouse by small delivery van on daily basis. Thirdly, the fuel cost and loading unloading cost is measured. Fuel cost varies delivery van to delivery van for this reason specific per mile fuel cost is used for specific delivery van. In this designed restructuring of distribution system there is scope of reducing loading/unloading and fuel cost. Moreover, Dhaka warehouse has the opportunity to deliver the products by using less delivery van with two trips per day.

V. CURRENT DISTRIBUTION SYSTEM

Presently AFBL have no written delivery plan for the company. Distribution department of the company collect
their order from the dealer’s point and deliver from the warehouse. Firstly the company get order through phone or email and press the order on the company’s excel sheet. Secondly after checking the credit amount of the dealers they finally take initiative to distribute the product. The lead time of the distribution of the company is 72 hours. In the distribution system they store beverage product in the Dhaka warehouse from factory and finally deliver to the dealer points from Dhaka warehouse. As a result they have to pay loading unloading cost three times. The dealer’s order in daily basis on a small amount of product and per case distribution cost is near about 6.87 tk. Present 50 days delivery cost is given below.

<table>
<thead>
<tr>
<th>TABLE I</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESENT DISTRIBUTION COST</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distribution cost of 50 days</th>
<th>Amount(TK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver Salary</td>
<td>397,115.0</td>
</tr>
<tr>
<td>Helper + Delivery man’s Salary</td>
<td>121,256.7</td>
</tr>
<tr>
<td>DA Driver</td>
<td>62,400.0</td>
</tr>
<tr>
<td>DA Helper</td>
<td>10,400.0</td>
</tr>
<tr>
<td>DA Delivery Man</td>
<td>6,500.0</td>
</tr>
<tr>
<td>Loading+ Unload Cost</td>
<td>314,099.0</td>
</tr>
<tr>
<td>Maintenance Cost</td>
<td>229,065.0</td>
</tr>
<tr>
<td>Fuel Cost</td>
<td>638,113.3</td>
</tr>
<tr>
<td>Total Cost</td>
<td>1,778,949.0</td>
</tr>
<tr>
<td>Per Case Delivery Cost</td>
<td>6.8</td>
</tr>
</tbody>
</table>

VI. RESTRUCTURING DISTRIBUTION SYSTEM

In the proposed methodology there are scope to reduce loading / unloading cost, fuel cost and another cost related with delivery. Firstly, delivery product from the factory will save loading and unloading cost .80 taka per case. The distribution point from where there is scope to deliver with five ton delivery van will reduce cost of unloading and loading from Dhaka warehouse. Even with direct delivery from factory will reduce pressure on Dhaka warehouse’s delivery van. Secondly, delivery with 5ton delivery van can meet the demand of many distributor points which will take the fuel cost in an economics of scale.
Moreover, as in the proposed study the delivery will be consecutively for three days: four days and fifty percent on daily basis. As a result, DA of driver and delivery man will be reduced and number of delivery vans will be reduced also.

In the proposed Restructuring Distribution System, Dhaka warehouse will be able to deliver by using seven delivery vans.

<table>
<thead>
<tr>
<th>Route Sl no</th>
<th>Distributor point</th>
<th>3 days order</th>
<th>Total Quantity</th>
<th>Capacity of delivery van &amp; number</th>
<th>Delivery from</th>
<th>Distance</th>
<th>Cost of Fuel (BDT)</th>
<th>Cost of loading/unloading (BDT)</th>
<th>50 days fuel cost (BDT)</th>
<th>50 days loading cost (BDT)</th>
<th>Times of delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adabor</td>
<td>465</td>
<td>4075</td>
<td>5ton capacity delivery van = 2</td>
<td>Factory</td>
<td>12.7</td>
<td>1120.34</td>
<td>1920</td>
<td>8066.698</td>
<td>32.640</td>
<td>17 times</td>
</tr>
<tr>
<td></td>
<td>Adabor</td>
<td>715</td>
<td></td>
<td>4ton capacity delivery van = 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mohammadpur</td>
<td>521</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Dhannondi</td>
<td>587</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dhannondi B</td>
<td>510</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Lalbag</td>
<td>511</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lalbag A</td>
<td>473</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Nazimuddin Road</td>
<td>570</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Nazimuddin Road B</td>
<td>521</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Mirpur10</td>
<td>350</td>
<td>897</td>
<td>3ton capacity delivery van = 1</td>
<td>Factory</td>
<td>3.8</td>
<td>83.6</td>
<td>320</td>
<td>1421</td>
<td>5.440</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ke fuel</td>
<td>383</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mirpur 10</td>
<td>365</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Adabor to Mirpur 10</td>
<td>172</td>
<td>172</td>
<td>5 ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>12.5</td>
<td>162.5</td>
<td>216</td>
<td>188</td>
<td>3.240</td>
<td>15 times</td>
</tr>
<tr>
<td>4</td>
<td>Motijil B</td>
<td>603</td>
<td>2033</td>
<td>5ton capacity delivery van = 1</td>
<td>Factory</td>
<td>8.2</td>
<td>462.7</td>
<td>800</td>
<td>7866</td>
<td>13.600</td>
<td>17 times</td>
</tr>
<tr>
<td></td>
<td>Motijil</td>
<td>401</td>
<td></td>
<td>1ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Khilgoan</td>
<td>472</td>
<td></td>
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<td></td>
<td>Khilgon B</td>
<td>577</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>5</td>
<td>Zigatola B</td>
<td>214</td>
<td>290</td>
<td>1.5 ton delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>2.7</td>
<td>54</td>
<td>360</td>
<td>2700</td>
<td>18.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zigatola</td>
<td>76</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td>Bashundhara Cty</td>
<td>265</td>
<td></td>
<td>From factory truck</td>
<td>Factory</td>
<td></td>
<td></td>
<td>118</td>
<td></td>
<td>20.060</td>
<td></td>
</tr>
<tr>
<td></td>
<td>From factory truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Sutrapur B</td>
<td>280</td>
<td>470</td>
<td>1.4 ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>6.7</td>
<td>273.72</td>
<td>564</td>
<td>13688</td>
<td>28.200</td>
<td>50 times</td>
</tr>
<tr>
<td></td>
<td>Sutrapur</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Motijil to Sutapur</td>
<td>123</td>
<td>123</td>
<td>5 ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>9.6</td>
<td>124.8</td>
<td>216</td>
<td>192.0</td>
<td>2.592</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dhana</td>
<td>210</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dhana B</td>
<td>159</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sayedabad B</td>
<td>221</td>
<td>304</td>
<td>1.5 ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>6.7</td>
<td>134</td>
<td>360</td>
<td>6700</td>
<td>18.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sayedabad</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Madaribazar B</td>
<td>211</td>
<td>304</td>
<td>1.5 ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>6.5</td>
<td>130</td>
<td>360</td>
<td>6500</td>
<td>18.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Madaribazar</td>
<td>121</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Kamrang dorchor B</td>
<td>181</td>
<td>291</td>
<td>1.5 ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>7.2</td>
<td>144</td>
<td>349.2</td>
<td>7200</td>
<td>17.600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kamrang dorchor</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Konapara B</td>
<td>365</td>
<td>308</td>
<td>1 ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>12.3</td>
<td>246</td>
<td>369.6</td>
<td>12300</td>
<td>18.480</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Konapara</td>
<td>144</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Kaundiya</td>
<td>135</td>
<td>135</td>
<td>0.5 ton capacity delivery van = 1</td>
<td>Dhaka warehouse</td>
<td>21.5</td>
<td>279.5</td>
<td>216</td>
<td>3633.50</td>
<td>2800</td>
<td>13 times</td>
</tr>
</tbody>
</table>

| Total Cost | 92943       | 59846       |
| Subtotal Cost Lodging and Fuel | 291408   |
TABLE III
PRESENT DISTRIBUTION COST

<table>
<thead>
<tr>
<th>Distribution cost of 50 days</th>
<th>Amount(TK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver Salary</td>
<td>154,433.0</td>
</tr>
<tr>
<td>Helper + Delivery man’s Salary</td>
<td>94,310.7</td>
</tr>
<tr>
<td>DA Driver</td>
<td>28,000.0</td>
</tr>
<tr>
<td>DA Helper</td>
<td>8,000.0</td>
</tr>
<tr>
<td>DA Delivery Man</td>
<td>7,500.0</td>
</tr>
<tr>
<td>Loading+ Unload Cost</td>
<td>198,466.0</td>
</tr>
<tr>
<td>Maintenance Cost</td>
<td>165,425.0</td>
</tr>
<tr>
<td>Fuel Cost</td>
<td>92,943.0</td>
</tr>
<tr>
<td>Total Cost</td>
<td>749,077.7</td>
</tr>
<tr>
<td>Per Case Delivery Cost</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Forecasted demand of the dealer points and use of inventory tracking will help the company to know current stock of dealer points. As the demand of the dealer point is already known and can assume the consecutively three days demand it will be easy to deliver on right time. If any critical moment and weather influential demand arise, that moment will be managed with the safety stock of Dhaka warehouse. Moreover, in the proposed restructuring model after getting delivery on hand dealer will press another order and before stoke out company will ensure delivery. Finally, every day the distribution department of AFBL have to monitor the current stock of the dealers with the use of IT and if any possibility to stock out of the products they have to take necessary steps to deliver.

VII. RELATIVE ANALYSIS

In the distribution system restructuring of AFBL there are huge scope to reduce the distribution cost, reduce response time and scope to use the delivery van effectively and efficiently.

TABLE IV
COST SAVING

<table>
<thead>
<tr>
<th>Distribution Cost</th>
<th>Cost Saving (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Cost</td>
<td>69%</td>
</tr>
<tr>
<td>Loading+ Unload Cost</td>
<td>37%</td>
</tr>
<tr>
<td>Maintenance Cost</td>
<td>28%</td>
</tr>
</tbody>
</table>

According to the restructuring of the distribution system there is scope of reducing distribution cost. Firstly, transportation cost (including driver’s and helper’s salary, TA, DA and fuel cost) is decreasing near about 69 percent. Secondly, loading and unloading cost is go down near about 37 percent. Moreover the proposed restructuring system required only seven delivery vans which is near about two times less than current number of delivery van. As a result the maintenance cost of delivery van is saving near about 28 percent.

On the bellow figure proposed per case distribution cost has been compared with existing distribution cost. All types of restructure proposed cost is lower than the present distribution cost. Here fuel cost, loading unloading cost and cost of driver and helper’s salary is decreasing in large amount.

VIII. CONCLUSION

The paper represents a cost optimizing methodology for the distribution system of beverage products of Akij food and beverage limited. The goal was to minimize the huge costs of deliver the products to the dealer points by redesigning and optimizing various parameters of cost. The developed methodology showed excellent cost effectiveness for the distribution. Akij food and beverage limited has the opportunity to minimize of its distribution cost fifty seven percent by using this restructuring of distribution system. By applying the proposed methodology the company can be optimized successfully the convenient route, minimized distribution cost and reduce the number of delivery van of Dhaka warehouse. The proposed mythology minimized the route as a result huge amount of fuel cost is decreasing. Even direct delivery from factory is reducing delivery related cost. Moreover, proposed restructuring of distribution system required only seven small delivery vans from Dhaka warehouse.
REFERENCES


Impact of Employee Relations Programs on Integration of Non-Managerial Employees: A Study on Pharmaceuticals Industry of Bangladesh

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Paper ID: ICBM-19-0853

Abstract – This research addresses the possible impact of Employee Relations Programs on employee integration of Non-managerial employees, who have engaged themselves in core production of any industry. The author included 34 programs under four categories of ERPs. The hypotheses were tested to measure the level of significance of relationship between ERPs and different dimensions of integration, such as: organization, management, work, and fellow employees. The analysis shows that the ERPs have significant impact on integration with organization, work, and fellow employees. However, employee integration with the management is not found significant. Among different types of ERPs non-managerial employees preferred direct financial benefits compared to non-financial or indirect financial benefits. Thus, while designing ERPs organization may emphasize more on financial benefits for non-managerial employees. However, the ERPs must be relevant to the type of company, nature of work, and demography of employees.

Keywords – Employee Relations Programs, integration, Non-managerial employees.

I. INTRODUCTION

The quality of a society depends on a quality of work life of that society and quality of work life of that society depends on work and the relationships among management or non-management employees of an organization. In general, between management or non-management employees, the workers should give more care [1] as most of them live in poverty, insecurity, and humiliation.

Traditionally, employee relations program (ERPs) ensures that employees’ rights are protected as it has been described in law. In this research, ERPs have been included to those programs which are beyond legal requirement under labor law, and which are mainly focuses on welfare measures either for the employees, or for their families, or for both.

Thus, the main question of this research is: if the extended ERPs have a positive impact on four different dimensions of employees’ integration process (as identified by the researcher in her previous work). Again, four factors (identified by the researcher in her previous work) also have been used for this study. A set of 20 working hypotheses relating to the ERPs have been used to assess the impact of ERPs on employee integration.

II. METHODOLOGY

The study population covers 58 functional pharmaceutical companies located in and around Dhaka city among 199 Pharmaceutical companies registered under the Drug Administration of Bangladesh (Table 1 contains functional and non-functional pharmaceutical companies, registered in Bangladesh). As sample a sub-set of 10 (ten) companies have been selected from those 58 companies. The employers of this sector provide many benefits to their employees beyond legal boundary. 30 non-managerial employees (workers) from each selected company have been selected using convenient sampling techniques. For collecting information, a preliminary questionnaire was developed in English, however, for better understanding, it was translated in Bengali.

Table 1: Area Wise Pharmaceutical Companies in Bangladesh. (Source: Directorate of Drug Administration).

<table>
<thead>
<tr>
<th>Pharmaceuticals</th>
<th>Functional</th>
<th>Non-functional</th>
<th>Suspended</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dhaka</td>
<td>58</td>
<td>12</td>
<td>9</td>
<td>79</td>
</tr>
<tr>
<td>Gazipur</td>
<td>52</td>
<td>5</td>
<td>5</td>
<td>62</td>
</tr>
<tr>
<td>In other districts</td>
<td>89</td>
<td>11</td>
<td>14</td>
<td>114</td>
</tr>
<tr>
<td>Total</td>
<td>199</td>
<td>28</td>
<td>28</td>
<td>255</td>
</tr>
</tbody>
</table>

To measure attitudes 5-point Likert Scale has been used. The analytical techniques used in this research include: SPSS™ (Statistical Package for the Social Science), version 13.0 for data input. To see the validity of the instrument or questionnaire, reliability test (value of Cronbach’s alpha is 0.922> 0.70 for 300 sample) has been used. Factor analysis was done to identify the importance of different ERPs.

III. RESULTS

It is hypothesized that when employees are provided more ERPs, their attitudes towards organization, management, work, and fellow employees become more positive, and they become more integrated. For the ease of the analysis, ERPs provided by the companies have been divided into four ranges by factor analysis and these are between 0-< 25%, 25-<50%, 50-<75% and between >75-100%.

F_1: Employee Focused Financial Direct Compensation (EF_FDC).
F_2: Family Focused Financial Compensation (FF_FC).
F_3: Employee Focused Non-Financial Compensation (EF_NFC).
F_4: Employee Focused Financial Indirect Compensation (EF_FIC).
To assess the possible association between ERPs and integration, each factor (F_1, F_2, F_3, and F_4) has been analyzed using different test. To examine the significant impact of four factors importance as perceived by the NMEs on employee integration, a set of hypotheses also have been tested. The testing procedures included ANOVA and Independent Sample Test. In Factor analysis the researcher used 10% level of significance (at 5% level of significance all hypotheses become insignificant).

1. **Association between ERPs and Integration (ERPs Included in F_1)**

F_1 (EF_FDC) includes 7 companies who provide 50-75 % of ERPs where 209 employees get these benefits. F_1 also includes 3 companies who provide 75-100 percent of ERPs and only 88 employees get these benefits. The analysis shows that the employees who get more than 75 % of ERPs (those three companies) are more integrated than employees who get less than 75 % of ERPs under F_1 as revealed by NMEs mean score ratings.

Table 2: Group Statistics for Factor_1

<table>
<thead>
<tr>
<th>Attitudes towards</th>
<th>% of facilities provided by the org. for Factor_1</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>att_org</td>
<td>50-&lt;75</td>
<td>209</td>
<td>4.7596</td>
<td>0.52968</td>
<td>0.03664</td>
</tr>
<tr>
<td></td>
<td>75-100</td>
<td>88</td>
<td>4.8153</td>
<td>0.34636</td>
<td>0.03692</td>
</tr>
<tr>
<td>att_mgt</td>
<td>50-&lt;75</td>
<td>209</td>
<td>4.3098</td>
<td>0.70839</td>
<td>0.04900</td>
</tr>
<tr>
<td></td>
<td>75-100</td>
<td>88</td>
<td>4.4489</td>
<td>0.76953</td>
<td>0.08203</td>
</tr>
<tr>
<td>att_work</td>
<td>50-&lt;75</td>
<td>209</td>
<td>4.3182</td>
<td>0.83663</td>
<td>0.05787</td>
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<td></td>
<td>75-100</td>
<td>88</td>
<td>4.4943</td>
<td>0.72017</td>
<td>0.07677</td>
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<tr>
<td>att_fellow</td>
<td>50-&lt;75</td>
<td>209</td>
<td>4.6687</td>
<td>0.54206</td>
<td>0.03750</td>
</tr>
<tr>
<td></td>
<td>75-100</td>
<td>88</td>
<td>4.7273</td>
<td>0.43982</td>
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</tr>
<tr>
<td>overall_at</td>
<td>50-&lt;75</td>
<td>209</td>
<td>4.5141</td>
<td>0.49594</td>
<td>0.03430</td>
</tr>
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<td></td>
<td>75-100</td>
<td>88</td>
<td>4.6214</td>
<td>0.45588</td>
<td>0.04860</td>
</tr>
</tbody>
</table>

H_: ERPs (F_1) do not have significant impact on integration of NMEs toward organization, management, work, fellow employees and overall integration process.

Assuming equal variance, 

- For Organization: significance level is 0.116 (F test), the value of p is 0.364 (t test). That means Ho(F1_org) is accepted.
- For Management: significance level is 0.751 (F test), the value of p is 0.133 (t test). That means Ho(F1_mgt) is accepted.
- For Work: significance level is 0.066 (F test), the value of p is 0.069 (t test). That means Ho(F1_work) is rejected.
- For Fellow Employees: significance level is 0.208 (F test), the value of p is 0.370 (t test). That means, Ho(F1_nme) is accepted.
- Overall: significance level is 0.313 (F test), the value of p is 0.082 (t test). That means Ho(F1_overall) is rejected

Table 3: Independent Samples Test (Factor 1)

2. **Association between ERPs and Integration (ERPs Included in F_2)**

F_2 (FF_FC) first includes 4 companies who provide 1-25 % of ERPs, where 120 employees are getting these benefits, and then includes 1 company who provides 25-50 % of ERPs where 267 employees get these benefits. ERPs (F_2) do not have significant impact on attitudes of NMEs towards organization, management, and fellow employees, but ERPs (F_1) have significant impact on attitudes of NMEs towards management, work, and overall integration processes.

So, ERPs (F_1) do not have significant impact on attitudes of NMEs toward organization, management, and fellow employees, but ERPs (F_1) have significant impact on attitudes of NMEs towards work (Table 3). However, in overall, ERPs (F_1) have significant impact on attitudes of NMEs towards total integration.

F_2 (FF_FC) first includes 4 companies who provide 1-25 % of ERPs, where 120 employees are getting these benefits, and then includes 1 company who provides 25-50 % of ERPs where 267 employees get these benefits. ERPs (F_2) do not have significant impact on attitudes of NMEs toward organization, management, and fellow employees, but ERPs (F_1) have significant impact on attitudes of NMEs towards work (Table 3). However, in overall, ERPs (F_1) have significant impact on attitudes of NMEs towards total integration.
to those who get less than 25%. However, it is not true while consider integration towards management. More ERPs under Factor_2 do not make them integrated towards management.

**Hypotheses Testing for Factor Two**

H₂: ERPs (F₂) do not have significant impact on integration of NMEs towards organization, management, work, fellow employees and overall integration process.

Table 5: ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Org_F_2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.267</td>
<td>1.148</td>
<td>0.319</td>
</tr>
<tr>
<td>Within Groups</td>
<td>294</td>
<td>0.233</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>296</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mgt_F_2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.834</td>
<td>1.578</td>
<td>0.208</td>
</tr>
<tr>
<td>Within Groups</td>
<td>294</td>
<td>0.529</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>296</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work_F_2</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>3.216</td>
<td>5.078</td>
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<tr>
<td>Within Groups</td>
<td>294</td>
<td>0.633</td>
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<tr>
<td>Total</td>
<td>296</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fel_Emp_F_2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.565</td>
<td>2.155</td>
<td>0.118</td>
</tr>
<tr>
<td>Within Groups</td>
<td>294</td>
<td>0.262</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>296</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall_F_2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.809</td>
<td>3.479</td>
<td>0.032</td>
</tr>
<tr>
<td>Within Groups</td>
<td>294</td>
<td>0.232</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>296</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From F test (Table 5),

- For Organization: The P value is 0.319 > 0.10. That is H₀(F₂_org) is accepted.
- For Management: The P value is 0.208 > 0.10. That is H₀(F₂_mgt) is accepted.
- For Work: The P value is 0.007 < 0.10. That is H₀(F₂_work) is rejected.
- For Fellow Employees: The P value is 0.118 > 0.10. That is H₀(F₂_emp) is accepted.
- For Overall: The P value is 0.032 < 0.10. That is H₀(F₂_overall) is rejected.

So, ERPs (F₂) do not have significant impact on attitudes of NMEs towards organization, management and fellow employees, but ERPs (F₂) have significant impact on attitudes of NMEs towards work. However, in overall, ERPs (F₂) have significant impact on attitudes of NMEs towards total integration.

3. Association between ERPs and Integration (ERPs Included in Factor_3)

F₃ (EF_NFC) firstly, includes 1 company, who provides 25-50 %t of ERPs. These benefits get by 30 employees. Secondly, includes 3 companies who provide 50-75 % of ERPs and 90 employees get these benefits. F₃ also includes 6 companies who provide 75_100 %t of ERPs and 177 employees get these benefits. The analysis (Table 6) shows mixed response. The mean attitudes rating are not same for four different dimensions.

Table 6: Descriptive Statistics for Factor 3

<table>
<thead>
<tr>
<th>Attitudes towards-</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizatio n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25~50</td>
<td>30</td>
<td>4.9000</td>
<td>0.18099</td>
<td>0.03304</td>
</tr>
<tr>
<td>50~75</td>
<td>90</td>
<td>4.8250</td>
<td>0.36422</td>
<td>0.03839</td>
</tr>
<tr>
<td>75~100</td>
<td>177</td>
<td>4.7302</td>
<td>0.55994</td>
<td>0.04209</td>
</tr>
<tr>
<td>Total</td>
<td>297</td>
<td>4.7761</td>
<td>0.48276</td>
<td>0.02801</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25~50</td>
<td>30</td>
<td>4.3917</td>
<td>0.70614</td>
<td>0.12892</td>
</tr>
<tr>
<td>50~75</td>
<td>90</td>
<td>4.2194</td>
<td>0.84868</td>
<td>0.08946</td>
</tr>
<tr>
<td>75~100</td>
<td>177</td>
<td>4.4110</td>
<td>0.65836</td>
<td>0.04949</td>
</tr>
<tr>
<td>Total</td>
<td>297</td>
<td>4.3510</td>
<td>0.72851</td>
<td>0.04227</td>
</tr>
<tr>
<td>Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25~50</td>
<td>30</td>
<td>4.6583</td>
<td>0.54331</td>
<td>0.09919</td>
</tr>
<tr>
<td>50~75</td>
<td>90</td>
<td>4.2000</td>
<td>0.90427</td>
<td>0.09532</td>
</tr>
<tr>
<td>75~100</td>
<td>177</td>
<td>4.4082</td>
<td>0.77586</td>
<td>0.05832</td>
</tr>
<tr>
<td>Total</td>
<td>297</td>
<td>4.3704</td>
<td>0.80672</td>
<td>0.04681</td>
</tr>
<tr>
<td>Fellow Employees</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25~50</td>
<td>30</td>
<td>4.8667</td>
<td>0.26042</td>
<td>0.04755</td>
</tr>
<tr>
<td>50~75</td>
<td>90</td>
<td>4.7361</td>
<td>0.41793</td>
<td>0.04405</td>
</tr>
<tr>
<td>75~100</td>
<td>177</td>
<td>4.6299</td>
<td>0.57843</td>
<td>0.04348</td>
</tr>
<tr>
<td>Total</td>
<td>297</td>
<td>4.6860</td>
<td>0.51586</td>
<td>0.02982</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&lt;25</td>
<td>237</td>
<td>4.5414</td>
<td>0.45969</td>
<td>0.02986</td>
</tr>
<tr>
<td>25~50</td>
<td>30</td>
<td>4.4229</td>
<td>0.73121</td>
<td>0.13350</td>
</tr>
<tr>
<td>50~75</td>
<td>30</td>
<td>4.7042</td>
<td>0.34072</td>
<td>0.06221</td>
</tr>
<tr>
<td>Total</td>
<td>297</td>
<td>4.5459</td>
<td>0.48614</td>
<td>0.02821</td>
</tr>
</tbody>
</table>

For organization, the employees who get more than 75 % of ERPs are less integrated than employees who get less than 75 % of ERPs. Also, the employees who get more than 50 % of ERPs under Factor_3 are less integrated than employees who get less than 50 % of ERPs as revealed by NMEs mean score ratings.

For management, the employees who get more than 75 % of ERPs are more integrated than employees who get less than 75 % of ERPs under F_3. But, the employees who get more than 50 % of ERPs under F_3 are less integrated than employees who get less than 50 % of ERPs under F_3.

For work, the employees who get more than 75 % of ERPs are more integrated than employees who get less than 75 % of ERPs. But, the employees who get more than 50 % of ERPs under F_3 are less integrated than employees who get less than 50 % of ERPs. For fellow employees, the employees who get more than 75 % of ERPs are less integrated than employees who get less than 75 % of ERPs. Also, the employees who get more than 50 % of ERPs under F_3 are less integrated than employees who get less than 50 % of ERPs. And on average the overall mean rating attitudes of NMEs who get more than 75% ERPs (F₃) are more integrated than who get less than 75 % ERPs. But who get less than 50 % of ERPs are more integrated than who get more than 50 % ERPs.

H₃: ERPs (F₃) do not have significant impact on integration of NMEs towards organization, management, work, fellow employees and overall integration process.
From F test (Table 7),
- For Organization: The P value is 0.007<0.10. That is \( H_0(F_3_{\text{org}}) \) is rejected.
- For Management: P value is 0.671 > 0.10. That is \( H_0(F_3_{\text{mgt}}) \) is accepted.
- For Work: The P is 0.104>0.10. That is \( H_0(F_3_{\text{work}}) \) is accepted.
- For Fellow Employees: The P value is 0.125>0.10. That is \( H_0(F_3_{\text{emp}}) \) is accepted.
- For Overall: The P value is 0.077<0.10. That is \( H_0(F_3_{\text{overall}}) \) is rejected.

So, ERPs (F_3) do not have significant impact on attitudes towards management, work, fellow employees but have significant impact on attitudes towards organization. However, ERPs (F_3) have significant impact on attitudes of NMEs towards total integration.

### 4. Association between ERPs and Integration (ERPs Included in Factor 4)

F_4 (EF_FIC) firstly includes 8 companies, who provide 0-25 % of ERPs and these benefits get by 237 employees. Secondly, includes 1 company who provides 25-50 % of ERPs and 30 employees get these benefits. F_4 also includes 1 company who provides 50-75 % of ERPs and 30 employees get these benefits.

The analysis (Table 8) shows mixed response. Though, the mean attitudes ratings are similar for all four different dimensions (organization, management, work, and fellow employees). Employees who get less than 50 percent of ERPs are less integrated than employees who get more than 50 percent of ERPs, also less integrated than who get less than 25 percent of ERPs under F_4.

### Hypotheses Testing for Factor Four

\( H_4: \) ERPs (F_4) do not have significant impact on integration of NMEs towards organization, management, work, fellow employees and overall integration process.

From F test (Table 9)
- For Organization: The P value is 0.118>0.10. That is \( H_0(F_4_{\text{org}}) \) is accepted.
- For Management: The P value is 0.121>0.10. That is \( H_0(F_4_{\text{mgt}}) \) is accepted.
So, ERPs (F_4) do not have significant impact on attitudes towards organization, management but have significant impact on attitudes towards work and fellow employees. However, ERPs (F_4) does not have significant impact on attitudes of NMEs towards total integration.

IV. DISCUSSION AND CONCLUSION

Finally, It is a simple fact that the workers do not contribute their best unless the fruit of that effort is assured to them [2].

According to the importance of the respondents, the employee focused financial direct compensation (EF_FDC) got the highest rating. Family focused financial (direct & indirect) compensation (FF_FC) got second highest followed by employee focused non-financial compensation (EF_NFC) which got third rating scores. Employee focused indirect compensation (EF_NIC) got the lowest rating scores. So, while designing ERPs organization may emphasize more on financial benefits as EF_FDC is highly valued among non-managerial employees.

The analysis explains Factor 1 that employees who get more ERPs (EF_FDC) are more integrated (Table 10) towards organization, management, work, fellow employees and overall integration process.

Factor 2 explained that overall integration is more among employees who get more ERPs (FF_FC) towards organization, work and fellow employees. But the findings are different in case of attitudes towards management. Though, this difference is not very significant as the number of respondents is only 30. However, overall employees are more integrated when they get more ERPs.

Factor 3 explained that overall integration is less among employees who get more ERPs (EF_NFC). Integration is high when employees get less than 50 % of ERPs than who get more than 50 % of ERPs.

The analysis explains that overall integration is like U-shape for employees who get ERPs (EF_FIC) under Factor 4. Only employees of two companies get more than 25 % ERPs under factor 4. Among these two, employees of one company get more than 50 % of ERPs. Actually, programs under Factor 4 are less relevant in the case of pharmaceutical industry may in turn cause inverse relation with ERPs.

Results of all factors have been summarized in the following table (Table 10). Thus, the ERPs must be relevant to the type of company, nature of work, and demography of employees. For example, music at work is not relevant to nature of work of employees of pharmaceutical companies.

<table>
<thead>
<tr>
<th>No. of Bene</th>
<th>% of ERPs</th>
<th>Org</th>
<th>Mgt</th>
<th>Work</th>
<th>Fellow</th>
<th>Over all</th>
</tr>
</thead>
<tbody>
<tr>
<td>F_1 209</td>
<td>50 - 75</td>
<td>4.760</td>
<td>4.311</td>
<td>4.319</td>
<td>4.668</td>
<td>4.514</td>
</tr>
<tr>
<td>88</td>
<td>75 -100</td>
<td>4.815</td>
<td>4.450</td>
<td>4.494</td>
<td>4.727</td>
<td>4.622</td>
</tr>
<tr>
<td>F_2 120</td>
<td>0 -25</td>
<td>4.752</td>
<td>4.260</td>
<td>4.208</td>
<td>4.652</td>
<td>4.468</td>
</tr>
<tr>
<td>30</td>
<td>50 -75</td>
<td>4.392</td>
<td>4.658</td>
<td>4.867</td>
<td>4.704</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>50 -75</td>
<td>4.825</td>
<td>4.219</td>
<td>4.2</td>
<td>4.736</td>
<td>4.495</td>
</tr>
<tr>
<td>177</td>
<td>75 -100</td>
<td>4.732</td>
<td>4.413</td>
<td>4.409</td>
<td>4.630</td>
<td>4.546</td>
</tr>
<tr>
<td>30</td>
<td>50 - 75</td>
<td>4.392</td>
<td>4.658</td>
<td>4.867</td>
<td>4.704</td>
<td></td>
</tr>
</tbody>
</table>

Table 10: Impact of ERPs on Status of Integration

Though length of service bonus is not irrelevant in the case of pharmaceutical companies, may not be preferred by all employees. It will be preferred by employees who work with the companies for a long period of time. Fees for children education is preferred by young and middle aged employees. Generally, majority of the non-managerial employees come from village. They generally cannot cope with urban life economically and psychologically. These non-managerial employees generally keep their families in village with their old parents. To them facilities like school for children, indoor or outdoor games are less important. On holidays they prefer to stay with their families in village. Thus, it is important for companies to see the demography of employees while designing ERPs for employees.

REFERENCES

Influence of Electronic Word of Mouth (EWOM) on the Consumer Choice

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Abstract – Key advantage of review websites is that it enables customers to exchange each other’s opinions and information toward their experience. In the present era online reviews have been an influential role for decision-makers, yet not much is known about the impact of eWOM assessment and acceptance. The purpose of this paper is to determine how online reviews affect customers’ decisions. Online users who have experienced review websites have been participated for its hypothetical investigation and collected data has been analyzed using SPSS 17. It is expected that reviews with reliable articulation and more recent and sufficient information will contribute to customers’ purchase of products. The findings of the study would contribute companies to develop proper marketing strategies to encourage consumers’ intentions to visit the market and to minimize negative online reviews.

Keywords – Customer Satisfaction, Electronic Word of Mouth, Internet, Site Quality

I. INTRODUCTION

An oral form of interpersonal non-commercial communication among associates, which was earlier known as traditional word-of-mouth (WOM) [6], has progressed into a new form of communication, namely electronic word-of-mouth (eWOM) communication. With the advancement of the Internet eWOM has become more popular in the present era. The goal of the eWOM paper is to know the effect of different variables in consumers’ purchase decisions. In present situation, consumers’ trust has been reduced in different organizations and advertising, also trust in television advertising has been decreased. Word of mouth (WOM), therefore, provides a clear path to obtain a significant competitive advantage [1]. The nature of the sender-receiver relationship, the richness and strength of the message as well as its delivery, and various personal and situational factors play an important role on the potentiality for eWOM to impact on actions or on perceptions [3].

Management Decision Problem: How can we have a significant number of online customers to buy our products?

Marketing Research Problem: To determine the factors and their impact on the perception of the consumers towards eWOM.

Research Objectives:

1. To identify the factors that influence consumer’s perception towards choosing products.
2. To identify the preferred online platform of different reviews.
3. To identify demographic and psychographic & socio cultural profile of the consumers.
4. To identify preference and acceptance for the online reviews.
5. To find out whether customer’s perception, socio cultural and demographic profile influence them to go for reviews while making any action (usage intention).

II. RESEARCH METHODOLOGY

Many previous studies suggest that ‘Site Credibility’[12], ‘Communicator Attractiveness’[13], ‘Site Quality’[14], ‘Message’[13], and ‘Perceived Expertise’[13]have the deeper influence on the consumers’ purchase behavior. Based on these instruments researcher has developed a conceptual framework from which a questionnaire has been developed to collect responses from the targeted respondents.

To find the impact of online reviews (eWOM) on consumers’ decision making process, researcher has undertaken a Questionnaire Method to quantify the factors of eWOM influencing the consumers, has examined the profile of the target audiences and has tried to draw a conclusion. In the questionnaire demographic and general questions (e.g., gender, age, education levels, income levels, extent of usage) have been asked. All instruments like site credibility, communicator attractiveness, site quality, message, and perceived expertise are measured on multiple choices and 5-point Likert Scales ranging from “1” being “Strongly Disagree” to “5” being “Strongly Agree”. Survey participants have been randomly selected among individuals who have visited different review websites. Before collecting the data, researcher has contacted the experts who have the working experience with the online reviews. An oral Invitation, to encourage participation in the study, has been sent directly to the potential survey respondents. Before conducting the survey a pilot test was administered targeting 20 individuals. The instruments have been revised based on the results and feedback from the pilot test. In mainstream survey, total 200 responses have been collected from which 175
responses have been taken into consideration as 25 responses were incomplete. Correlation and hypothesis have been tested using SPSS 17. Reliability of the variables, multiple regressions, and respondents’ profile have also been analyzed using the same tool.

Hypothesis Analysis

**Site Credibility:** Electronic communication, with the rapid growth of the internet, has become a critical phenomenon (Buttler, 1992). Web credibility is about making websites in such a way that it comes across as trustworthy and knowledgeable. Some causes that make consumer to think that the source site is credible enough. These are- web design, address and phone number visible at all times, make it very easy to contact, message relevance and tailoring, simple language.

**H1:** Site Credibility impacts on the influences of customer’s perception to make using decision.

P-value (.000) and t-value (7.302) demonstrate that site credibility influences customer’s perception to make using decision.

**Communicator Attractiveness:** The communicator is the person who communicates the information. In traditional WOM, sender, generally, who passes information, is known to the receiver. The credibility of the communicator and the message, therefore, are known to the receiver. Many marketing scholars have explained that personal sources of information have a strong impact on the consumer preferences and choices [6, 8]. Similarity and likeability are the two major dimensions of communicator attractiveness that also influence the consumer’s behavior [13].

**H2:** Communicator attractiveness impacts on the influences of the customer’s perception to make buying decision.

P-value (.000) and t-value (4.823) show that Communicator Attractiveness impacts on the influences of the customer perception to make buying decision.

**Site Quality:** With the rapid growth of the internet, electronic communication has become a critical phenomenon. According to [Buttler, 1991], Computer mediated communication such as blogs, message boards and emails can also be included in the definition. The internet has had an insightful impact on marketing. Most consumers are comfortable buying goods online. To attracts customers to visits and revisit their sites online retailers attempt to build web-sites that meet customers’ needs according to the customer’s perspective. Competition has an important place for the improvement of quality and customer satisfaction in web-sites. In the environments where there is no competition that’s to say when demand surpasses the supply web-sites offer their customers unsatisfactory services because of the idea that the customers have no other alternatives and they would accept the present services unconditionally. Site quality changes the customers’ mind to think about the information and attract towards the product or services. The major variable include in site quality are convenience, site design, information usefulness, customer communication.

**H3:** Site Quality impacts on the influences of the customer perception to make buying decision.

P-value (.000) and t-value (12.440) show that Communicator Attractiveness has impacts on the influences of the customer perception to make buying decision.

**Message:** One of the best medium of communications is message. Some factors comes in the fact relevance- refers to the extent to which the messages are applicable and useful for decision making [13], timeliness- concerns whether the messages are current, timely, and up to date [13], accuracy- concerns reliability of the messages, comprehensiveness- of the messages refers to their completeness [13].

**H4:** Messages impact on the influences of the customer perception to make buying decision.

P-value (.000) and t-value (7.532) demonstrate that message has impacts on the influences of the customer perception to make buying decision.

**Perceived Expertise:** Consumers’ attitudes towards the products or sellers significantly influence by the advisors’ reviews, which ultimately influence sales. A matter of persuasiveness is the extent to which a buyer accepts or follows an opinion presented in a review. The persuasiveness of an online review is determined by the credibility of its source (the advisor), because online reviews are written by advisors with varied backgrounds and motivations. Advisors can write reviews no matter if they are capable of assessing a product critically or not (e.g., layperson versus expert) [4].
**H5:** perceived expertise of an individual influences the consumers’ perception to make buying decision.

P-value (.000) and t-value (3.613) show that perceived expertise has impacts on the influences of the customer perception to make buying decision.

**Perception:** The internet and the social media in particular have revolutionized the way people receive, find and exchange information, including product information. Internet users now have access to a wide range of information sources (e.g., news websites, branded websites, and consumer opinions), from which they can choose those sources they decide to trust. These changes in information availability have also affected the way advertising works in the online environment. Today, it is insufficient for an advertiser to just place an advertisement somewhere on the internet and hope that it will be noticed and bring desired results. Advertisers have to utilize media sources that their target audiences choose to trust. As word-of-mouth advertising has commonly been considered the most trustworthy source of information [8, 9], that is directly related with the positive intention towards eWOM, and, when consumers can choose who they trust, it is not surprising that they turn to non-commercial sources for information about products and services.

**H6:** There is a positive relationship between perception towards eWOM and preference.

P-value (.000) and t-value (7.686) demonstrate that there is a positive relationship between perception and preference towards eWOM.

**Preference:** Consumers’ purchasing behaviors have significantly changed by the inevitable flow of information through different social media. Regarding preference, some aspects really affects the intention to choose the eWOM platform before making any purchase decision. That’s basically depends on your perception whether you go for it or not. Credibility, in formativeness and trustworthiness of the information that is provided also influence the perception. [15].

**H7:** Preference impacts on the influences of the customer perception to make buying decision.

P-value (.000) and t-value (4.533) show that preference impacts on the influences of the customer perception to make buying decision.

### III. RESULTS

Correlation analysis, multiple regressions and reliability analysis, and finding have been shown on the part of data analysis.

**Reliability Analysis**

Reliability is the correlation of a scale, item, or tool with a hypothetical one, which accurately measures what it. The overall Cronbach’s alpha value, in the scale reliability test, is 0.887, which means the scale is excellent reliable [7] and could be used to test the content validity.

**TABLE 1**

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Variables</th>
<th>Cronbach’s Alpha</th>
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</thead>
<tbody>
<tr>
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<td>.701</td>
</tr>
<tr>
<td>Communicative Attractiveness</td>
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<td>.702</td>
</tr>
<tr>
<td>Site Quality</td>
<td>4</td>
<td>.704</td>
</tr>
<tr>
<td>Message</td>
<td>5</td>
<td>.717</td>
</tr>
<tr>
<td>Perceived Expertise</td>
<td>3</td>
<td>.703</td>
</tr>
<tr>
<td>Overall</td>
<td>20</td>
<td>.887</td>
</tr>
</tbody>
</table>

**Correlation Analysis**

Correlation is tested for all the variables and all are positively related with perception towards eWOM. Site Credibility (.401), Site Quality (.326), Message (.385), and Perceived Expertise (.349) have moderate correlation with the perception towards eWOM. Communicator Attractiveness (.219) has weak correlation with the perception towards eWOM.

**TABLE 2**

<table>
<thead>
<tr>
<th></th>
<th>Site Credibility</th>
<th>Communicative Attractiveness</th>
<th>Site Quality</th>
<th>Message</th>
<th>Perceived Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>perception</td>
<td></td>
<td>.397</td>
<td>.326</td>
<td>.385</td>
<td>.349</td>
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<td>.535</td>
<td>.684</td>
<td>.209</td>
</tr>
<tr>
<td>Communicative Attractiveness</td>
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<td>.471</td>
<td>.564</td>
<td>.265</td>
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</tr>
<tr>
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<td>.690</td>
<td>.365</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Message</td>
<td>1</td>
<td></td>
<td>.180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Expertise</td>
<td>1</td>
<td></td>
<td>.470</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Multiple Regression Analysis**

To know the predicting power of these independent variables, researcher has conducted a multiple regression analysis. To identify whether the variation in perception towards eWOM can be predicted well by these independent variable requires more study.
The value of the R Square is .333 that shows that only 33.3% of the variations in the dependent variable can be predicted by the variation in the independent variables. So it can be said that the regression model is not a good fit, yet the ANOVA significance (.000) shows that independent variables are the good predictors.

IV. DISCUSSION

Recommendation

This research has a significant impact in the electronic word of mouth platform. This research shows the perception towards the eWOM platform on their buying behavior.

- The business firm should be more focused on their online sites and other online platform so that the consumers get all necessary information and updated information. And regarding this they have to provide up to date information on their demand to have create value
- Business firms should be more focused on electronic platform regarding advertising and communication of their offerings
- All the necessary information should be reliable and trustworthy enough to create awareness on the consumers’ mind.
- Marketers should take the credibility and visual attractiveness of the display platform into consideration for designing their reviews.
- Marketers or business firm should also focus on the relevance, comprehensiveness, accuracy of the messages delivered on demand of the information seeker.

Limitations

- Although the research has been conducted on a diverse group of people in terms of profession, the sample are concentrated in almost the same socio-economic segment and the same geographic area Dhaka, a clearer picture of our country could be drawn after expanding the research into other socio-economic and geographical segments.
- There might have some other factors that can influence the buying behavior of the consumers.
- Regarding survey some respondents were marking all the questions without his/her proper attention which caused some crucial problem with the survey.

V. CONCLUSION

The findings of the paper are as- first, the information quality and source credibility of online reviews have a positive effects on the usefulness of information. Next, the usefulness of online reviews has a positive effect on purchase intention. Finally, customers using peer-created reviews are affected by the credibility of information whereas customers using expert-created reviews are affected by the expertise of information. The results will draw managerial implications to construct proper marketing strategies including reliable articulation, more recent and sufficient information, and the increase of product awareness to bring out more customers’ to purchase.

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A Study on Financial and Social Significance of Festivals and Cultural Events in Bangladesh

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Abstract – Festival and cultural event has its own share of jubilation and importance. Celebrating the festival means respecting that event and accepting as a positive influence in human life. People usually spend more money during the festivals. That is the reason behind the increment of money circulation in the economy during festivals and cultural events. The purpose of this paper is to determine how money circulation occurs during festivals. To get the conclusion of the study, some interviews have been taken and a survey has been conducted. Enormous demand of money has been observed during festivals and cultural events. Therefore, the financial institutions circulating the money face some record transactions or shortages of fund and sometimes they need to borrow money from other financial institutions for the shortage of fund. This study will help to understand details about the circulation of money during festivals and the management of crisis by financial institutions.

Keywords – BFI, NBFI, Call Money, Money Market

I. INTRODUCTION

Economy is an important factor of a country to justify how much a country is capable or supportive to its financial sector. It can help to provide a proper solution to reduce the waste of product and show the proper vision in the future. Macro-economy is more suitable than Micro-economy when we justify our country’s economic development. Festivals and cultural events may affect the economy more than the normal economic condition of a country as festivals and cultural events affect the normal life style of local citizen. From a historic perspective, each festival and cultural event has a very specific significance such as arrival of a season, or the victory of good over evil, or the birth of god etc. Celebrating the festival and cultural events means respecting that event and accepting as a positive influence in our life [3]. But, today's time and society is very different. People are more advance than before. And, in today's modern and competitive world, we like to connect ourselves with too many festivals. As our society has become more modernize and our thoughts have become more commercial, we want to enjoy maximum types of festivals and cultural events, relevant to our society and culture, just to get some extra holidays or to perform some other activities like shopping, get-together with friends and family or enjoying the beautiful atmosphere of festivals etc.

Eid-ul-Fitr and Eid-ul-Adha are the most spectacular festivals for Muslims. These festivals are recognized all over the world. Commercial banks, under the financial institution (follow the financial bank act 1990), seem too busy during the Eid-ul-Fitr and Eid-ul-Adha. Most of the account holders are involved in financial transaction with banking and non-banking financial institutions during the Eid. For that reason, commercial institutions must take loan from the call market for liquidity storage to prevent the crisis. During the Eid-ul-Adha a huge number of cattle are sacrificed and it also contributes to the total money circulation. In addition, many people go for Hajj, which includes money out-flows from the country [1].

But Eid-ul-Fitr or Eid-ul-Adha is not the only festivals for Muslims; they have other festivals too. Such as, Shab-e-Miraz, Layla tul Qadr, Hijra, Muharram, Waqf al Arafa and Eid-E-Milad-un-Nabi [2].

Durga Puja is the biggest religious festival for the Hindu community. People celebrate Durga Puja for 10 consecutive days. Here it is also observed that people use to spend more than normal days during Durga Puja. There are also many religious festivals followed by Hindu community. Those are – Savitri Puja, Holi, Diwali, Bhai Dooj and Hanuman Jayanthi [2].

In addition, Christians and Buddhist have their own festivals. During the festivals, they also spend a large amount of money. To support customers from these religions, financial institutions usually arrange to maintain liquidity in order to counter crisis during festivals and an important increment of money circulation can clearly be seen in the economy of our country.

The main purpose of making this paper to understand social and economic impact of festival in Bangladesh. The analysis that has been conducted in this study will give some sought of idea about what kind of problems the general people and the financial institutions face during the time of festival, how it is managed and how our economy is benefited from this.
II. METHODOLOGY

Source of Data: For this paper, two types of sources of data have been used. One is Primary and another one is secondary.

**Primary Sources of Data:** Primary data or original data that has been collected from banking financial institutions and non-banking financial institutions-
- Self-administered questionnaire
- Personal Interviews
- Direct observation
- Perceptions of employees of financial institutions
- Face to face conversation with the employees of related fields.

Primary source of data helped us to interpret the data in a better way and address specific research issues. On the other hand, some problems were arisen with primary source of data, which were time consuming and costly.

Secondary Source of Data – Secondary data or minor data obtained from some other sources of this research topic. Such as –
- Journals / Periodicals
- BFI and NBFI web-sites
- Magazines / Newspapers
- E-journals

Limitations of Sources of Data: It would be easy to find and collect data but need to be aware of some limitations the data may have and the problems that could arise if these limitations are ignored.

- The information and data may be incorrect, for that the source of data must be checked
- Shortage of time
- Secondary sources are not that much available
- Employees were busy with their work
- Some financial institutions have not given the appointment to meet with their employees.

III. RESULTS

**Interviews**

Four interviews were from different financial institution for this project as it is very important to come up with some vital point and information. The institutions are central bank (Bangladesh Bank), private commercial bank (Islami Bank Bangladesh Limited and Mutual Trust Bank) and non-banking financial institution (ASA).

These interviews were taken from different institution to know the condition during the festivals and cultural events. The four vital interviews for the project are given below-

Bangladesh Bank: One of the senior officers of Bangladesh Bank came up with his remark about Bangladesh Bank’s functions and condition during festivals and cultural events. He was asked a question about how much money the central bank inflicted during the last festival. He answered that 26 thousand crore of different denominator have been inflicted during the last festival observed from the main branch of Bangladesh Bank. Another question was asked from him that every year during the festival, this same amount of money be being implicated by the Bangladesh Bank or not? He replied that - Due to the increment of the salary structure of government employees, the demand of money was huge. That’s why last few years the amount was huge compare to past years. He also added that at present there are more than 55 schedule banks in Bangladesh and these banks obey the rules and regulations formulated by Bangladesh Bank. Those banks are situated in Dhaka making transaction through their respective account placed in the Bangladesh bank Dhaka office. Dhaka office made taka 21000 crore transaction before the Eid-ul-Fitr in 2018. This amount was really huge. Generally, per month transaction ranges from 2500-3000 crore taka. But during a festival this takes many folds. After the Eid, there was excessive money in the market that’s why the inflection in balance Bangladesh Bank withdraws taka 18000 crore from the market. He also told that BB introduces the new money during festivals and cultural events. And the person also agreed about boosting economic and social condition during festivals and cultural events. And he also mentioned that festivals and cultural events increase GDP and money circulation and it demonstrate good stewardship of public funds.

ASA: One of the leading Microfinance Institutions (MFIs) and the best managed MFI in the world. The microfinance program of ASA was developed in such a manner that women could access it easily and derive maximum benefit out of the schemes by investing their borrowed money. This organization lends women for different purposes. A question was asked to an officer of ASA about who works in Bogura district and how they manage the fund by providing short-term loans to the village women. His answer was -Large quantity of animals is needed to be sacrificed in the Eid-Ul-Azha, which is one of the largest festivals in the Muslim community. ASA provides short-term loans for these purposes and it is about 2 to 3 months before the occasion. In 2017 ASA disbursed total BDT 20 Crore among the poor women in Bogura. They usually return the money with interest after the Eid. This is a special scheme for women before the Eid and it helps to improve condition of some people. He added that sometimes they face liquidity shortage as many borrowers want to take loan during festivals. But the number of depositors during festivals and cultural events become lower than other time. And the incentives they get during festivals and cultural events are satisfactory and it motivates them to give their best effort, he added. In similar way they use to manage the operations of all branches during festivals. Islami Bank Bangladesh Limited: When it was asked for the information about the withdrawal situation during a festival, the employees have mentioned that mentionable increase is observed in withdrawals during festivals. It is
found that the percentage increases by 30-50% in Eid, Pohela Boishakh or other festivals. They have also provided the information about how they use to manage any crisis or rush situation during festivals. They have pointed out some measures they usually take such as

1. All technical aspects are reviewed so that technical failure cannot hamper customer service.
2. Sufficient funds are kept in the vault so that any liquidity crisis cannot be occurred.
3. Prior to festivals, instructions are given to all staffs to provide service promptly.
4. ATM booths are kept active 24 hours.

They have also told that interestingly it is found that festivals encourage some people to deposit money and it is increasing more than normal time by 5-10%. They have also mentioned that, to manage the rush of these financial activities they use to arrange extra ATM booths, extra counters are provided to provide service smoothly, sufficient liquidity is reserved, and extra security measures are taken by the bank authority to avoid noises. They have also provided an information about the non-banking financial institutions that it is commonly seen that people go to non-banking financial institutions for early settlement of their time deposit during the festivals to meet the extra expenditure for making the festival more celebratory.

Mutual Trust Bank: We asked them usually how much the withdrawal increases during any festival. They answered that the number of increase in withdrawal is approximately 40% and sometimes is about 50%. Normally it is seen that there is a huge rush in financial institutions and they use to take different measures to manage those rush such as strict security system. People are more interested in drawing money during festival comparing to the normal time. For that reasons the bank authority use to take all the steps to fulfill the customer demand. They have to keep extra fund before festival. They always try to avoid taking loans from Bangladesh Bank to satisfy the increased demand, but it happens that sometimes they face such kind of situation that they had to take loans from Bangladesh Bank.

**Participant Observation**

Participant observation (Financial Institution):
Festivals and cultural events put a great impact on social economy. Bangladesh Bank supplies huge amount of money in the market for covering the pressure. Different financial institutions contribute money in the market. In this situation money supply and demand increase in the whole economy and also increase the income of people. Credit card using rates increase and they gets discount. Many of the financial institutions doing different types of work like ASA lend money to woman for different purposes. So that they could access easily and gets maximum benefits. Due to the increment of money supply in the economy, liquidity also increases.

Participant observation (Client):

Festivals and cultural events impact on the social economic arena. At this time people expend and withdraw lots of money for festival purpose. Money circulation is increase over the economy and employments also increase. For that reason sometimes financial institutions facing shortage of liquidity and sometimes some financial institutions can not able to give the proper service to the clients. That’s why they offer the higher interest rate on deposit during the festivals and cultural events for increasing their money and ensure the proper service to the clients. Government and sponsor give the financial support. The remittance of the country is also increase for the reason of export and import.

**Survey**

From a massive amount of clients of BFI & NBFI, 100 clients were selected who make transaction in different financial institution in cities including Dhaka. Both male and female were selected randomly for the survey. This survey helped a lot for getting a total view of the role of BFI and NBFI during the festivals and cultural events. Except this some financial institution were also visited and discussion had been conducted with the employees of those institutions about the transaction and condition during festivals and cultural events. As the population, size is big and everyone has some different ideas and opinions, so it was difficult to come up in a final discussion with this small sample size. From the survey of 100 people a result has been concluded, which is described below-

- Festivals can bring Economic and Cultural Benefits:
- From the survey analysis, it has been found that 86% of the respondents support that festival can bring cultural benefits and 14% respondents support the opposite. Actually, for the festivals and cultural events, people spend a huge amount of money and it influences the economy, society and cultural sectors.
- Sources from which people want to spend in festivals:
  - 75% of the respondents said that they want to spend money from their personal income or bonus. Whereas few respondents (25%) responded that, they would like to take short-term loan from financial institutions if they face shortage of personal sources.
- Service quality during festivals:
  - 64.3% respondents said that financial institutions failed to provide appropriate service during the rush time. On the other hand, 35.7% respondents agreed with the statement that financial institutions were able to handle the rush during the festivals.
  - Another question was ‘how frequent financial institutions failed to provide their service’. 66.2% respondents answered that sometimes financial institutions failed and 33.8% said that they failed very often.
V. CONCLUSION

Festivals and cultural events bring economic and social benefit for a nation. A massive change of circulation has been observed during these events through different financial institutions. Financial institutions face liquidity shortage for heavy rush in terms of managing fund. People have a tendency for withdrawing money for fulfilling their desires. The percentage increases by 30-50% during Eid, Pohela Boishakh or other festivals. In contrast, businesspersons deposit a large amount of money in the financial institutions as they earn more during these seasons. Financial institutions take several initiatives to circumvent liquidity shortage such as call money, sufficient fund in vault and provide training to their staffs. From this paper, learners get to know the situation of circulation of money from the view of financial institutions as well as the view of their clients. This paper will contribute to the corporate world as well as society.

REFERENCES


Social Commerce Success Factor: Social Network Strategy, Technology Capability and Muamalat Practices

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Abstract – Social commerce has become a common online business in Malaysia. The country’s information and communication infrastructure maturity, the citizens’ digital skills and the business capability are some of the driving factors. However, the social commerce simplicity and open interaction call for data and business protection need. In addition, as more and more Muslims are participating in social commerce, it is imperative to ensure the practices comply with the Islamic business rules. In this study, we examine what factors determine social commerce success. Building from the social network strategy model, resource-based theory and the Muamalat Principle, a survey to social commerce operators was conducted. The results of the PLS-SEM hypothesis testing provide the evidences of the importance of each factor. We believe by conducting the study, it will stimulate for more honest, trustworthy and reliable business-social networking sites for the Muslims. We also provide recommendations and future research strategies.

Keywords – Social Commerce, Muamalat Principle, Social Network, Social Media Islamic Business

I. INTRODUCTION

In social commerce, the relationship between businesses and customers is essential. As emphasized by [1], there is a vital role of Islamic value between businesses and customers. Whereas, businesses who fail to implement Islamic relationship value would be fail to sustain in a long-term relationship with their customers. Thus, by practicing absolute honesty which was also the sole practice of the Prophet Muhammad SAW requires that all business transactions must be based on the fundamental principle of mutual cooperation for the highest possible level of mutual benefit for both businesses and customers. Any dishonest practices, for instance lying and cheating will render a business transaction unlawful because there is no longer a mutual consent. Thus by all means, without a mutual consent by both businesses and customers, the long-term relationship will be difficult to achieve.

Hence, the purpose of this research is to examine the relationship between the Islamic values, measured as the Muamalat principle and social commerce success, along with the importance of technology capabilities and social network strategies as the success determinants. Muamalat principle has been used as the guidelines to ensure the efficiency of social commerce success without disregarded the practices of Islamic values in business.

II. REVIEW OF LITERATURE

A. THE EMERGENCE OF SOCIAL COMMERCE AND ITS SUCCESS MEASUREMENT

Since the birth of the Internet, there are profound innovations in technology, theories, business models and concepts that have shaped our interactions. In the Internet environment, the Web 2.0 features of personalized and socialized characters have changed the nature of Internet users. With the evolvement of Web 3.0, the changes are greater. Utilizing Web 3.0 features in the social media allows consumers to engage in online purchasing via ‘purchase via comment’, ‘payment via hashtag’, ‘in-stream transaction’, ‘reduce clicks’ and ‘make transaction viral’. Consumers increasingly use digital media not just to research the products and services, but to engage the businesses they buy from, as well as other consumers who may have valuable insights [2].

Social commerce has attracted the interests of many. Similarly, many studies have examined its adoption factors. Yet, the studies mostly focus on customer’s intention [3, 4, 5] As social commerce is fundamentally built based on social networking and it works as an online purchase channel, the value measurement should not be much different from e-commerce success dimensions. Therefore, adapting the e-commerce success measurement and incorporating social networking features, the values and the success are measured as social commerce site traffic, brand image, reputation and follower growth.

Social commerce Site Traffic

Hanna et al., [6] stated that the key performance indicators to measure social commerce success have been through the long attempted to identify. This is no less a priority with social media strategy. The traditional metrics for reach and awareness are still viewed by the business operators as critical to measure the social commerce success. Recognition of the internet is driving business operators in traditional companies to conduct transactions on the Internet [7]. The committee of Web Analytics Association Standards defined the three most important metrics as Unique Visitors, Visits or Sessions, and Page Views, and also categorized search engine marketing metrics through counts (visits), ratios (page views per visit), and key performance indicators (KPIs). The main reason for measuring search engine marketing (SEM) as the success
criteria is based on the evidences that there is increased traffic volume (76%), conversion rates (76%), click-through rates or CTRS (70%) and return on investment (67%). Progressive improvement of SEM campaigns, conversion rates, and website performance are available through web metrics, which would result in an increase in profits, happier customers, and higher return on investment (ROI) by tracking progress over time or against the competition.

Company Reputation
Company reputation is another measurement of social commerce success. Company reputation essentially signifies the success or failure of its brand. Poor brand decays the company reputation. The emergence of social media brings with it several threats to business reputation. People can easily generate, edit and share content with others. Such interactions and customer-generated content can be a threat to businesses since customers take an increasingly active role as market players through social media and are able to reach a wide audience. As social commerce is subject to open interactions, the business operator’s ability to uphold its brand for customer loyalty calls for a special attention as a social commerce success. This reflects the power of social media to combine both brand affinity (e.g., Likes) and sales conversion within the same platform.

Brand Image
The success of social commerce can be measured by the brand images of the business. Popular brands attracted more consumers as people like to be associated with brands that are truthful and reliable. The image could be revealed through product reviews and comments from the consumers. Potential and existing consumers tend to trust and believe what is written on the social media because of their willingness to rely on the words, actions, and decisions of other members in the social commerce community. Prior studies have found that trust toward members positively affects online participatory behavior, such as getting and giving information in the focal community.

Follower Growth
Followers on social media are the potential consumers for the business. It is important to build a steady follower trail on social media sites as it is important to keep the followers engaged. In order to keep the consumers engaged, the business should create an emotional bond in order to keep their attention. A specific example is to share a video tutorial on baking and decorating for an enhanced customer excitement. One significant finding was drawn from who concluded that social network strategy is crucial in regulating the success of social commerce.

B. SOCIAL COMMERCE SUCCESS FACTOR

SOCIAL NETWORK STRATEGY
In social commerce, the businesses are required to understand the objectives of every social network platform and develop the marketing activities based on the relevant attributes of the social networking tools. Social network is not about websites, but it is all about experiences. By understanding the model, ability to react and respond to consumers’ demand is better. According to [8], social network is the platforms for influence, whereas it has radically changed new ways of interacting. This is supported by [9] who noted that there are literally hundreds of different social media platforms (e.g., social networking, text messaging, shared photos, podcasts, streaming videos, wikis and blogs). In addition, [10] highlighted the importance of mobile devices (e.g., smartphones) for accessing these platforms. Because of the myriad social media and networks available, it is not surprising that business operators are actively experimenting on several of major platforms. Hence, it is importance to understand the efficiency of social network platform in social commerce success. There are three aspects of social network strategies are important; publicity, content and interactivity [11]. Based on the discussion, the following hypothesis is offered:

HI: There is a significant relationship between social network strategy and social commerce success

TECHNOLOGY CAPABILITY

Technology is one of the fundamental components in social commerce. As social commerce is usually conducted on a website, studies have shown the importance of its website quality which are service quality and system quality [12]. The quality of site is determined by system functions and services. A good system quality allows users to use the site to fulfill their needs. A good service quality can help consumers gain the full power of the Website satisfactorily by matching consumers’ expectations. High-quality social commerce sites can help users to conveniently connect and exchange information with their contacts. Therefore, enhancing the perceived system and service quality is important for social media operators. In addition, the social interaction feature is the fundamental platform of social commerce. Therefore, being incompetent is a form of interaction ignorance. It is important for business operators to clearly understand the objectives of every social media platform and develop business strategy based on the relevant attributes of social media tools. Business operators must be able to know their target group for their business and what tools that are mostly used by their target groups for effective marketing strategies. To attract Muslim consumers to do business transactions using social commerce based on the website quality and social media competence alone is not enough. Showing Islamic features and upholding the Islamic principles in business can help increase the viability of the online business. Thus, the following hypothesis is offered:
**H2: There is a significant relationship between technology capability and social commerce success**

**Muamalat Principle**

‘Muamala’ means affairs in Arabic. In the contexts of social commerce, affairs can be related with the relationship between social commerce business operators and consumers. To build the relation between both parties, it is inseparable from spiritual dimension. Thus, in this case a relation that is built by Islamic values [13]. This study supported by [14] who explained that high relationship quality becomes competitive advantage for businesses. Whereas, the relationship quality affects by the cultural approach that is done by the consumers. To build a good relation through Islamic values requires getting the agreement from both parties.

While the muamalat principle is quite extensive, there are three main aspects that are closely associated with social commerce which are ethics, marketing and transaction. In explaining for business and online ethics, there are established guidelines to be followed when involved in any interaction. Both business operators and customers must strictly follow the ethical principles such as choosing the right words, so that no one will feel offended. In social commerce, the Islamic conduct should be upheld to ensure equitable business transactions, involving purchasing and selling activities. To do this, business operators should practice clear business transaction. The buying and selling activities should be on mutual consent and not under coercion. Islam strictly prohibits such dealings in which both parties are not clear in terms of their roles, actions and other business specifications. Al-Quran tells us that every Muslim businessman must write down the agreement when dealing with the other persons and both parties must be clear with the transaction.

In addition, marketing is one of the fundamental business core functions. In an open interaction business, there is no barrier in global marketplace, but it has to be conducted with sincere honesty. Prophet Muhammad S.A.W particularly emphasizes that honesty and kind dealings with customers are the secret of success in business. “The truthful and honest merchant is associated with the Prophets, the upright and martyrs” (Al-Tirmidhi). In another hadith, “Allah shows mercy to a person who is kindly when he sells, when he buys and when he makes a claim” (Al-Bukhari). Alom and Haque [13] stated that in Islamic marketing, the ethical standard is not compromised. Hence, it can bring good luck for all the businesses in the market irrespective to their race, religion and classes.

Furthermore, transaction plays significant roles in buying and selling processes. It is a crucial activity that must be done with full honesty in order to achieve social commerce success, which is in line with the Islamic teaching. There are growing concerns among social commerce consumers particularly Muslims in Malaysia regarding online transaction both from security aspect and Shariah perspective. The first issue is regarding the medium of transaction via online and the second issue is pertaining to the mode of payment, which is using credit card. Purchasing online using credit cards is no longer a new trend; hence the challenges arise in looking for Shariah compliance solutions. However, securing transaction online must fulfil two main requirements. The first requirement concerns how to protect the data from the unauthorized parties (confidentiality) and the second requisite is how to guarantee the integrity of the transaction. In order to guarantee the integrity, therefore in Islam, ‘aqd is very important. Therefore, the following hypothesis is offered:

**H3: There is a significant relationship between muamalat practices and social commerce success**

### III. METHODOLOGY

**A. Population, Sample Size and Instrument**

The population of the study was Muslims’ social commerce business operators. The decisions to only focus on them is for group homogeneity. Using the G*power calculator to determine the number of samples, a total of 151 for the sample size was suggested. Social network strategy was measured as publicity, content and interactivity, technology capability was measured as site quality and social media competency, while the muamalat practices were measured as ethics, marketing and transaction. The social commerce success was measured as site traffic, company reputation, brand image and follower growth. The items to measure the constructs were adopted from various sources. Items to measure social network strategy were based on social network success factors model [11], technology capability [15], Muamalat practices [1] and social commerce success [6, 16]. Face and content validity procedure was performed to seek the opinions from the experts in the field. Prior to the actual data collection, a pilot test was conducted and the results of the internal consistency score provide the evidence of the reliable concept measurement. In total, 151 responses were obtained. Using the PLS-SEM, the data was used for the measurement and the structural model.

**B. Assessment Model**

The conceptual model was empirically analysed using SmartPLS version 3 for confirming on the validity and reliability. All items were loaded according to the constructs. The internal consistency score and the convergent validity that include composite reliability (CR) and average variance extracted (AVE) for the reflexivity constructs are shown in Table 1. All of the item loadings exceed the minimum recommendation value of 0.6, which is required for an exploratory study [17]. All constructs meet the minimum value of the threshold requirement of composite reliability (CR) > 0.7 and average variance extraction (AVE) are greater than the minimum value 0.500 as suggested by [18].

| TABLE 1 |
Next, a discriminant validity procedure was conducted to observe how the constructs are truly distinct from one another. This is achieved by assessing the cross-loading criterion, Fornell and Larcker’s (1981) criterion and Heterotrait-Monotrait ratio of correlations (HTMT). Based on the results of Fornell and Larcker’s criterion there is a clear evidence of the discriminant validity establishment following the suggestions of Kline [19]. The square-root of the AVEs of all latent variables are higher than the correlations on other variables. As there has been criticism on the usage of Fornell-Lacker’s (1981) criterion to detect discriminant validity, HTMT ratio correlations as suggested by [20] that offers a stringent of better discriminant criterion was used. The results of the HTMT inference using bootstrapping show the lower and upper confidence intervals do not include the value of 1. Therefore, it is confirmed every construct is truly distinct from one another.

### IV. RESULTS AND FINDINGS

In this research, three direct hypotheses are developed between constructs. In order to test the significance level, t-statistics for all path are generated using SmartPLS 3.0 bootstrapping function. PLS algorithm was used with a bootstrapping resampling technique of 500 sub-samples for ensuring the accuracy of the PLS estimates as recommended by [18]. Based on the result of the path coefficient as shown in Table 2, all three relationships are found to have t-value > 1.645, thus significant at 0.05 level of significance. Particularly, the determinants of social network strategy (β = 0.409, p < 0.01), Technology Capability (β = 0.423, p < 0.01) and Muamalat practices (β = 0.130, p < 0.05) are positively related to social commerce success. Next, the values of coefficient of determination (R²) of 0.694 suggests the exogenous constructs explain 69.4% of variances in social commerce success, which [21] considered as moderate. Thus, it could be concluded H1, H2 and H3 are supported. Additionally, the R² values that represent the effect size of a specific exogenous construct on the endogenous construct [18] were also assessed. As asserted by [22] “while a p-value can inform the reader whether an effect exists, the p-value will not reveal the size of the effect. From the results, it can be observed that technology capability has a large effect in producing the R² for social commerce success.

<table>
<thead>
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<th>Hypotheses</th>
<th>Std Beta</th>
<th>Std Error</th>
<th>t-value</th>
<th>p</th>
<th>R²</th>
<th>f²</th>
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Based on the results, there are three main findings to be discussed. First, while past studies have indicated the importance of social network strategy to social commerce success, the results of the analysis show there is a significant relationship between social network strategy and social commerce success. One possible explanation is the social network is the main platform for social commerce. The users of social network not only using the social network to interact, but also as a potential customer for social commerce business operator. Hence, the constraint in operating social commerce business is more to how they understand the factors of social network success. Second, technology capability also has a significance relationship with social commerce success. Logically, social commerce without the technology would not be exists. It is like having an internet without a computer. Hence, the technology such as computer, mobile phone or smart phone plays vital roles as the channel to provide and deliver the information from the business operator to the customers. Third, there is a significant relationship between Muamalat practices and social commerce success. It is undeniable that Islam is a source of value and ethics in the whole aspect of human being life, including discourse of business. Prophet Muhammad S.A.W is the role model in doing a business regardless the evolution of business has been evolved. Ethic is one of the crucial aspects as a guideline that should be executes by Muslim’s business operator [23]. Furthermore, in social commerce business operator frequently interacted with their customers through online. There is a reference in the Holy Quran that said:
“For you in the messenger of Allah is a fine example to follow.” (Surah Al-Ahzab 33:21).

V. CONCLUSION

Social commerce will continue to evolve. With technology advancement, the name may be changes. However, regardless of the changes, one shall not deviate from the Islamic conduct. This paper has supported that social commerce should comply with Muamalat principles for its success. Based on the essence of social commerce of business management, technology capability and social network strategy, we believed that these business activities must governed by the Muamalat Principle of marketing, ethics and transaction. In future, we hope more research will be conducted to empirically evaluate the success of social commerce from the aspect of Muamalat principle. Whereas this paper only focus on three dimension of Muamalat principle (Ethic, Marketing and Transaction).

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Social Enterprise Value Chain: Evidences from Malaysia

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Abstract – Social enterprise is the third sector economy that addresses the social, economic and environment agenda. Research on social enterprise values have placed a great emphasize on evaluating the financial and organizational performance rather than the economic impacts to the society. In addition, while the end values are greatly emphasized, the value chain is less focused. Therefore, the study aims at understanding how social enterprises create not only the social values, but how the values grow and create other positive social impacts. Setting on the cases of social enterprises in Malaysia and the social bricolage concept, the findings indicate the bottom up social enterprise typology creates more chain impacts to the resource providers, the service recipients, the social entrepreneurs, and the related agencies. The value chain creations are: inter social innovations - social inclusion - sharing economy and social empowerment through shared ownership, financial independence, self-sustainable and strategic alliance. As the world is facing complex social and economic issues, we suggest social enterprise as an agenda for creating a sustainable public wealth.

Keywords – social enterprise, social enterprise value, value creation, shared value

I. INTRODUCTION

A social enterprise (SE) is a commercial business which is established with the main agenda of creating positive social changes and social values. Through a detailed conceptual work based on the third sector economy philosophy, [1] defined social enterprise with both economic and social indicators. Economically, social enterprise is a continuous activity producing and/or selling services, involves a high degree of autonomy, comprises a significant level of economic risk and a minimum amount of paid work. In the social context definition, SE aims at benefiting the community, launched by a group of citizens, a decision-making power not based on capital ownership, a participatory nature and limited profit distribution. A simpler definition is offered by [2] which is “process involving the innovative use and combination of resources to pursue opportunities to catalyse social change and/or address social needs”.

Social enterprise originated from social economy; an area that focuses on not for profits strategies that attempts to increase society income, thus contributes to social and community development [3]. As more and more societies are engaged, people look at SE as a tool of alternative economic empowerment for the less fortunate communities. Years ago, [4] claimed the concept was rarely discussed. However, SE is now making a major breakthrough and has become one of the agendas in many institutions, for instances the Social Enterprise Initiative at Harvard Business School, Social Entrepreneurship Program at both Stanford Graduate School of Business and Said Business School, University of Oxford.

SE is not only targeting at the social and economic issues. But what is more important is the creation of the shared values. Shared values as indicated by [5] focuses on the connections between societal and economic progress and has the power to unleash the next wave of global growth. The concept fits with the SE operation and strategy. While many researches have indicated the goals achievement of the social, economic and environment, the value chain is less focused. Therefore, the study aims at understanding how social enterprises create not only the social values, but how the values grow and create other positive social impacts. Setting on the cases of social enterprises in Malaysia and the social bricolage concept, and exploratory study was conducted that aimed to understand the creation and the chain of the SE shared values.

II. REVIEW OF LITERATURE

A. SOCIAL ENTERPRISE MODEL

In understanding the social enterprise as a model, the matrix of public-private and commercial-social offers a basic visualization. As depicted in the 2x2 grid as Figure 1, social enterprise is in the category of private-social business model.

Primary objective

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Commercial</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>Private enterprises</td>
<td>Social enterprises</td>
</tr>
<tr>
<td>Public</td>
<td>Public enterprises</td>
<td>Public administration</td>
</tr>
</tbody>
</table>

Fig. 1. Classification of business model (Wolfgang, 2012)

Based on [6], social enterprises should fulfil the following criteria:
i. it must be driven by a social mission (i.e., abstain from distributing profit to shareholders);
ii. it must generate for positive externalities (spillovers) for society;
iii. it must recognize the centrality of the entrepreneurial function;
iv. it must achieve competitiveness on markets through effective planning and management.

However, the classification could further be entangled by focusing on the different types of social enterprises. A work by [7] outlines SE which is based on profit/nonprofit-orientation and sources of funds which draw into three major categories; 1) Leveraged non-profits, 2) Hybrid non-profit ventures and 3) Social business ventures.

B. SOCIAL ENTERPRISE VALUES

The values of SE could be classified social, economic and environment benefits. Reviews from selected publication indicate social enterprises work are diverse, ranging from community development [8, 9, 10], basic needs provisions [11], agriculture [12] and healthcare [13]. Comparing between the values based on the triple-bottom line indicator, most research reported more on the social and economic benefits than the environment outcomes. The social outcomes or values include were measured as social ecology, health and wellbeing, education, employability and quality of life [8, 9, 11, 13, 14]. Based on [8], it was concluded social enterprise work on community development focusing on education, nursing care and child care are significant in improving the social performance and quality of life. Similarly, [10] found providing remote jobs and community programs for the indigenous improved community-based pathway for increasing economic participation and employment.

On the other hand, the economic values were measured as financial performance, organizational performance, stakeholder relationship and socio-economic improvement. Evidence of the work include [11, 12, 14] How social enterprise initiatives create a positive relationship between relationship governance, partner selection and alliance performance has been investigated by [12]. Moreover, the performance value was the work of [13], and it was concluded pricing, product and channel management determine the economic and performance value.

Although the environment value was least investigated, there are still evidence social enterprise provide positive reflections to the mother nature. Energy product and distribution, telecommunication, analysis of drinking water was the focus of work of [11] and it was concluded the community initiative has a positive result to energy and CO2.

C. VALUE CHAIN MODEL

Value chain analysis was introduced by [15] that highlights on how organizations could create values to their customers. When more values are created, the organization would have a competitive advantage. The value chain focuses on systems and focuses on how inputs are changed into the outputs. The concept of value chain is depicted in Figure 2 below.

![Fig. 2. Value Chain Model [5]](image)

The work of value chain is further advanced by porter by emphasising on shared value. It leverages the unique resources and expertise of the company to create economic value by creating social value [5]. Porter’s shared value characteristics include economic and societal benefits relative to cost, joint company and community value creation, integral to profit maximization. An example of shared value is transforming procurement to increase quality and yield.

III. METHODOLOGY

Since the aim of the research is to gain insights and capture the richness of the key issues and challenges, a case study using the interview as a technique for data collection was conducted. The method is believed to provide empirical inquiries that investigate the contemporary phenomenon. In this study, a total of six social enterprise founders took part as the research informants. As social enterprise is just recently blooming in Malaysia, all of these enterprises are considered very young. All of them were in the same maturity cohort which is less than 5 years in operation. In addition, all of the enterprises obtained some supports and assistance from a third party. Hence, they were in the homogeneous group with identical business characters. The profiles of the social enterprises and the values are shown in Table 1.

Referring to the social values, there is one common theme which fulfilling the social, economic and environment value creation is the aim. Regardless of the business focus, social integration, inclusion, quality of life and sharing economy have become their main social values as shown in Table 1.
TABLE I
SOCIAL ENTERPRISE VALUES

<table>
<thead>
<tr>
<th>SE</th>
<th>Business Focus</th>
<th>SE Values</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE1</td>
<td>Solution provider for clean water to the indigenous groups</td>
<td>Community problem solutions, quality of life, provision of clean water</td>
<td>Cost effective solutions</td>
</tr>
<tr>
<td>SE2</td>
<td>Human capital quality training for low income groups</td>
<td>Social quality</td>
<td>Income generation for the groups</td>
</tr>
<tr>
<td>SE3</td>
<td>Peer-to-peer car sharing and rental, utilizing on idle cars</td>
<td>“We culture”</td>
<td>Sharing economy</td>
</tr>
<tr>
<td>SE4</td>
<td>On the go car maintenance service</td>
<td>Social: improving quality of life, community development</td>
<td>Sharing economy</td>
</tr>
<tr>
<td>SE5</td>
<td>Transparent crowd funding for less privileged groups in furthering their education</td>
<td>Improving quality of life, Access to education and knowledge, Social return on investment (SROI)</td>
<td>Socio-economic improvement</td>
</tr>
<tr>
<td>SE6</td>
<td>Reengineer the food supply chain</td>
<td>Social inclusion</td>
<td>Sharing economy</td>
</tr>
</tbody>
</table>

TABLE II
SOCIAL ENTERPRISE VALUE CHAIN

<table>
<thead>
<tr>
<th>Social Enterprise Value Chain</th>
<th>Business Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>Process</td>
</tr>
<tr>
<td>Sensing and seizing opportunity</td>
<td>Agile business model</td>
</tr>
<tr>
<td>Structure and Culture</td>
<td>Sharing economy</td>
</tr>
<tr>
<td>Leadership and people skill</td>
<td>Talent and organization competencies</td>
</tr>
</tbody>
</table>

Social Value Chain

<table>
<thead>
<tr>
<th>inter social innovations</th>
<th>social inclusion</th>
<th>sharing economy</th>
<th>social empowerment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared ownership, financial independence, self-sustainable and strategic alliance</td>
<td></td>
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</table>

Three main findings are offered. First, the business process is common which comprised of management, process, marketing and products/services offer. However, how each component plays their part is closely related to innovation. As social enterprise is a challenging business, running its operation requires unique strategies. In addition, the success of each component will determine the next process. For example, the ability to sense and seize opportunity, having the right culture and leadership style will make a lot of difference to the process management.

Second, as social enterprise focuses on the wellbeing, the benefits and values are dispersed to the entire chains from resource producers to products/service recipients. An example is derived from SE3 that highlights how the peer-to-peer car rental that utilizes idle cars require inter social innovations between the social entrepreneur, the car owner and also the service recipients, which include the “we culture”. The culture creates a greater social inclusion which is necessary for creating a group balance and harmony. By including the social groups, it creates for a shared economy, which means the business benefits are shared among each other, and not solely for the social entrepreneur. The car owners will get an extra income while the service recipients will get more value for money since the rental fees are cheaper. By having a greater wealth, it creates more confidence, thus increases the social empowerment to all groups of society. Third, shared ownership, financial independence, self-sustainable and strategic alliance are the keys that support that social value chain across the line that covers many aspects of the social well-beings.

IV. RESULTS AND DISCUSSION

Analyzing the interview reports and using the constant comparison approach based on the value creation concept, feedback from the social enterprises reflecting on the social value chain is depicted in Table 2.
V. CONCLUSION

This study seeks to understanding how social enterprises create not only the social values, but how the values grow and create other positive social impacts. Based on the results, there are evidences that social enterprises grow social values; from inter social innovations to social inclusion, sharing economy and social empowerment. The creation of the social value chain is made possible with the strong supports of shared ownership, financial independence, self-sustainable and strategic alliance. A model is then offered that captures the integration and the chain of values.

As a conclusion, the study offers an initial insight that explores how social enterprises play a role in shaping the value creation across different groups. Regardless of the products and services, social enterprise is an inter-dependant activity that requires supports from many angles. In addition, the study also provides opportunities for evaluation and validation of the social value chain through other research design and study setting. In essence, the study is significance mainly in providing the strategies in boosting the social enterprise for achieving greater economic contribution. Besides, it could pave the way for future social financing models.

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An Insight into the Retail Industry: A Case on Bangladesh

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Abstract – This paper aims to delve into the retail landscape, particularly focusing on Shwapno, the leading retail chain brand in the country of Bangladesh. It will highlight the fast-paced nature of the retail industry in which Shwapno operates. The paper will shed light on the two main business wings of Shwapno: the traditional physical stores, i.e. brick and mortar and ecommerce. Additionally, it will take a look at the problems and challenges Shwapno has faced in the past or continues to face now, the initiatives taken to resolve those issues and its future prospects.

Keywords – retail, retail industry, ecommerce, supermarket, stores, brick and mortar.

INTRODUCTION
The term ‘retail’ pertains to the sale of goods to ultimate consumers in comparatively small quantities for use or consumption rather than for resale. It is basically how producers of goods and services get their products to end consumers.

In the early 1990s, a “supermarket revolution” began in developing economies. Through this phenomenon these economies saw a rapid increase of modern retail stores specializing in food retailing to come into existence and replace traditional shops and wet markets. Bangladesh became part of the global supermarket revolution in the early 2000s. This was caused by the changing socioeconomic trends in the country, increasing urbanization, more women entering the workforce and increasing income per capita.

The first supermarket or retail chain brand to enter the Bangladeshi market was Agora which was set up in 2001 by Rahimafrooz Superstores Limited. Then in the same year shortly after Agora’s entrance, Nandan entered the market. Meena Bazaar first set up its outlet in 2002. Shwapno came into the scene in 2008 with the establishment of its first outlet.

Ecommerce is an emerging market in Bangladesh and is perceived to be a growing industry. The biggest ecommerce platforms in the country at present include Chaldal and Daraz. However, retail chain brands which used to operate traditional stores have also started entering this market. For instance, Meena Bazaar introduced Meenaclick as its ecommerce website and Shwapno launched Shwapno.com. The expanding retail market in the country has led to a robust investment in technology, supply chain and promotional procedures. The demand for supermarkets has been on a steady growth due to the increasing middle income population. This has given local businesses confidence to venture into ecommerce as their global counterparts have done so in the past.

LITERATURE REVIEW
With the increasing presence of supercenters and specialty shops, retail industry has become a staple of the urban population [1]. Major retail chains in Bangladesh are Agora, Meena Bazar, Prince Bazar, Nandan, and Shwapno. These retail stores cater to fulfill the everyday shopping needs of the urban shoppers through fair price, right product assortment and good quality [2]. According to the observations of some retail managers, in the initial days of retail business in Bangladesh, approximately 500 customers used to visit a retail outlet in a particular day and now the number has increased to approximately 5000 customers a day.

Shopper’s satisfaction is a major concern for most retail brands. Although there is much commonality among retail brands across the globe, but shoppers in different regions tend to act in different ways, so it is of much necessity to understand well what customers want.

Liberalization in the 1990s led to whirlwind expansion of retailers in a range of developing countries, especially in Southeast Asia [3]. Modern retailing formats have also become an instrument for development and poverty reduction in the developing nations of Asia. Despite of this potential growth, the retail industry is not without numerous. Expansion of retailers has been accompanied by various retail failures [4].

Customer retention has become a prominent issue for retail organizations especially those engaged in food retail to be able to sustain business [5]. Gaining high satisfaction of consumers is key in retaining them. High satisfaction is likely to result in customer loyalty, making them more likely to create repeated purchases [6]. The retail scenario continues to become more competitive as customers continue to expect retailers to be able to meet their expectations [7].

METHODOLOGY
Nature of data: This paper is descriptive in nature. Most of the data used is qualitative. A qualitative research method of a case study has been used for this paper.

Sources of data: The case study is predominantly based on primary data collected from discussions with various
stakeholders of Shwapno, mostly with the various employees working there and handling the day to day operations. Some secondary data had also been collected from Shwapno’s annual reports, published official statistics, business journals, research reports, articles and websites.

**INTRODUCTION AND BACKGROUND OF SHWAPNO’S BRICK AND MORTAR AND ECOMMERCE BUSINESS**

Shwapno is operated by ACI Logistics Ltd., a subsidiary company of Advanced Chemical Industries (ACI Ltd). Shwapno entered the retail market in Bangladesh in 2008. It has 60 outlets throughout Bangladesh and touches the lives of 35000 households daily with a market share of over 45%, making it the market leader in the Bangladeshi retail landscape. The outlets started off with providing fresh produce and daily household essentials but now has branched itself into being able to offer a myriad of other products such as apparel, home decor, electronics and various other items. Shwapno’s outlets span over Dhaka, Chittagong, Sylhet and Comilla. It operates in multiple outlet formats from small convenience stores to large megamall outlets which range from 1500 to 27000 sq ft. In 2017, Shwapno launched the beta version of its ecommerce website known as Shwapno.com.

**THE KEY FEATURES OF SHWAPNO’S ECOMMERCE AND BRICK AND MORTAR AND THE MAJOR DIFFERENCES BETWEEN THEM**

Shwapno currently operates in two different business wings, ecommerce and brick and mortar. Other ecommerce channels use one big warehouse to store all their goods and orders are shipped individually from there and sent to their destinations. However, Shwapno.com does not maintain a big warehouse for storing goods. Instead, it uses a few of its own physical outlets and uses the inventory already stocked there and deliveries are made from those stores. Which store’s products will be used for sending the delivery is decided based on the proximity of the destination to a particular store. This helps to cut down on delivery costs as fuel consumption is saved and also saves on delivery time. This also eliminates totally the need for location and maintaining a warehouse, cutting down overall overhead expenses. This is why Shwapno is able to offer delivery free of charge to its online customers, unlike others in the market.

The key differences between Shwapno’s ecommerce and brick and mortar:

- **Costs** – E-business models tend to have lower overhead and startup costs in comparison to traditional business models of brick and mortar stores. Shwapno.com does not have the need for maintaining physical outlets which eliminates the need for location rent, staff and utilities. This helps to improve profitability. The brick and mortar model also needs to have an ecommerce presence although ecommerce models do not need to maintain a physical store presence. This means that web costs for development and marketing are not eliminated completely in traditional business models.

  - Working hours – Whereas traditional stores operated by Shwapno can only be open for transactions during working hours, Shwapno.com offers its customers 24/7 service, meaning that customers can order anytime they want allowing more flexibility.

  - Processing – A chunk of transactions are processed manually in brick and mortar stores, where in contrast, in Shwapno.com there is automatic processing of transactions, which helps to cut down on the manpower needed and makes it easier to avoid human error.

  - Interaction and convenience – In brick and mortar interaction between the business and the customer is direct, i.e. face to face, which means that you have to be physically present to make the purchase. In ecommerce, customers do not need to have direct interaction and can order from anywhere they may be. This saves time and is of more convenience.

  - Marketing – In traditional commerce such as the physical stores operated by Shwapno, they use usually standardized or mass marketing to attract customers. In contrast, customization exists in ecommerce which often leads to one on one marketing.

  - Delivery – Delivery of products is almost immediate in brick and mortar stores whereas in ecommerce, delivery of goods is usually made after some time.

  - Scope of business – The scope of a physical store is limited to the area and the nearby areas in which it serves or operates. Whereas ecommerce is not that limited to location and is able to reach wider areas and audiences and in some cases even worldwide due to its ease of access.

**THE MAIN CHALLENGES FACED BY SHWAPNO**

Shwapno is the biggest retail brand of Bangladesh and to achieve that title, it has had to go through many struggles. Moreover, Shwapno conducts its business operations through two main channels, its physical stores, i.e. brick and mortar and its ecommerce website, which itself is a huge responsibility to uptake but is necessary as to keep up with changing trends and the dynamic culture of retail.

**PROBLEMS FACED BY BRICK AND MORTAR**

- **Customer Satisfaction -** Perhaps one of the greatest problems Shwapno has faced in the past is inadequate customer satisfaction. Although Shwapno is a brand that associates itself with having utmost care for the satisfaction of a customer, its level of customer satisfaction often compared low when compared to its competitors like Meena Bazar. Customer satisfaction is a measure of how products and services produced and/or supplied by a company meet or outweigh customer expectations. It is a key performance indicator within a business and is usually part of a Balanced Scorecard.
• Mismatch between price and value offer of products - Although Shwapno is a retail chain brand that prides itself as being able to offer competitive or even lower prices in comparison to its competitors in the market and a brand that tries utmost to offer the most for people’s hard-earned money, there has been much complaints from consumers stating that the prices of products were higher than those of the same products supplied by other retail chain brands in the country. Moreover there were additional complaints that often prices set for the products did not match the value proposition, meaning that the prices were way above the value to be derived from the products. Value proposition states to customers how a product aims to solve the customer’s problem or improve their situation, what particular benefits it provides and also tells the customer why they should purchase from you and not from any other competitor.

• Staff service - Staff service in outlets has also been a source of discontent among consumers in Shwapno outlets. The service provided by the outlet staff and their behavior with customers has been regarded as below par when compared to other competitors in the market. Some outlet staff was not able to supply customers with sufficient information about products and promotional offers when asked as they lacked adequate knowledge about them and in some cases lacked proper grooming and training and as such were not able to represent the accurate brand culture Shwapno represents and continues to strive for.

• Operational difficulties of the website - Many customers continue to encounter slow loading of the website and it often taking too much time to process those orders during checkout. This sometimes leads to customers getting frustrated and switching to other ecommerce platforms for their purchases.

• Product assortment - Assortment refers to the length or number of products a business provides; its breadth or number of product lines that are available to be bought from a business; its depth or the number of varieties available within a particular product line; its consistency or how those products relate to each other in a retail environment. As Shwapno’s ecommerce is relatively new, its assortment is not as extensive when compared to its customers. Additionally, it has yet to introduce new product categories in its website as some product categories are still not available in Shwapno’s ecommerce but available in other ecommerce platforms operating in Bangladesh.

• Delivery inconsistencies – Sometimes although a product may be shown as being available in stock for purchase in the website, they may in reality be out of stock. Although people may order them, they will likely be called by the Shwapno.com that those products are not available and so cannot be delivered. There are also times where delivery is has delays. A customer may be told that they would receive the products they ordered at a certain time, but the goods actually reaching them several hours later.

PROBLEMS FACED BY ECOMMERCE

• Less popularity in comparison to some other ecommerce websites in Bangladesh - One of the main difficulties Shwapno ecommerce faces is being relatively less popular than other ecommerce platforms operating in the country like Chaldal or Daraz. It faces challenges in being able to generate sufficient or targeted traffic for its website, converting shoppers to paying customers and retaining them.

• Miscommunication between the website and the business - Sometimes the problem of ineffective communication or miscommunication between the website and the business during order processing takes place. This makes it difficult to dispatch to customers their correct orders and sometimes may also lead to late delivery. There are also operational issues related to delivery of products for instance, only part of a customer’s order may be sent to their homes, etc. There are also problems with insufficient stock at times which leads to not being able to fulfill customer’s orders on time.

• Operational difficulties of the website - Many customers continue to encounter slow loading of the website and it often taking too much time to process those orders during checkout. This sometimes leads to customers getting frustrated and switching to other ecommerce platforms for their purchases.

• Insufficient data management - Although Shwapno has been in the retail field since 2008, it has failed to keep data about some aspects of its business. In some cases although information was kept, they were not maintained regularly or lacked proper structure and arrangement. For example, Shwapno did not store detailed information about any upcoming events, customer tastes and competitor actions are needed.

INITIATIVES TAKEN BY SHWAPNO TO FACE THE CHALLENGES AND RESOLVE THE PROBLEMS
To improve its performance and overcome its deficiencies, Shwapno has taken various initiatives to improve itself.

- Better tracking of competitors - Shwapno faces intense competition in the marketplace and so has started to keep better tracking of its competitors. Technology is being introduced to expedite the process and make it as error free as possible. This helps to set better prices for its products and to also understand what product to promote and when. Furthermore, it assists in learning of the strengths and weaknesses of other retail brands in the market.
- Use of better technology - Newer and better technology is being planned to be introduced to quicken people’s work processes and analyses. An analytics team has been set up who work purely with data. They are responsible for collecting data and analyzing them to get deeper insight into consumer tastes and buying behavior, market trends and competitor’s strategies and tactics.
- Training of outlet employees - Outlet employees are now being given more and better training to make their interactions with customers more pleasant. They are also now advised and taught to learn more about the products in the store and keep clear knowledge about the promotions they are having.
- Introduction of HRMS - HRMS has been introduced to keep a better database of employees. HRMS (Human Resources Management System) is a software application which integrates many human resources functions such as benefits administration, payroll, recruiting, training, performance analysis and review into one whole system. Handling routine HR tasks becomes easier with HRMS. It reduces paperwork and saves time. KPIs such as absenteeism, duration in the position, employee retention can be tracked easily. It helps to manage employees efficiently by monitoring training management, payroll, performance management and hiring. Additionally it helps to eliminate human error and provides data security and privacy.
- Development of HR Metrics - HR Metrics is also being developed. HR metrics is the data used to express as a measure or quantity the impact and cost of HR processes and talent management programs. It is also used to measure the effectiveness of HR initiatives usually including areas such as costs of labor, expenses per employee, turnover, training, return on human capital, etc.
- Shift to a new platform for ecommerce – Shwapno hopes to shift from its current platform for ecommerce to an American one which will help the website to become faster and get rid of a significant portion of its website’s operational deficiencies. It is also like to assist in reaching a wider audience and make the whole ecommerce experience of Shwapno.com smoother, faster and easier for customers.

THE FUTURE SCOPE OF SHWAPNO
Shwapno hopes to make it easier and more accessible for customers their ecommerce platform and make the shift from a primarily brick & mortar retail brand to an online one and then to an omnichannel retailer. Omni-channel is a multichannel approach to sales that aims to deliver to customers a seamless shopping experience whether they are shopping online from a desktop or mobile device, by telephone or in a brick & mortar store.

Since the emergence of the internet age, the growth of data has increased at an exponential rate. With such a rapid expansion in data creation, there are more opportunities than ever to gain meaningful and actionable insight into consumer trends through careful analysis. Shwapno hopes to use more data and technology to analyze trends and predict trends beforehand. It plans to use big data in the future to create better insight to consumer patterns.

Shwapno hopes to reach even more areas in the country as it can in the form of outlets or franchised stores which are known as express outlets so that people all over the country can have the experience of shopping from a retail store rather than the traditional wet market which is the most prevalent method of shopping among Bangladeshis.

In keeping up with global trends and following in the footsteps of international retail giants, Shwapno plans to make its processes more automated to cut down on costs, reduce human error and human dependency and quicken all processes. It also hopes to introduce world class technologies such as artificial intelligence, augmented reality, virtual reality, etc to enhance customer experience and improve efficiency.

CONCLUSION
Shwapno is a brand that cultivates a culture of being dynamic in the workplace. It has a very fast paced environment as is typical of most retail businesses. Although being a local business, it has been trying to emulate world class technologies and practices in its business, which is truly one of the factors that set it apart from its counterparts in the market.

Although faced with challenges, Shwapno has been working tirelessly to overcome them and set an exemplary image of itself in the retail landscape and hopes to be one of the biggest businesses in Bangladesh in the near future. Not only Shwapno, but the retail industry of Bangladesh as a whole is growing and it looks promising for the future.

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Designing a Performance Management System for Summit Group

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Abstract – In today’s business world, Performance Appraisal and Performance Management System are being used as same meaning which in reality is not correct. Performance management system is a continuous process while performance Appraisal system takes place once or twice a year. Summit’s performance appraisal system has an appraisal system not a management system. Summit is a talent management arm of Abu Dhabi University Holding group which was established in 2007. The research pointed out the current performance indicators and outline of the PMS plan of SUMMIT. Based on the findings an appraisal form has been recommended for SUMMIT group which will help them to identify the top performers of Summit. The research also mentioned the expected outcomes from the PMS plan and the essential performance criteria and ways to measure them.

Keywords – Performance Management System, Performance Appraisal.

OVERVIEW OF THE ORGANIZATION

SUMMIT Career Management Services, which is one of the companies owned by Abu Dhabi University Holding Group, was established in 2007 to support people in capitalizing on the rapidly emerging opportunities within the GCC region. SUMMIT is the Talent Management arm of Abu Dhabi University Holding Group. Talent Management is a powerful and important trend across HR and L&D. It changes the way you are organized, how you use technology, how your resources are allocated, and how you measure what you do. [2] The company is considered as one of the largest suppliers of employee assessment and engagement as well as targeted recruitment services in the UAE. SUMMIT areas of specialization include assessment counseling services, organizational profiling, career development, and employee engagement and nationalization solutions. The company is led by an experienced team who has worked for leading international learning and consulting organizations. SUMMIT creates customized solutions that fit the needs of its private as well as government clients.

LITERATURE REVIEW

Talent Management is a powerful and important trend across HR and L&D. It changes the way you are organized, how you use technology, how your resources are allocated, and how you measure what you do. [2] Performance management system is a continuous process. Appraisals are periodic activities. Appraisals are a part of performance management [6]. The State’s performance appraisal system shall be used to evaluate whether employees meet the performance requirements of their positions and to improve performance. [5] “Performance appraisal is a formal system that evaluates the quality of an employee’s performance. An appraisal should not be viewed as an end in itself, but rather as an important process within a broader performance management system that links: Organizational objectives, Day to day performance, Professional development and Rewards and incentive”[3].

Performance management system is the most responsible techniques of an organization to increase the spirit of a team. It is considers as a core function of the Leaders. It is very important to create a team spirit in between the members of the group for the success of the organization. It is the responsibility of a leader to create enjoyable ambiance custody in view the subordinate needs.

PMS as “a set of metrics used to quantify both the efficiency and effectiveness of actions” An effective PMS enables an organization to assess whether goals are being achieved, and facilitates the improvement of the organization as a whole by identifying their position, clarifying goals, highlighting areas requiring improvement, and facilitating reliable Forecasts. Hence, an effective PMS enables an organization to measure and control its performance in line with the defined strategy. [1] The performance evaluation system can be considered effective only if it helps to identify the superior performers and the laggards. Performance rewards is not the critical component of a performance management system. The critical component is a robust performance evaluation system. [4] A good performance evaluation system should differentiate the good performers from the not so good performers. [4] Every system has its shortcomings and one has to make the best of whatever system is appropriate in the situation. [4] the effort should be to have as fair and transparent a system as possible and implement it faithfully. [4]
CURRENT PERFORMANCE INDICATOR

SUMMIT has a performance appraisal system rather than a performance management system. Performance management system is a continuous process. Appraisals are periodic activities. Appraisals are a part of performance management (T.V. RAO 2004). Currently the company has a basic system of reviewing and evaluating the employees’ performance. The indicators are:

- Customer satisfaction
- Delivery time (i.e. time spent to complete each assessment report)
- Manual and electronic records keeping
- Financial related indicators which are set for directors only

OUTLINE OF THE PMS PLAN

SUMMIT has an appraisal system which is simple to be followed. The State’s performance appraisal system shall be used to evaluate whether employees meet the performance requirements of their positions and to improve performance. The appraisal system is implemented annually, and is conducted between the employee and his/her line manager, the appraisal system is implemented to evaluate performance on the job and employee’s potential for development. During the performance appraisal the line manager review and evaluate the previous key performance indicator, discuss the challenges the employee had faced during the last period also both discuss the previous and potential opportunities. Employees and line manager analysis the training needs and career development opportunities whereas they will identify development area and how to be improved. At the end of the meeting, both line manager and employees will set the new key performance indicator for next year and employee sign the performance appraisal form.

ESSENTIAL PERFORMANCE CRITERIA AND HOW THEY WILL BE MEASURED

“Performance appraisal is a formal system that evaluates the quality of an employee’s performance. An appraisal should not be viewed as an end in itself, but rather as an important process within a broader performance management system that links: Organizational objectives, Day to day performance, Professional development and Rewards and incentive”

For any organization it is very important to evaluate the performance of their employees mainly because in today’s environment most of the learning organizations are investing a large amount of capital of developing their human capital, mainly because it is one the major ways through which their can lead and get ahead of their competition, and therefore these employees should be motivated, capable and willing to perform well for themselves as well as for their organization. And thus it is of extreme importance for the organization to evaluate each employee’s performance at every level. SUMMIT has a performance appraisal system rather than a performance management system. Summit’s existing performance appraisal system has been discussed above; however, the company evaluates the employees work in an organizational context, engaging in certain behavior which in turn produces certain results. This can be explained in the following Approaches

Behavior Approach

More emphasis is given to how the employees perform the assigned job regardless of their personal traits. It basically involves what the employee does on the job. However the stated behavior approach is not applicable if:

(a) The link between the behavior and the result is not obvious: Sometime the desired result may not be achieved even if the required behavior was applied for example: Summit team was not able to successfully assess the given employee in spite of the required competence, knowledge and ability present in the team mainly because the employees to be assessed were not willing to provide the information

(b) Outcome occur in distant future: the result of the applied behavior cannot be measured due to long time frame for example : Summit recruiter hire a group of competent individuals for their client but the how they actually perform cannot be evaluated by summit

(c) Poor result are due to causes beyond the performers control: the individual may both be equally competent and knowledgeable but one may perform less than other due to situation that may not be controlled by the employee

Result Approach

Emphasis more on the end result produced rather than the employee traits or the process through which the employee gets the work done. This is basically a bottom-line approach which is not concerned about the employees ‘behavior or the process but instead on the end product this is a more cost effective approach mainly because evaluating the result is less costly then evaluating the behavior for example Summit top management evaluates the overall performance of the employee but the yearend financial statements

Result approach is applicable in the following

(a) the organization has the required skilled workers necessary to produce the desired result

(b) Both the result as well as the behavior is highly related to each other.

(c) Results consistently improve over time.

Trait Approach
More emphasis on the individual rather than the situation, behavior and the end results like for example performance measurement by evaluating individual’s intelligence, conscientiousness at the end of each review. However firstly, it must be considered that traits are not under the control of individual and so a system following trait approach must be considered unfair by the employees. Secondly it is not an ideal indicator that an individual with a specific trait will surely result in the desired behavior.

Apart from the above mentioned criteria the management of Summit also evaluates through customer satisfaction, delivery time, and yearend results by comparing the previous year’s goals and standards set by the employees, the level of difficulties faced by them in dealing with it and how effectively were they able to overcome it successfully.

EXPLANATION OF KEY RECOMMENDATION

As Summit follows Performance Appraisal system we suggest that Summit should have a complete and meaningful appraisal form which will include: personal data of employee, a clear guideline to fill the form. The competencies should be divided into two parts which will be categorized as Professional and Technical competencies. There should be space for mentioning employee’s exceptional contribution in the organization. In addition the form should identify employee’s training and needs development and supervisor’s supporting note. Last but not least the form must include acknowledgement from both the employee and supervisor.

It is suggested that this appraisal should take place twice a year to rate the performance of the employees in a continuous manner. In this process Summit can measures its employees’ performance in more effective and meaningful way and can identify employees’ strengths and weaknesses in an effective way. Our suggested performance form is given in the appendices.

OUTCOMES TO BE EXPECTED FROM PMS PLAN

Performance management system is the most responsible techniques of an organization to increase the spirit of a team. It is considers as a core function of the Leaders. It is very important to create a team spirit in between the members of the group for the success of the organization. It is the responsibility of a leader to create enjoyable ambiance custody in view the subordinate needs.

Implementing performance management system properly will make the following contribution

Motivation to performance will increase. Continuously receiving feedback will boost employee's future performance. Knowledge on previous performance will encourage employees for better performance.

Managers will gain insight about their subordinates. Supervisors and managers who are in charge of appraisal will gain more insight in person they are appraised.

Job definition and criteria will be clarified. Individual tasks will be clearer for both employees and employer and in result the employees will know exactly what is required from him/her and how to enhance better performance.

Self-insight and development will be more enhanced.

Both employees and employer most likely will develop a better understanding of the system and what kind of development is required for better outcome. PMS will increase the chance for employees to be more engaged. All suggestion and contributions from the employees will lead the innovation and improvement.

Organizational objective will be clear. Organization and unit goals are made clear, and employees understanding of this link will enable him for organizational successful. Employees will be more competent. PMS will boost employees' performance.

Employees’ misconduct will be minimized. PMS will help to identify weakness and focus on development area which in turn will help employees to focus on improving their performance.

Better protection from lawsuits. All data and information collected during PMS can help as documented evidence against lawsuit. When implement PMS fairly and equally among employees, that will reduce the chances for any potential legal action.

Supervisors will communicate their view on performance more clearly. Performance management system will allow supervisor to observe subordinate clearly and feedback on their judgment. This process will enable supervisor to recognize employees’ performance and demonstrate their views to employees based on performance.

Organizational change could be facilitated. PMS could be a good tool to facilitate organizational change to employees.

Commitment, motivation and loyalty will be enhanced.

Proper PMS will increase employees’ satisfaction towards their organization and likely to be motivated to perform well. To be committed to the organization and enhance their loyalty and accordingly turnover will be reduced. Self-esteem will increase. Receiving feedback will boost employee's self-esteem over time, because acknowledgment on employee’s contribution will increase their awareness and self-esteem.

HOW EFFECTIVENESS OF PMS PLAN SHOULD BE MEASURED

PMS as “a set of metrics used to quantify both the efficiency and effectiveness of actions”

An effective PMS enables an organization to assess whether goals are being achieved, and facilitates the improvement of the organization as a whole by identifying their position, clarifying goals, highlighting areas requiring improvement, and facilitating reliable
Forecasts

Hence, an effective PMS enables an organization to measure and control its performance in line with the defined strategy. The performance evaluation system can be considered effective only if it helps to identify the superior performers and the laggards. Performance rewards is not the critical component of a performance management system. The critical component is a robust performance evaluation system.

A good performance evaluation system should differentiate the good performers from the not so good performers. The effectiveness of PMS plan should be measured through following steps.

1. Managers have to check and ensure whether the company PMS have achieved the expected outcomes of PMS plan.
2. Managers have to ensure and realize whether the company appraisal system has changed or improved the things in the company such as whether employees motivation level have increased in compare to previous one.
3. The level of the goal settings has been raised, employees and managers understand their potentials and set high goals and are motivated to achieve them.
4. Whether the senior manager, senior authorities have started supporting junior employees in their goal settings, guide the employees how to achieve them, how to be motivated, how to motivate others.
5. Checking and comparing whether employees performance has increased as compare to previous performances.
6. Managers have to ensure whether employees are clear about their objectives, their goals.
7. Whether relationship between employees their supervisors, their managers, managers manager has been improved or not. Whether employees are comfortable in sharing their ideas, their problems with their seniors.
8. How much employees are dedicated towards their goals, towards the outcomes of the PMS plan.
9. Managers can determine properly what type of training is required for the employees to increase their effectiveness.
10. Whether employee participation, involvement in certain projects, discussions have increased or not.

At the same time, it has to be recognized that there is no perfect performance evaluation system. Every system has its shortcomings and one has to make the best of whatever system is appropriate in the situation. The effort should be to have as fair and transparent a system as possible and implement it faithfully.

REFERENCES

APPENDIX

Performance Review

Personal Details:

<table>
<thead>
<tr>
<th>Name :</th>
<th>Period Under Review :</th>
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</thead>
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<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Designation :</th>
<th>Start Date in Current Position :</th>
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<table>
<thead>
<tr>
<th>Supervisor:</th>
<th>Rating</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>E (Exceptional)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>AS (Above Standard)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>OS (On Standard)</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>U (Unacceptable)</td>
</tr>
</tbody>
</table>

Guidelines:

- All fields in the form are mandatory unless otherwise indicated.
- The rating scale above must be used in Part 1.
- Part II is for additional contributions (Mandatory for E rated employee).
- Employees must complete self appraisal up to Part II.
- Part III is for the final performance rating and will be filled in jointly with the Line Manager.
- Part IV is for Training/Development needs and will be filled in jointly with the Line Manager.
- Part V is supporting notes for the Line Manager Only. Note this supporting information is for internal use only and is not shared with the employee.
- Employees should be informed that the signature at the end of the form does not denote agreement or disagreement only that the appraisal took place.

Part I – Competency

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Description</th>
<th>Assessment Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4 3 2 1 N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROFESSIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
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<td>6</td>
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<table>
<thead>
<tr>
<th>TECHNICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
</tbody>
</table>

Average Rating (Total cumulative score divided by 11 OR Less If N/A is Used)

| 9 | Process (Follow existing processes or apply suitable logic, best practice or suggest possible adoption of new process). |

Business Development & Market Knowledge (Good and healthy rapport with clients, suppliers & colleagues, leverages their network for business gains where appropriate. Good understanding of local market, supply chain, local practice & Law).

Analysis & Creativity (Ability to research, source and analyze data and apply to role / project in a logical and or creative manner).
Part III – Final Rating

Average Score Definitions (To be completed jointly with the Line Manager)

<table>
<thead>
<tr>
<th>Average Rating</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3 – 4.0</td>
<td>Exceeds performance in critical areas of professional competence.</td>
</tr>
<tr>
<td>2.6 – 3.2</td>
<td>Exceeds performance in mainstream areas of responsibility.</td>
</tr>
<tr>
<td>2.0 – 2.5</td>
<td>Job requirements are met. There is some improvement required.</td>
</tr>
<tr>
<td>1.0 – 1.9</td>
<td>Does not meet minimum job standards. Significant improvement is required.</td>
</tr>
</tbody>
</table>

**Final Rating**

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>AS</th>
<th>OS</th>
<th>U</th>
</tr>
</thead>
</table>

Please circle the final rating

Part IV – Training / Development / Improvement required (To be completed jointly with the Line Manager)

Training / Development / Improvement Required (If Any)

Employee’s Signature / Date

Supervisor’s Signature / Date

* All appraisals will be reviewed within the HR process.

Part V – Supporting Notes (For Line Manager internal use only)

Supporting Notes (if any)
A Study on Potential Customers’ Intention towards Shuttle Microbus

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Abstract – App-based ride-sharing services are common in many places around the world, particularly in overpopulated urban areas with high traffic. This study illustrates customers’ intention towards Shuttle, which is facilitated for only female customers. The research used five independent variables: attitude to behavior, perceived behavioral control, perceived ease of use, perceived usefulness and subjective norm; and one dependent variable—intention to use—from Theory of Planned Behavior and Technology Acceptance Model. We conducted a survey among female respondents to gather insights on their intention. Finally, we analyzed their responses to meet our research objective. Our research paper will help Shuttle understand what factors positively and negatively influence its potential customers’ behavioral intention to use it. This paper could contribute towards the transportation sector in terms of safety and security for a particular group. Moreover, our research model will encourage and help future researchers, who are interested to know women’s intention to use female-only ride-sharing services, to conduct similar researches.

Keywords – ride-sharing service, app-based, intention, Theory of Planned Behavior and Technology Acceptance Model.

I. INTRODUCTION

We have recently seen an increase in app-based ride-sharing services in Bangladesh. With our public transportation system and taxi services being dysfunctional and unreliable, it is no surprise that the demand for those services is increasing. Using these services reduces the costs of owning a car by half; which costs around 900 taka per trip, amounting to almost 70,000 taka monthly. Motorbikes further decrease the cost. Moreover, ridesharing services like Uber, Pathao, Obhai and Dako are more convenient and user-friendly than conventional transports like CNG, auto-rickshaw and taxis. [1]

For women, commuting in public transports is more challenging than men. A study of Brac showed that 94% of women in Dhaka city fall victims to harassment in public transports. 415 female respondents from low and low-middle income backgrounds, living in urban, peri-urban and rural areas, took part in its quantitative and qualitative stages. [2] Maliha Hossain, a university student, an ex-customer of Pathao, said that the drivers were well-mannered, albeit she felt uneasy sitting with a male stranger. Recently, a few ‘for women, by women’ ride-sharing services have been launched, namely Lily, Obon and Pink SAM. All of these are motorbike-sharing services that have trained female bikers to give rides to women. Maliha Imtiaz Quasem, the CEO of SAM, said, “It’s not just a vehicle to move around—it’s a symbol of women’s advancement in Bangladesh.” [3]

Shuttle, a unique ride-hailing service, is relatively new to the others, which was launched by Reyasat Chowdhury, Jawwad Jahangir, and Shah Sufian Mahmud Chowdhury only in December last year. It is the first company in Bangladesh to give microbus rides only to women. It claims to provide safe, comfortable and hassle-free rides for female university students and working women. It has convenient pick-up and drop-off points for women living in various locations. Its vehicles currently travel through seven routes within Dhaka city. It assigns a trip manager for each vehicle to ensure the safety of women. Passengers can book a ride through their hotline or email a day before they need a ride. [4]

The major objective of this research is to find out the intention of their potential customers to use Shuttle. It will let us know what factors are positively influencing their intention to use Shuttle. We will also know what factors are negatively influencing its potential customers. This information will help Shuttle to identify and improve their strengths and weaknesses.

II. LITERATURE REVIEW

As app-based ride-sharing services have become popular in many countries, some researchers have published papers relevant to the industry. According to [5], well-educated, young, working individuals with higher income, living in overpopulated areas, are mainly using the car-sharing services.

A Master thesis paper on the intention of Generation Y to use Uber revealed that Generation Y in Sweden have a positive attitude towards using Uber and their attitude is the strongest predictor of their intention to use the service. Moreover, perceived ease of use and perceived usefulness have a positive impact on their attitude. Lastly, with perceived behavioral control being the dominant factor, both it and subjective norm have a positive contribution to their intention to use Uber services. [6]

A similar study in Vietnam showed that perceived usefulness and ease of use positively impacted their intention to adopt app-based ride-sharing services. It demonstrated that perceived behavioral control,
subjective norms and attitude also play significant roles in predicting the intention of customers. [7]

Attitude to behavior (ATB)-It represents whether someone feels positive or negative towards performing a behavior and its consequences. [8]

Behavioral intention (BI)-It refers to someone’s motivation to consciously make an effort or a decision to engage in a specific behavior. Stronger intentions indicate actual performance of the behavior. [9]

Perceived Behavioral Control (PBC)-This intimates an individual’s perception towards how difficult or easy they think performing a behavior is. [8]

Perceived ease of use (PEOU)-It is a variable that depicts a user’s belief that a system will be easy to use. PEOU influences both PU and ATB. [10]

Perceived Usefulness (PU) - It is clearly described by this—people tend to use or not use the application to the extent they believe it will help them perform their job better” (Davis, 1989, p. 320). It has a direct impact on attitude towards use of a computer system and indirect effect on behavioral intention to use. [11]

Subjective Norm (SN) - It refers to whether someone believes that their friends, family and acquaintances think they should perform a certain behavior. It represents perceived social pressure to engage in a behavior. [8]

Technology Acceptance Model (TAM)-It was developed to elaborate the underlying factors influencing people to accept or reject a new technological invention. This theory includes perceived ease of use and perceived usefulness. [10]

Theory of Planned Behavior (TPB)-It was developed by Fishbein and Ajzen in 1975 as an extension of the Theory of Reasoned Action (TRA). Its purpose is to “predict and explain human behavior in specific contexts.” In other words, it predicts an individual’s intention to engage in a behavior at a specific time and period. This theory includes attitude to behavior, perceived behavioral and subjective norm. [8]

III. METHODOLOGY

1) Questionnaire Development

Our study is a descriptive research, given that it will identify a relationship between specific independent and dependent variables. We relied both on primary and secondary data in our study. We used five independent variables: attitude to behavior, perceived ease of use, perceived usefulness, perceived behavioral control and subjective norm – and one dependent variable, which is intention to use. We did secondary research and found a similar study ‘Want to take a ride with me?’, a Master Thesis paper by Andreas Fleischer and Christoffer Wahlin. The study applied Theory of Planned Behavior and Technology Acceptance Model to design the questionnaire. We slightly modified the questionnaire, as needed for our survey. The entire questionnaire was designed in five-point Likert Scales, ranging from strongly agree (1) to strongly disagree (5). It improves the reliability of the responses.

2) Sample and Data Collection

Our population was female students and working women in Dhaka city. Through convenience sampling, we selected 43 female respondents. We conducted a survey—a quantitative data collection method—to understand the relationship between the variables. Due to time constraint, we distributed the questionnaire on ‘Google Form’ only to our female classmates and friends, who are mainly from Brac University.

IV. RESULTS

A. Figures and Tables

We have calculated the R Square to know the overall strength of our research model. We have considered the significance level 5% for “Multiple Linear Regression Analysis”. We used the “IBM SPSS Statistic 23” software for all calculations.

The result of our calculation in “IBM SPSS Statistic 23” to determine R Square is shown in the table below:

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.766</td>
<td>.587</td>
<td>.532</td>
<td>.51495</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Mean_PUI, Mean_PEU, Mean_PBC, Mean_SN, Mean_ATB

Here, we can see that the R Square is .587. This indicates that the strength of our research model is moderate, as R Square is not less than 0.5. In other words, our research model is moderately strong.

We used coefficients to test the hypotheses. For more clarity, we have included another table below:
TABLE TWO
RESULT OF MODEL SUPPORT

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized beta coefficient</th>
<th>P-value (significant at p&lt;0.05)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean_ATB</td>
<td></td>
<td></td>
<td>Not supported</td>
</tr>
<tr>
<td>Mean_SN</td>
<td></td>
<td></td>
<td>Supported</td>
</tr>
<tr>
<td>Mean_PBC</td>
<td></td>
<td></td>
<td>Not supported</td>
</tr>
<tr>
<td>Mean_PEOU</td>
<td></td>
<td></td>
<td>Supported</td>
</tr>
<tr>
<td>Mean_PU</td>
<td></td>
<td></td>
<td>Supported</td>
</tr>
</tbody>
</table>

a. A dependent variable: Mean_IUS

The model supports Mean_SN, Mean_PEOU and Mean_PU. Attitude towards behavior (Mean_ATB) and perceived behavioral control (Mean_PBC) have negative influence on Shuttle’s potential customers’ intention to use its service. In contrast, subjective norm (Mean_SN), perceived ease of use (Mean_PEOU) and perceived usefulness (Mean_PU) have significant positive influences on their intention to use Shuttle’s service. However, as we can see in Table Two: Result of Model Support, attitude towards behavior (Mean_ATB) and perceived behavioral control (Mean_PBC) are rejected, since their p-values are more than 5%.

To formally interpret, Mean_ATB (beta coefficient= -.155, p-value= .339) is inversely related to intention to use Shuttle, but as this hypothesis is not supported, this have small impact on it. Mean_SN hypothesis (beta coefficient=.394, p-value=.013) is supported and has significant positive influence on intention to use service. Mean_PBC (beta coefficient= -.006, p-value=.962) negatively affects intention to use service, but as the hypothesis is not supported, it does not significantly influence it. Mean_PEOU (beta coefficient=.254, p-value=.036) hypothesis is supported and there is a significant positive relationship between it and intention to use. Mean_PU (beta coefficient=.450, p-value=.017) hypothesis is supported and there is significant positive relationship between it and intention to use.

D. Other Recommendations

There are a few limitations of this research. First, the sample size is too small and homogenous. Moreover, the research was done in a very short time and we used convenience sampling method. We would recommend that future researchers conduct the research with more time. Furthermore, a bigger and less homogenous sample size would give better insights. We could recommend future researchers to use stratified sampling to better represent the population. They can take sample from different universities and locations to get more accurate and diverse insights on behavioral intention. Moreover, researchers, who are interested in this topic, can do a customer satisfaction survey on Shuttle when it has a larger customer base. Similar studies can be done on Lily, Obon and Pink SAM as well. Research on what women demand from such services can also provide useful findings for those companies and consequently benefit customers in the long-term. Lastly, futures researchers can carry out studies on how effective ‘For women, by women’ or ‘Women-only’ e-hailing services are in making women feel safe and comfortable while commuting.

IV. DISCUSSION

A questionnaire from a similar study was used in the survey on 43 respondents. We used five dependent and independent variables from TPB and TAM theories to find out intention to use service.

The major objective of the study was to understand the intention of Shuttle’s potential customers, applying those two theories. Based on the results, we can conclude that the factors we chose have predictive power and our research model is moderately strong. Our study indicates that all the independent variables have a close to moderate relationship with the dependent variable. Perceived ease of use, perceived usefulness and subjective norm have positive effects on intention to use. However, perceived behavioral control and attitude to behavior have negative relations with intention to use. Our survey findings indicate that 32.6% and 41.9% of the respondents selected the ‘neutral’ option, while responding to the following statements respectively—‘I think I can save money’ and ‘I think I can save time’. 48% of the respondents chose ‘neutral’ in response to ‘I
think I can trust the trip manager.’ 34.9% disagreed to the statement – ‘I have enough knowledge to use Shuttle.’

V. CONCLUSION
Ride-sharing services are now found in many places all over the world, particularly in urban areas with high population density and traffic. The female-only services are also on the rise. They could create a better Dhaka city for women, where they can commute safely and conveniently. Moreover, those can reduce daily commuters’ travelling expenses with fair pricing. Therefore, it is important to know women’s intention to use a service like Shuttle to understand how they feel towards it in terms of safety, convenience and expense. In our research, we have found that attitude to behavior and perceived behavioral control are inversely related to behavioral intention, as oppose to a similar study, ‘Want to Ride with me?’, conducted in Sweden. Shuttle needs to improve its potential customers’ perception towards saving money and time using Shuttle. There should be more studies in Bangladesh to find out the intention of women towards ‘women only’ ride-sharing services. They would help businesses and potential customers to get a vivid picture of how likely women are to use these services regularly.

REFERENCES


Factors Influencing Express Bus Accidents in the Malaysia Eastern South Route

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Abstract – Recently, the number of express bus accidents is alarming. Almost every month there were cases of road accident that involved express buses. To our knowledge, none formal study was carried out to identify the causes of these accidents. This study was carried out to identify factors influencing bus accidents on the Malaysia eastern south route. This research also to reduce the rate of bus accidents occurred specifically for A N B Express Bus Services (pseudonym) on the eastern south route. Based on the statistics from PDRM (Polis DiRaja Malaysia), as from 2015 until 2013 it shows an upward trend from 92 cases to 215 cases of bus accident in Malaysia. However, in 2014 it was decreased drastically from 215 cases in 2013 to 134 cases in 2014. However, the upward trend was observed from the year 2014 to the year 2015 with 134 and 137 cases respectively. There are three factors that influence bus accident which involve driver behavior, work schedule and bus condition. A series of interview sessions were conducted to 12 respondents who were grouped into two categories, which are the personnel within the A N B Express bus service and the drivers who had involved in accidents. From the interview conducted, 58% stated that driving behavior is the main factor of bus accident for A N B Express Bus Service, 25% said, it was due to work schedule and 17% mentioned about bus condition. The implications of the study are discussed in this paper.

Keywords – express bus accident, driver behavior, work schedule, bus condition, highway

I. INTRODUCTION

Express bus accident has become serious issues that threaten lives and cause losses for the passengers and the company. Based on the statistics from Malaysian Institute of Road Safety Research (MIROS), as from 2013 until 2015, it shows an upward trend from 92 cases to 215 cases of bus accidents in Malaysia. In 2014 it has decreased drastically from 215 cases in 2013 to 134 cases in 2014. However, the upward trend is observed from the year 2014 to the year 2015 with 134 and 137 cases respectively [1]. There are issues in the company regarding the accidents of bus express especially those involving A N B Express Bus Services. This study is meant to identify what factors influencing bus accident for A N B Express Bus Services on the eastern south route. Thus, by focusing on the factors that lead to accident hopefully it will result in the decrease in the number of bus accident involving A N B Express Bus Services. It is because based on the accident statistic report in the year 2016, from A N B Berhad, the number of accident involving bus express was increased from 17 to 34 in year 2016 and 2017 (October). Furthermore, the reason why the researcher chooses the eastern south route is because this route contributed to the highest number of bus accident. For further explanation, in A N B Berhad there are two types of express buses which are A N B and A N C. This study is focusing on A N B Express Bus Services because based on the data from the company A N B Berhad, A N B Express Bus Services recorded the highest number of accident compared to A N C express bus [2].

The statistics as shown in Table I are divided by region for 2017 and 2018 and route (Table II).

| TABLE I |
| NUMBER OF BUS ACCIDENT FOR A N B BUS EXPRESS SERVICES |
| Sector | Years | 2017 | 2018 |
| Western North | 2 | 1 |
| Western South | 1 | 8 |
| Eastern North | 5 | 9 |
| Eastern South | 7 | 10 |
| Southern North | 2 | 6 |
| Southern South | 0 | 4 |
| Total | 17 | 34 |

| TABLE II |
| REGION AND BUS ROUTE |
| Region | Route |
| Western North | KL-Kedah |
| Western South | KL-Perak |
| Eastern North | KL-Kelantan |
| Eastern South | KL-Terengganu |
| Southern North | KL-Melaka |
| Southern South | KL-Johor Bharu |

II. LITERATURE REVIEW

Bus Accident

According to Land Public Transportation Commission [3], the rate of bus accidents was increasing from the year 2011 to the year 2015 and this causes injuries and fatalities. Bus accident occurred because of several factors that lead to minor and major accident such as when a vehicle hits a person, an object, or another vehicle, causing injury or damage.
Human factors involve the driver’s behavior and work schedule and these have the relationship with the number of accident. Driving behavior is one of the factors that can increase to number of accident. Despite driving behavior, work schedule such as how many times the drivers have to be on duty per day will also contribute to the number of accident.

Driver’s Behavior
In transportation industry, ergonomics is the study on how humans behave physically and psychologically in relation to particular environments, products, or services. In this study, there are a lot of factors that lead to bus accidents of which the researchers would like to address such as driver’s behavior and work schedule. A recent survey conducted by ABC News [4] and the Washington Post [5] revealed that 32 percent of individuals who responded considered aggressive driving to be the No. 1 threat, presenting the most danger to their own safety on the road. According to The National Highway Traffic Safety Administration (NHTSA) [6], aggressive driving is defined as when “an individual commits a combination of moving traffic offenses so as to endanger other persons or property.” The are several types of driving behavior which are weaving, harsh braking, using hand phone while driving, driving while smoking, overtaking in the prohibited areas, tailgating, sleepy or fatigue, queue jumping, changing lane without signal, red-light running, overtaking at double line, driving under influence alcohol and etc.

According to García-Santillán, Moreno-García, Carlos-Castro, Zamudio-Abdal, and Garduño-Trejo [7], the behavioral component is related to expressions of behavioral intention or action, the behavior that represents the tendency to act or resolve in a specific way. Findings of previous studies have shown that there was a relatively positive relationship between express bus drivers’ inappropriate driving behavior and attitude towards traffic safety that can lead to the accident [1]. Lack of attention and alertness were the common causes of accidents in towns and cities. Thus, human factors are very important part to tackle in order to reduce bus accident rates.

Work Schedule
Work schedule also lead to bus accident. It is because when the company had driver shortage, the driver will be assigned with maximum work tasks and it will make them fatigue. According to Abdullah and Von [8], there was a significant relationship between work schedule and accident. The correlation between work schedule and accident was moderately strong.

Work schedule affects lead to accident as excessive and irregular working hours can lead to fatigue and cause accident. This is because most professional drivers do not work a regular 9-5 shift. Unsuitable work schedule will cause bus drivers lack of rest or sleep and this affects their performance while driving. In Hong Kong, Citybus company was involved in accident that killed three and injured 33 people. After the crash, work schedule of Citybus company had been questioned. Chung, the Development Director of Citybus disclosed that 18 per cent of some 3,700 Citybus and New World First Bus drivers worked more than 12 hours a day, including five per cent who worked more than 13 hours [9]. On average, the drivers worked 10 hours per day, Chung added.

Bus condition
Bus condition is also one of the factors that can lead to accident, this can be proven from Transport Department 2013 research that reported that there is a significance relationship between bus condition and bus accident. This is because the bus driver may get involved in accident because of non-functioning brakes, signal and etc. Thus, it will increase the number of accident even there is a weak relationship between the bus accident and bus condition. There was one accident involving A N B Express Bus Services on June 1, 2017. The bus driver was believed to have lost control of the vehicle, causing the bus to enter into the opposite lane before colliding with a trailer and plunging into a 10m deep ravine on the left side of the road. After A N B Berhad did the investigation, they found out that the bus condition was not satisfactory in which the brakes were not functioning well. To make it worse, the driver, Ahmad (pseudonym), 47, made a statement that the accident occurred because of the condition of the bus and just before the accident a cow was passing the old road and he failed to maneuver the bus to avoid the cow.

To summarize, most road accidents involving express bus were due to three main factors; the bus driver’s behavior, the work schedule and the condition of the bus. These factors will be investigated and the causal link will be established in the following sections. The methodology section will describe in detail the method used to conduct the study.

III. METHODOLOGY
The research is based on qualitative method, which gives the better understanding of the topic research and gains new knowledge because the respondents consist of the drivers who had involved in bus accident. Therefore, they are experienced and knowledgeable about bus accident and this inclusion will be able to avoid bias among respondents. Besides, instead of relying solely on hard fact and figures, reliability tests and selective sampling of setting and people, qualitative research take into account what quantitative research neglects such as subjective points of view or the ‘inner life’, intended and unintended consequences, idiosyncrasies, and the like. Thus, in this research, exploratory study was carried out.

Interview
The study decided to interview 12 respondents and they were grouped into two categories; four personnel from A N B Express Bus Services that involved in handling every accident case and the second category involved seven A N
B Express Bus Services’ drivers of the eastern south route who previously involved in bus accident.

IV. FINDINGS

Interview Question 1
Demographic profiles of the respondents include their name, age, position and work experiences. Respondents were from two categories which are personnel management and drivers who involved in accident on the eastern south route. The average age for personnel management who are responsible with this field is 38 years old, which means that most of them were experienced in handling accident cases. The average age of the drivers who involved in accident in the eastern south route is 42 years old. Most of the drivers had working experience more than 5 to 10 years. Table III depicts the list of drivers’ working experience.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Working years experienced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent A</td>
<td>10 years</td>
</tr>
<tr>
<td>Respondent B</td>
<td>3 years</td>
</tr>
<tr>
<td>Respondent C</td>
<td>1 years</td>
</tr>
<tr>
<td>Respondent D</td>
<td>2 years</td>
</tr>
<tr>
<td>Respondent E</td>
<td>8 years</td>
</tr>
<tr>
<td>Respondent F</td>
<td>4 years</td>
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<tr>
<td>Respondent G</td>
<td>28 years</td>
</tr>
<tr>
<td>Respondent H</td>
<td>13 years</td>
</tr>
<tr>
<td>Respondent I</td>
<td>10 years</td>
</tr>
<tr>
<td>Respondent J</td>
<td>1 years</td>
</tr>
<tr>
<td>Respondent K</td>
<td>3 years</td>
</tr>
<tr>
<td>Respondent L</td>
<td>10 years</td>
</tr>
</tbody>
</table>

Interview Question 2
Fig. 1 is the result of respondents’ answer for research question 2 which is “what factors that contribute to bus accident for A N B Express Bus Services on the eastern south route?” Driver’s behavior, bus condition, tiredness and road condition (the factors are arranged according to the degree of importance) are found to be the factors that contribute to road accident on the eastern south route.

Based on Respondent C, driver’s behavior is one of the factors that cause bus accident for A N B Express Bus Services on the eastern south route. Besides, the other three respondents said it was because of bus condition. Below is one of the respondent answers:

“Bus condition is one of the factors that lead to bus accident for A N B. The reason why I said bus condition is the factor because while driving probably if the bus condition is not good then the accident will occur because normally the bus will breakdown if it has not been regularly checked or it has not received proper maintenance” (Respondent D)

Lastly there are two respondents who give an opinion that tiredness or sleepy is one of the factors that lead to bus accident for A N B Express Bus Services on the eastern south route. Below is one of the respondents answer on the research question:

“Sometimes the driver could not focus on their driving because they feel tired and exhausted while driving. This might be due to hectic work schedule or they do many trips to gain extra money. So because of that, the driver could be fallen asleep or feel sleepy while driving and caused bus accident. Whatever it is, in my opinion if the driver had enough rest and got sufficient salary it could reduce the number of bus accident for A N B on the eastern south route or maybe could avoid accident from happening.” (Respondent G)

In order to answer research question 3, the study asked respondents about what are the factors that influencing bus accident for A N B Express Bus Service on the eastern south route. From the answers, six respondents mentioned that drivers’ behavior is one of the factors that lead to bus accident. From the six respondents, four of them come from personnel management and two from them are answered by drivers on the eastern south route. Below are the respondents’ feedback:

“Driver’s behavior is one of the factors that lead to bus accident for A N B and the reason why I said so is that drivers already had their training class and they should know how to control their bus while driving, but most of them are negligent in terms of speeding, using hand phone while driving, smoking and etc. If they follow instructions that the driver can’t drive fast, do not smoke and etc. probably the risk or number of bus accident can be reduced. In other words they (drivers) who control the bus should know how to control the bus on any kind of situations. That’s why I said driver’s behavior is one of the factors that lead to bus accident for A N B on the eastern south route.” (Respondent C)

Based on their answer it shows that the drivers should do inspections on the bus before leaving to take passengers or start a trip. By doing so, it could help avoid bus accident from occurring.

“Bus condition is one of the factors that lead to bus accident for A N B. The reason why I said bus condition is the factor because while driving probably if the bus condition is not good then the accident will occur because normally the bus will breakdown if it has not been regularly checked or it has not received proper maintenance” (Respondent D)

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Research Question 4
Table IV is the result from respondents’ feedback on research question 4. The study found that three factors that influence bus accidents for A N B Express Bus Services are driver’s behavior, work schedule and bus condition. Among these three factors, which factor is the main contributor to the occurrence of accident for A N B Express Bus Services on the eastern south route? Driver’s behavior is found to be the main contributor to the bus accident on the eastern south route.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Total of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver Behavior</td>
<td>7</td>
</tr>
<tr>
<td>Working Schedule</td>
<td>3</td>
</tr>
<tr>
<td>Bus Condition</td>
<td>2</td>
</tr>
</tbody>
</table>

Research Question 5
Fig. 2 is the result of respondents’ answer on research question 5: Does the weather contribute to bus accident? Most respondents mentioned that weather does not lead to bus accident. Below was one of the respondent’s statements.

“I don’t think weather factor can cause bus crashes, this is because driver already have their training class and know how to controlled the bus when whatever kind of situation and weather it is. It doesn’t matter if bad weather can cause bus crashes. They (drivers) should know how to controlled the bus. This is why I vote ‘no’ for this question” (Respondent A)

There are four respondents who voted for yes indicating that weather factor can cause bus crashes for A N B Express Bus Services on the eastern south route. Below is one of the respondent’s justifications on why he agreed on this research question:

“Weather factor can cause bus crashes because when there is heavy rain there is the probability of having puddles on the road where the road could be slippery and the driver can’t control the break. Whatever it is, weather is one of factors that we can’t predict.” (Respondent K)

Based on Respondent K answer, the study can conclude that weather is something that we cannot predict and the respondent also had mentioned that the driver could not control the bus when the road is slippery. It shows that, the drivers should learn how to control the bus in any kinds of situation.

Research Question 6
In order to answer Research Question 6, the researchers asked the respondents whether they agree that speeding can lead to bus accident. Ten respondents answered that they agree that speeding can lead to bus accident. According to Respondent A, speeding is the main factor that can lead to bus accident for A N B Express Bus Services on the eastern south route. If the drivers could reduce the speed, the number of bus accident also can be reduced. Respondent A who is the Head of Division on A N B Berhad also mentioned that based on company database, drivers who drive from KL to the eastern south route recorded the highest number of speeding. Below is Respondent A statement.

“The reason why I said speeding can lead to bus accident is because, if the driver drives not more than 90km/h, they still can control the bus if something happens on the road. They still can break but if they drive exceeding 90km/h, the might not control their bus if anything happens on the road. They could hit other vehicles.” (Respondent C)

Based on the statement, the researcher concluded that drivers should drive not more than 90km/h so that they can still control the bus if anything happens and this can avoid bus accident. Below is the result of the respondents’ answer on the question whether speeding can lead to accident. Most respondents agreed that speeding can cause accident. Based on the answers, the study concluded that drivers should drive not more than 90km/h so that they still can control the bus if anything happens and this can avoid bus crashes as shown in Fig. 3.

Fig. 2. Results weather factor can cause bus crashes for Express Bus Services on the eastern south route.

Fig. 3. Results speeding can lead to bus accident for Express Bus Services on the eastern south route.
V. DISCUSSION

Respondent A which is the Head of Department of A N B Express Bus Services suggested that bus drivers should have their own recorded book that showed all their summons. To renew the new record book, the bus drivers should pay their entire summons. According to Cheng (2013), as cited in The Simple Way To Prevent Bus Accidents, published in The Star Online [10], he mentioned that bus drivers should also be required to possess an annual practicing certificate which has to be displayed in the bus. One of the conditions for renewal is that the driver must have settled all outstanding traffic summonses. Having to do so will hit the driver’s pocket hard and he will be more careful in future. This will help the organization to manage driver’s recorded book, for those who haven’t settled up their summons can’t have a new record book and their allowances for trips also will be reduced.

Respondent E who is the operation manager for the eastern south region recommended that the company should offer higher salary to the drivers. Some drivers are very exhausted after undergone many trips. This is very dangerous because it will lead to bus accident because the drivers cannot focus on their driving. This is dangerous to passengers and also to drivers themselves. As mentioned by Yap [11], most drivers need sufficient cash in order to cover the daily expected expenses. When they get less amount of salary, they tend to do extra trips regardless of their body condition at that time. Therefore, getting higher salary will make them focus on their normal schedule without asking for extra trips.

Respondent C, D and G suggested that company should give monetary rewards for drivers who have zero accident and summon in the assessment year. This will give motivation to them to drive the bus carefully. As stated by Mastros [12], Rewarding Your Drivers, “Some may balk at paying extra for what drivers “should” already be doing, but the reality is, incentive is often what makes the difference between a worker giving 90%, and one giving 100%”. Therefore, giving monetary rewards to drivers may indirectly reduce the number of road accident. This can save lives of the passengers, the drivers and the passers-by and also reduce losses that may incur by the company when the accident happens.

VI. CONCLUSION

The alarming rate of road accident involving express buses has attracted attention from various parties involving the companies, researchers and the policy makers. Due to its importance, this research project was undertaken to identify factors that contribute to the road accident involving express buses in particular A N B Express Bus Service operating on the eastern south route. The findings indicate that three factors are the main contributors to road accident involving express busses. They are driver’s behavior, work schedule and bus condition. Bus companies especially A N B should give serious attention to these three factors to avoid road accident and subsequently could save lives of the passengers, the drivers and the passers-by and also could reduce the losses incurred if the accident occurs. Future research should carry out similar studies involving different research design, greater number of participants and on bigger scope so that the findings can be further validated.

REFERENCES

Digital Competencies among Adolescence

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Abstract – Digital technologies are increasingly being used in society and the economy, and this is transforming ways of working, studying, communicating, accessing information, or spending leisure time, among others. The Gen Z kids nowadays are very savvy in using digital technology including social media. However, not all of them have received a formal training or any support for developing digital competence in order for safer environment in digital world. Therefore, this study was conducted to investigate the level of internet competencies among adolescent in Malaysia. An exploratory study was conducted at the initial research stage to understand the nature of the problems and situations. The study was performed through the means of online test and focus group discussion. The result indicated that student’s performance for this category is less than satisfactory. Finally, the schools’ average score for digital empathy is less than satisfactory with score of 91. These findings give actionable recommendations to parents and teachers to enable their children/students to face the challenges and adapt to the demand of digital world.

Keywords – digital competencies, digital world, information society, rural students

I. INTRODUCTION

Internet and especially social technologies are used for various purposes by different groups of citizens, and are also being appropriated for new social activities. Through online spaces, citizens can access resources, follow, interact, and create and share with other people globally. People from all age groups are participating in different types of online networked activities, which can support work, learning and citizenship (Ala-Mutka, 2008). However, not all of them have received any support for developing digital competence. In addition to that, internet wellness is a major concern in today's global society. This is due to the emergence of internet-related crimes such as rape; theft and piracy have made the young adults in particular a very vulnerable demographic. In Malaysia, for example, fraud cases detected in cyberspace jumped 20% last year compared to 2015. Besides fraud, the top cybercrime was intrusion, spam and malicious code. Statistics shown a total of 2,428 cybercrime incidences reported between January and April this year of 2017 (Cybercrime Malaysia, 2016).

In Malaysia, the number of active internet users in the country has now exceeded 20 million, with 16.8 million being active on social media (MCMC, 2016). The adoption rate amongst Internet users was decreasing as the range of age ascends. In terms of Internet experience, 31.9% of Internet users were connected as early as five years old. Nearly 80% of the 19–49 age group were among internet users, while 20% of the 55-74 age groups had hardly used it. This highlights the need to ensure that everybody has the opportunity from early on in their education to see the value of digital tools and media and acquire the skills to use them. Another lesson from the statistics is the necessity to develop learning opportunities for those who have already finished with formal education, but who need digital competence to participate in society and for their work and personal lives. Furthermore, parents need an understanding of digital competence in order to protect, support and educate their young children in digital usage. For example, recent data shows that currently 77% of 13-16 year olds and 38% of 9-12 year olds in Europe use social networking sites, and not all of them are aware of the privacy settings. A study conducted in Malaysia found that female students are more aware and have affirmative insights than male, students in the age group of 18-23 years have lower perception and awareness than those aged 24 years and above and those with higher academic qualifications are more aware at cybercrime and perceived the issue of risk differently (Hasan, Rahman, Abdillah, & Omar (2015).

Therefore, it is in the interest of the researchers to explore digital competence and internet wellness behavior in cultivating civic-mindedness society to face challenges in life at this era of digital globalization. An exploratory study was conducted at the initial research stage to understand the nature of the problems and situations. The study was performed through the means of online test and focus group discussion. Studying digital competence and promoting internet wellness is crucial for understanding the well-being of people’s well-being.

II. REVIEW OF LITERATURE

A. Digital Competence

B. Technological advancement has made people utilize technology in their daily life where the digital competencies is defined as one of the central competencies needed in the future, and the ability to use digital tools was defined as a basic skill (Iломiκи et al., 2016). The key competencies of lifelong learning in a knowledge society is digital competence where besides the ICT skills, other...
aspects are equally important, such as critical thinking in the use of new technologies and media, safe and responsible use, risk awareness and ethical and legal considerations.

Digital competence is also described as being able to connect based on social connections and interaction (Iломáй et al., 2016). For the young adult employees to be able to practice the use of ICT skills in their work may influence their work performance as well as how a digital competence can perform in their work and life. The development of ICT has changed knowledge work significantly in recent decades. In order to understand digital technology practices among them and to accommodate their needs, a holistic approach encompassing a close examination of their online practices and information seeking behavior is advocated (Alam and Imran, 2015)

C. Digital competence measurement

Competencies are always measured from the basis of skills, knowledge and attitudes (Ala-Mutka, 2011). The European policies have taken several approaches to digital competence that emphasize on different perspectives and specific concepts. The examples include digital society, ICT for innovation capability, lifelong learning and employment. Based on sequential research work, Ferrari (2013) reported one of the issues being highlighted globally is no longer on the access to and use of technologies, but the capability to benefit from them in a meaningful way. Hence, a conceptual model for digital competence is offered that evaluates on the communication and collaboration, information management, learning and problem solving and meaningful participation. Interestingly, a digital competence framework for citizens that captures the essence of information and literacy, communication and collaboration, digital content creation, safety and problem solving has been developed by Vuorikari et al., (2016). Another way to measure Digital Competencies is by looking at DQ (Digital IQ). DQ is referring to Digital Intelligence which a comprehensive set of technical, cognitive, and socio-emotional competencies that enable individuals to face the challenges of and adapt to the demands of digital life. In DQ it consists of 8 broad areas: digital identity, use, safety, security, emotional intelligence, communication, literacy, and rights. From these 8 areas next been divided into 3 levels: Digital Citizenship, Digital Creativity, and Digital Entrepreneurship. Where each level has their own target Digital Citizenship – the ability to use digital technology and media in safe, responsible and effective ways; Digital Creativity - The ability to become a part of the digital ecosystem by co-creating new content and turning ideas into reality by using digital tools and Digital Entrepreneurship - The ability to use digital media and technologies to solve global challenges or to create new opportunities.

D. Digital learning

The world is digitizing, and higher education is not immune to this transition. The trend is well underway and seems to be accelerating as top universities create departments and senior leadership positions to explore processes of digital learning innovation within the academy (Siemens, Gašević, & Dawson, 2015). It was further added a society or academic organization is required to facilitate the advancement and adoption of digital learning research. In exploring for digital learning competencies, Vaitis et al., (2016) developed the Online Learning Activities for Medical Education (OLAmED) concept, which builds on unified competency frameworks and generic technical standards for education. The results show the tools promote learning and set a base for a community of medical educational contents across different education context. Thus, it signifies for the important attribute of digital competency.

E. Digital technology as a lifestyle

The computers, networking, the Internet and ubiquitous applications have revolutionized how human think, act, interact and lead the lives. Changes and transformation occur to the economics, education, education, politics and governance (Deutsche Bank Research, 2012). Not a single thing is left unaffected by the Internet. The physically connected society is beginning to blur and the digitally connected society is emerging. In some countries, digital and k-economy, digital society and digital governance are becoming more common. With social media and social networking, they become the catalyst to the digital society emergence.

The Internet and social media promote for more transparency, open interaction, open culture and open innovation. They are transforming the social hierarchy and structure, and eventually the social norms. How the society adapts to the new technology vary? While some are diligently reacting in accordance to the acceptable Internet behavior, some others act and think differently (Haviland, Pincus and Dial; 2003, Wang and Kiryu, 2003).

F. Malaysian Digital Technology Landscape

The globalized online learning is one of the agendas in the Malaysian education transformation. Utilizing the massive open online course (MOOC), the Malaysian Higher Education Ministry has set for 70% blended-learning activities by 2025 (Tapsir, 2016). It was further added the aim of the learning experience is to change the learning mode and the learning environment. With a total of 79,016 academics and 1.29 million students in public and private higher learning institutes, promoting for competencies in the digital learning is a challenge (Tapsir, 2016).

In addition, recent statistics from the Malaysian Communications and Multimedia Commission (2016) show there are 21mil Internet users in Malaysia, which is equivalent to 68.5% of the total population. Comparing between the age cohorts, the population age between 18 and 44 contributes to 72% of the total Internet usage. On average, Malaysians spend 5.1 hours a day on the Internet.
and 2.8 hours a day on social networks. The internet usage is the main aspects of technology that sets as the digital lifestyle.

III. METHODOLOGY

A. Research Design
Since the aim of the research is to assess the digital competencies, level among rural school children exploratory research using a DQ based Survey were conducted young adults. The children completed a DQ citizenship scorecard within 30 minutes that comprised of eight-citizenship competencies survey i.e.: screen time management, privacy management, cyberbullying management, digital citizenship identity, digital footprint management, cyber security management, critical thinking and digital empathy. Example of survey measurement scale includes requires attention, less than satisfactory, satisfactory and excellent.

B. Respondents Background
The participants were selected based on purposive sampling, that referred to selection of sampling based on their unique and atypical attributes, whom the researcher believes were able to provide honest answers that will relevantly answering the research questions and assisting in the quiz. 10 students for sub urban schools in East Coast region comprised of 16 years old (5 girls and 5 boys).

IV. FINDINGS

Figure 1, shows the summary of the school average DQ score of 89 which is below than the national average score. The results showed that students DQ requires attention by parents, caregivers or teachers.

The findings revealed that screen time management performance of the school children requires most attention as the school’s average score for this category is 71 whereas the national average score for this category is 106. The second competency that requires attention by parents, caregivers and school teachers is privacy management. The school’s average score for this category is 83 which is lower than the national average score for this category which is 101. Thirdly, cyberbullying management school’s achievement is less than satisfactory as the school’s average score for this segment is 92 compared to 96 for national average score. Next, the average score for digital citizen identity is less than satisfactory as the student’s score 99 in this category which is behind the national average score of 102.

The school average score for digital footprint is 89, which is less than satisfactory as the national average score for this category is 105. The DQ scorecard further revealed that cyber security management average school’s achievement is 91, which is less than satisfactory as the score is lower than the national score of 101. In term of critical thinking in using digital devices, the school’s average score is 94, lower than the national average score of 100. The result indicated that student’s performance for this category is less than satisfactory. Finally, the school’s average score for digital empathy is less than satisfactory with score of 91.

V. DISCUSSION AND CONCLUSIONS

The findings of the study provide the evidences for the level of eight core digital citizenship competencies among school children in rural school. Schulz (2018), highlights the eight core digital citizenship competencies that children need and developed their DQ Digital Citizenship includes:

• Screen Time Management - measures Digital Citizenship students’ ability to manage screen time, multitasking, and engagement in various digital media activities with self-control.

• Privacy Management - measures your students’ ability to handle with discretion all personal information shared online to protect one’s and others’ privacy.

• Cyberbullying Management - measures students’ ability to detect cyberbullying situations and handle them wisely.

• Digital Citizen Identity - measures students’ ability to build and manage healthy identities online and offline with integrity.

• Digital Footprint Management - measures students’ ability to understand the nature of digital footprints and their real life consequences, and to manage them responsibly.

• Cyber Security Management - measures students’ ability to protect personal data by creating strong
passwords and to manage various cyber-attacks, i.e., SPAM / SCAMs / Phishing.
  • Critical Thinking measures - students’ ability to distinguish between true and false information, good and harmful content, and trustworthy and questionable contacts online.
  • Digital Empathy measures - students’ ability to be empathetic towards one’s own and others’ needs and feelings online.

The result shows that the children need to be assist in term of managing the screen time and also protect the privacy when they interacting via online. This test is essentials because with the DQ test it can minimize the cyber risk to student such as cyber-bullying, cybercrime and threats, false information and privacy invasion. Moreover, DQ will help on maximizing the opportunities such as students can develop job-related skills when they learn how to read, write, and participate online. Technology also can furthermore foster entrepreneurial thinking, helping children develop citizenship norms when they engage in social activism through digital platforms.

ACKNOWLEDGMENT

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REFERENCES


Inter-professional Teamwork and Inter-Professional Collaboration Practice among Physicians and Nurses in Malaysia: Analysis of Reliability and Validity

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Abstract – In healthcare organization, working as teamwork is important when they need to deal with different type of patients. The collaboration between physicians and nurses will give the best outcome to the patient due to their consistency working together in their daily working life. Collaboration at this level requires physicians and nurses to work together with open minds and to value what each team member brings to the team. In addition, to enhancing healthcare outcomes, healthcare professionals could gain many benefits from implementing inter-professional collaboration (IPC) within a healthcare environment. There is very important for healthcare professionals to understand the value of inter-professional collaboration to improve the effectiveness of healthcare organizations. This research was implemented to study the relationship between three independent variables (Interactional Factors, Organizational Factors, and Organizational Cultural Factors) of Inter-professional Teamwork and a dependent variable (Inter-professional Collaboration Practice). The target population for this study was the physicians and nurses where the questionnaires has been distributed randomly through online survey in Malaysia. There are 60 questions were returned and it came from 30 physicians and 30 nurses. Thus, this paper is aimed to determine the validity and reliability of the data survey collected.

Keywords – inter-professional teamwork, inter-professional collaboration practice, interactional factor, organizational factor, trust, respect and communication

I. INTRODUCTION

Working together for a better future is the best words that can be used for a teamwork in organization. In healthcare environment, patient safety is being considered as one of the major things that should be focus by the healthcare organizations. As it known that, almost every processed by the healthcare professionals carries potential risk and problem associated with its use in practice (Flin, Burns, Mearns, Yule, & Robertson, 2006). Besides, it is difficult for healthcare professionals to meet every needs of their patients if they not fulfil their own needs first (Yildiz, Ayhan, & Ergodmus, 2009). However, the important of relationship between physicians and nurses may contribute to the biggest achievement not only for the organization but to their patients as well. In taking care of patient safety can be beneficial for the organization which they can improve their patient safety, improve organizational reporting errors, safety behaviors, safety audit ratings, and self-reporting of errors (Hellings, Schrooten, Klazinga & Vleugels, 2007; Mearns, Flin, Gordon, & Fleming, 2001; Singer et al., 2009; Zohar, 2000). IPC has been proved that the collaboration among professionals can improve health outcome (Chan & Wood, 2010) as long as the healthcare professionals have a good continuous interaction, coordinated efforts, and knowledge sharing among them (Mary, et al., 2015). The healthcare professionals in this study will focus on physicians and nurses. It is because the relationship between physicians and nurses have often been seen as problematic and a barrier to collaboration (Jones Elwyn, Rapport, & Kinnersley, 1998; Salvage, 2000), yet little is known about the nature of such inter-professional relationships. However, sometimes it can be hard to the professionals to maintain a good relationship especially in communication, trust, and respect during their working time. Thus, this paper is aimed to examine on the relationship between independent variables (interactional factor, organizational factor, and organizational cultural factor) and inter-professional collaboration practice among physicians and nurses in Malaysia.

II. METHODOLOGY

The main focus of this paper is to assess the goodness of measure (validity and reliability) of independent variables (Interactional Factors, Organizational Factors, Organizational Cultural Factors, and Job Satisfaction) and a dependent variable (Inter-professional Collaboration Practice). The survey method was employed to collect primary data from the physicians and nurses in Malaysia. Data was collected through survey questionnaires and it were personally distributed randomly using online form to physicians and nurses in private and public healthcare settings to test the validity and reliability of the questions. Overall, there are sixty (60) respondents was answered this questionnaire during the pilot data collection test and it includes thirty (30) physicians and thirty (30) nurses. The obtained data were analyzed using IBM SPSS version 23 and SmartPLS.

III. RESULTS

A. DEMOGRAPHIC PROFILE

A descriptive analysis was conducted to describe the demographic background of the respondents. The demographic profiles of the respondents are shown in
Table 1. Referring to Table 1, the data results showed that 60 respondents from two disciplines had equally divided which is 30 respondents were physicians (n=30; 50%) and another 30 were nurses (n=30; 50%) and 54 respondents were female (n=54; 90%). Majority of the respondents were from Malay ethnicity (n=55; 91.7%). Most of the healthcare professionals has working experience more than 4 years in the industry (n=36; 43.35). In terms of duration of how much each healthcare professional collaboration with other professionals has shown that most of them are work consistently (n=26; 43.3%) and in quite a lot (n=21; 35.0%). Majority of the respondents held a degree (n=226; 53.4). Majority of the respondents has education level and they held a diploma (n=28; 46.7%) and degree (n=28; 46.7%).

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disciplines</td>
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<tr>
<td>Physicians</td>
<td>30</td>
<td>50</td>
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<tr>
<td>Nurses</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
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<tr>
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<tr>
<td>Ethnicity</td>
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<td>1.7</td>
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<tr>
<td>Others</td>
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<td>3.3</td>
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<tr>
<td>Working Experience</td>
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<td></td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>21</td>
<td>35</td>
</tr>
<tr>
<td>2-4 years</td>
<td>13</td>
<td>21.7</td>
</tr>
<tr>
<td>&gt; 4 years</td>
<td>36</td>
<td>43.3</td>
</tr>
</tbody>
</table>

Table I
DEMOGRAPHIC PROFILE OF RESPONDENTS

B. Assessment of Measurement Model

The conceptual model was empirically tested for confirming on the validity and reliability. The Cronbach’s Alpha, indicator loading, CR and AVE were used to check to validity and reliability and for the reflective constructs. Some items were deleted due to low factor loadings and for the purpose of increasing the AVEs. Table 2 shows the deleted items.

Table 3 shows the item loadings are exceed 0.60 which is it is required for an exploratory study (Ramayah et al., 2018) and values for composite reliability (CR)> 0.7 and it can be regarded as satisfactory. Based on the results shown in Table 3, all constructs meet the minimum value of the threshold requirement of composite reliability and average variance extraction (AVE) are greater than 0.5 and meet requirement of composite reliability (CR) more than 0.7 (Hair et al., 2014).

Furthermore, a discriminant validity procedure was conducted to observe how the constructs are truly distinct from one another. This is achieved by assessing the cross-loading criterion, Fornell and Larcker’s (1981) criterion and Heterotrait-Monotrait ratio of correlations (HTMT).

Table 2
DELETED ITEMS

<table>
<thead>
<tr>
<th>Construct</th>
<th>No of Deleted Items</th>
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</thead>
<tbody>
<tr>
<td>Inter-professional Collaboration Practice</td>
<td>4</td>
</tr>
<tr>
<td>Trust</td>
<td>2</td>
</tr>
<tr>
<td>Respect</td>
<td>1</td>
</tr>
<tr>
<td>Empowerment</td>
<td>1</td>
</tr>
<tr>
<td>Job Resources</td>
<td>2</td>
</tr>
<tr>
<td>Power Distance</td>
<td>2</td>
</tr>
<tr>
<td>Uncertainty Avoidance</td>
<td>1</td>
</tr>
<tr>
<td>Individualism vs Collectivism</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3
INTERNAL CONSISTENCY AND CONVERGENT VALIDITY

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Cronbach alpha</th>
<th>AVE</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inter-professional Collaboration Practice (IPCP)</td>
<td>0.855</td>
<td>0.699</td>
<td>0.903</td>
</tr>
<tr>
<td>2. Inter-professional Teamwork (IPT)</td>
<td>0.827</td>
<td>0.743</td>
<td>0.896</td>
</tr>
<tr>
<td>3. Interactional Factors:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Communication (CM)</td>
<td>0.811</td>
<td>0.633</td>
<td>0.873</td>
</tr>
<tr>
<td>ii. Trust (TR)</td>
<td>0.673</td>
<td>0.753</td>
<td>0.859</td>
</tr>
<tr>
<td>iii. Respect (RE)</td>
<td>0.838</td>
<td>0.671</td>
<td>0.890</td>
</tr>
<tr>
<td>3. Organizational Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Leadership (LS)</td>
<td>0.941</td>
<td>0.774</td>
<td>0.953</td>
</tr>
<tr>
<td>ii. Empowerment (EP)</td>
<td>0.892</td>
<td>0.76</td>
<td>0.926</td>
</tr>
<tr>
<td>iii. Job resources (JR)</td>
<td>0.801</td>
<td>0.611</td>
<td>0.862</td>
</tr>
<tr>
<td>iv. Job fairness (JF)</td>
<td>0.803</td>
<td>0.631</td>
<td>0.872</td>
</tr>
<tr>
<td>4. Organizational Cultural Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Individualism vs collectivism (IC)</td>
<td>0.401</td>
<td>0.625</td>
<td>0.769</td>
</tr>
<tr>
<td>ii. Uncertainty avoidance (UA)</td>
<td>0.918</td>
<td>0.802</td>
<td>0.942</td>
</tr>
<tr>
<td>iii. Power distance (PD)</td>
<td>0.634</td>
<td>0.562</td>
<td>0.794</td>
</tr>
</tbody>
</table>
Based on the results shown in Table 4, there is a clear evidence of the discriminant validity establishment following the suggestions of Kline [13] and Gold et al., [14]. As there has been criticism on the usage of Fornell-Lacker’s (1981) criterion to detect discriminant validity, HTMT Ratio correlations that offers a stringent of better discriminant criterion was used. The results of the HTMT inference using bootstrapping confidence interval technique are less than 1. Therefore, it is confirmed every construct is truly distinct from one another. Moreover, a procedure for addressing the collinearity issue had been conducted. Pallant (2011) suggest the existence of multicollinearity does not contribute to a good regression model and the value of VIF should be assessed. Hair et. al. (2011) suggest that VIF value of 5 or higher indicates a potential collinearity problem. Thus, the results shown in Table 4, multicollinearity is not an issue in this present study since the VIF values for all the constructs are less than 5.

V. DISCUSSION

Based on the assessment of measurement model analysis findings, it can be summarized that all constructs of the inter-professional teamwork (IPT), interactional factors; including communication (CM), trust (TR) and respect (RE); organizational factors; including leadership (LS), empowerment (EP), job resources (JR) and job fairness (JF); and organizational culture factors; including individualism vs. collectivism (IC), uncertainty avoidance (UA) and power distance (PD). All variables are valid measures of their individual constructs based on their factor estimations and statistical significance. Therefore, the measurement model established adequate reliability and validity standard that can be employed for data collection stage of the actual study. The study findings suggest that all variables are positively contributed to inter-professional collaboration practice (IPCP).

V. CONCLUSION

This pilot study tested a proposed conceptual framework based on the inter-professional collaboration practice previous studies. The instrument used in this study fulfill the acceptable requirements of the reliability and validity analyses by using the Smart-PLS software. The outcome of the path model analysis has confirmed that inter-professional teamwork, interactional factors, organizational factors and organizational culture factors are significantly correlated with inter-professional collaboration practice. Currently, the main data collection of this study will be conducted at selected teaching hospitals would obtain a large number of respondents which hoped to encourage and contribute to research findings that are more substantial. Ethical approval has just been received from ethics committee of Research Management Centre (RMC), Universiti Teknologi MARA (UiTM), Malaysia.

<table>
<thead>
<tr>
<th>No</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>VIF</th>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
<td>3.541</td>
</tr>
<tr>
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<td>CM</td>
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<tr>
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<td>6</td>
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<td>8</td>
<td>JR</td>
<td>0.534</td>
<td>0.332</td>
<td>0.36</td>
<td>0.587</td>
<td>0.436</td>
<td>0.197</td>
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<td>0.731</td>
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<td>0.547</td>
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<tr>
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<td>0.466</td>
<td>0.425</td>
<td>0.632</td>
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REFERENCES


Inter-professional Teamwork and Collaboration Practice at University Hospitals

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Abstract – There are the numerous number of healthcare professionals with different expertise that are working together in the hospital. In addition, these people must have to work together to provide the best service and successful treatment to ensure that patients are trust with the service and also to make sure the patient’s health can be better. Every employee should know their important job roles and responsibilities before they start their task. In healthcare settings, physician and nurse has known as most important people that are closed to the patient. In health care practice, inter-professional collaboration practice (IPC) require continuous interaction, coordinated efforts and knowledge sharing among health care professionals. Therefore, the aim of the present paper is to determine the relationship between the three factors of Inter-professional Teamwork (Interactional Factors, Organizational Factors, and Organizational Cultural Factors) and Inter-professional Collaboration Practice. The survey has distributed to 200 respondents among physicians and nurses. The survey will divided equally between these two respondents, which is 100 surveys for physicians and another 100 for nurses. The study is important as it helps in providing the best factors that can be used among healthcare professionals to improve the collaboration and to make it more efficient. Thus, another aim that will discussed further in this study is about the most contributing factors of inter-professional teamwork towards inter-professional collaboration practice.

Keywords – inter-professional teamwork, inter-professional collaboration practice, Interactional, Organizational, Organizational Culture.

I. INTRODUCTION

Collaboration in healthcare industry is important to learn among healthcare professionals especially physicians and nurses. The difference expertise between healthcare professionals are really need to understand about each other profession’s roles to make sure the treatment and service that deliver to patients is successful. The World Health Organization (2010) stated that the detection of diseases to the prevention, and until the treatment of serious diseases such as HIV/AIDS and tuberculosis needed healthcare professionals from different expertise to collaborate to treat patients. Therefore, good collaboration will influence positive teamwork, while bad collaboration may affect the teamwork relationship. A study by Hojat and Gonzela (2011) identified the teamwork relationship is known as important construct of collaboration practice among healthcare professionals. However, in Malaysia, studies about inter-professional teamwork and collaboration are reported rarely in the literature. Thus, the purpose of this study is to determine the relationship between inter-professional teamwork and inter-professional collaboration practice. On the other hand, this research will identify the most contributor factors of inter-professional teamwork towards inter-professional collaboration practice among physicians and nurses at university hospitals in Malaysia.

II. LITERATURE REVIEW

INTER-PROFESSIONAL TEAMWORK (IPT) AND INTER-PROFESSIONAL COLLABORATION PRACTICE (IPC)

Many scholars has defined the meaning of inter-professional collaboration practice in their own study. Sullivan et al. (2015) defined the inter-professional collaboration as the collective involvement of difference professional healthcare professionals that working together with patients, caregivers, families, and communities to communicate about their own expertise to deliver the highest quality of care and service to society. While, the meaning of inter-professional teamwork by Deneckere et al. (2012) when two or more healthcare professionals with difference backgrounds and skills that sharing same health goals, and applying physical and mental effort in planning patient care. To improve the organizational performance, the strengthening relationships and coordination among team members is very important (Deneckere et al., 2013). Sharing knowledge and expertise among healthcare professionals may improve the service and care problem towards patient. This is because the multiple professional disciplines who shares their knowledge and skills can achieve favorable patient care (Hunter & Segrott, 2014). However, the collaboration between healthcare professionals can help the organization preventing the problem of care processes, make the process of learning from other disciplines easier, increase patient satisfaction, and also can boost the job satisfaction among professionals (Wen & Schulman, 2014; Morgan et al., 2015). Some of studies suggest that inter-professional teamwork and collaboration improve patient outcomes (World Health Organization, 2014; Archer et al., 2012; Zatzick et al., 2014). Besides that, healthcare workers who are serve as part of a team and work in collaboration have a tendency to get job satisfaction and more effective than those who do not (Raab et al., 2013). Thus, the main of this research is to focus on the relationship and the most contributor of these three factors of inter-professional teamwork.
(interactional factors, organizational factors, and organizational factors) towards inter-professional collaboration practice (IPCP). Figure 1 shows conceptual framework of this study.

![Conceptual Framework](image)

**Figure 1 conceptual framework**

**INTERACTIONAL FACTORS**

The three elements of interactional factors will be focus in this research study are communication, trust, and respect. A study has suggested that the determinants of interactional factors that can contribute to successful inter-professional collaboration is consists of effective communication, the existence of mutual respect and trust (San Martín-Rodriguez, Beaulieu, D’Amour, & Ferrada-Videla, 2005). At this part, it is important for healthcare professionals to understand that the **communication** skill among healthcare professionals is important to ensuring that the messages are fully understand. A growing number of evidence shows many medical errors reported were due to poor communication and fragmented communication between healthcare providers (Baker, Amodeo, Krokos, Slonim, & Herrera, 2010; Md. Zahidul, 2013). Some barriers of effective communication among healthcare professionals are because of lack of experience, lack of structure and standardization, lack of confidence, complexity of healthcare, and the distracting nature of healthcare settings (Boaro et al., 2010; Liaw et al., 2014; Nadzam, 2009; Pfaff et al., 2014; Rice et al., 2010). Thus, this is a priority for the healthcare organization to improve the effectiveness of communication (ACSQHC, 2012; IPEC, 2011). In human relationship, **trust** is important as a structure for collaboration and it function in healthcare teams (Roth & Markova, 2012). For example, a physician may rely on nurse and nurse have to put their trust on physician when they need to collaborate to complete care service to patients. Distrust can come in various ways but in healthcare setting, researchers have pointed out some of distrust issues can happened because of lack of confidence in the other’s skills and lack of awareness of the other’s role in patient care (Bradley et al., 2012) and negative images of the profession (Mior et al., 2010). Other than that, they also have difference philosophies and scope of practice (Mior et al., 2010), feeling threatened by other’s involvement and being afraid of losing some territory (Dey et al., 2011), and doubting the other’s motivation in providing care (Bradley et al., 2012). Prior research realized that IPC team must foster equal status between team members (Sullivan et al., 2015). In addition, collaboration occurs when individuals have **mutual respect** for one another and one another’s professions and are willing participants in a cooperative atmosphere (Bridges et al. (2011). This can be done through understanding and respect for the other professions within health and social care. World Health Organization (WHO) (2010) used the term inter-professional collaboration to refer to a professional’s ability to communicate with and carry out treatment in a productive and mutually respective manner with other professionals.

**ORGANIZATIONAL FACTORS**

There are four dimensions of organizational factor will be focus in this study. The first organizational factor is **empowerment**. Carless (2004) and Haas (2010) described empowerment as giving employees the power to make decisions about their daily activities. Empowerment in organization will make work easier and every activity in organization will be smooth. Achieving an organization’s goals and target are not easy without employees. Every leader needs their subordinates to make sure every works have completed on time. Therefore, a great empowering leadership is needed in every organization since empowering leadership means sharing their power, motivating other people around them, and also providing development opportunities (Amundsen & Martinsen, 2014). According to May et al., (2004), they revealed that any organizations with psychological empowerment conditions will provide job enrichment and work-role fit. Other than that, it also provides a supportive environment among manager and co-workers and it contributes to availability in terms of resources available. The second factor of organizational will be focus on **leadership**. Leadership is very important for making an organization successful. Many authors agreed that leadership could play as a key role in determining performance and success of an organization (Block, 2003; Fullan, 2001; Yukl, 2010). To influence and implement a leadership style in healthcare organization is not as easy as expected. One of the barriers towards leadership in collaboration is group members. According to Dow, DiazGranados, Mazmanian, & Retchin (2013), group membership could act as a barrier to shared and distributed leadership since there are many different beliefs among healthcare providers about what leadership is and how it should be practiced. However, Cho & Park, (2011) argued that trusted leaders spread job satisfaction, organizational and individual performance, organizational commitment, and employees’ discretionary skills. **Fairness** in organization is another key factor which can
affect behaviors and improve the effectiveness of functioning in an organization (Croppanzano, Bowen, & Gelliland, 2007). Every employee really cares about fairly enacted procedures (E. Rupp, 2011) and unfairness in organization can contribute to strong negative responses among employees (De Cremer, 2004). Another study has shown that organizational justice can enhance the understanding of employee’s trust, fairness, and the management of change and it can increase the success of organization (Erwin & Garman, 2010; Nicklin & Williams, 2009). Furthermore, previous researchers analysing the framework of fairness in organization described positive and negative impact on various outcomes among employees (Burnes & Jackson, 2011; Lance Frazier, Johnson, Gavin, Gooty, & Bradley Snow, 2010; Keren & Kristy, 2011). The next factors that will be focus in this study is team resources. Employees will use interaction all the time during their work to communicate with their team members and the team members need to support each other to make sure goals successfully achieved. In one study by Schaufeli et al., (2009) resources was defined as the organizational aspect of a job that could reduce the job demands, be functional to achieve work goals, can stimulate personal growth, learning and development, and it is also related to physiological and psychological costs. Many researchers agreed that job performance (Riketta, 2002) and behavioral outcomes including turnover (Griffeth, Hom, & Gaertner, 2000) and absenteeism (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002) in organization are related to the employees’ commitment towards the organization. In an organization, social support from top management, supervisors, and among employees can cause an impact to the job outcomes in the organization. In another study, supervisor’s and co-workers’ social support can enhance an organization’s commitment (Chiaibur & Harrison, 2008; Ng & Sorensen, 2008).

ORGANIZATIONAL CULTURAL FACTORS

Malaysia is a multicultural country that consists of Malays, Indian, Chinese, and other races who are living and work together under one country. It may be important for multicultural country to make the people familiar with the organizational culture. Organizational culture has defined as the shared values, beliefs, or perceptions held by employees within an organization (Stephen and Mary Coulter, 2016). Organizational cultures will shows the different ideologies, beliefs, and practices among worker in organization that sometimes would give the benefit to the organization or maybe not. A study by Tsai (2011) agreed that any organizations that have a strong culture makes employees more satisfied with their job and easy for employees to accomplish their goals. However, employees has known as asset for an organization and the most significant in order for organization to achieve their objectives. It is important for organization to create a great environment to employees that is suitable, conducive, and harmonious (DiLiello and Houghton, 2008). Moreover, this condition may have impact on job satisfaction among employees and it has been proved by previous researches (Tsai, 2011; Huey-Ming, Shake, and Richard, 2011; Jandaghi et al., 2009; Kevin, Dorothy B, et al., 2010). According to this study, the researcher will focus on the relationship between the organizational culture and inter-professional collaboration practice that focus on professional group such as physicians and nurses at hospital universities in Malaysia.

III. METHODOLOGY

Ethical Approval

Ethical approvals for the research study are obtained from Human Research Ethics Committee of five University Hospitals in Malaysia and there are (1) UiTM Private Specialist Hospital, (2) Hospital Universiti Sains Malaysia, (3) IUM Medical Centre, (4) Pusat Perubatan Universiti Kebangsaan Malaysia, and (5) Pusat Perubatan Universiti Malaya.

Participant Eligibility

Participants will be included in the study if they meet the following inclusion criteria: (a) professional disciplines as physician and nurse, (b) working at university hospital, and (c) Working adult from the age 18 to 60 years.

Data collection method

This quantitative study will use questionnaire as a method to collect data from physicians and nurses. This data will be distribute by face-to-face to each respondents. The total questions have 72 questions in total and it has divided into eight sections that will be answer by respondents (refer table 1). The participation in this study is voluntary and anonymity is fully guaranteed.

<table>
<thead>
<tr>
<th>Table 1: total questions of data collection</th>
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<tbody>
<tr>
<td><strong>Section</strong></td>
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<td>Section A:</td>
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<td>Section G:</td>
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<tr>
<td>Section H:</td>
</tr>
<tr>
<td><strong>Total number of questions:</strong></td>
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</tbody>
</table>

Sample Size and Research Design
GPowersoftware was used to calculate the minimum sample size required. Since the model had a ten (10) predictors (the factors of inter-professional teamwork), we set the effect size as medium (0.15) and power needed as 0.95. The sample size required was 172 samples. Hence, we set out to collect data that will equal to or slightly larger than the required number which is 200 samples from five (5) hospitals. Thus, the questionnaire will be distribute according to the number of physicians and nurses that are working from each hospitals. Quota Sampling is used in this study to sample subgroup based on population from physicians and nurses and they are equally divided into two groups: 100 physicians and 100 nurses. Then, the data will be distribute to 20 physicians and 20 nurses from each hospitals.

Data analysis
The research model and the hypotheses will examine by means of structural equation modeling (SEM) using SmartPLS. The main advantage of SEM is that it allows the researcher to answer a set of interconnected enquiries within a single, systematic, and comprehensive analysis. In other words, a single-run of an analysis using SEM could simultaneously calculate scores for the measurement model (i.e. the correlation between the instrument items and their related constructs) and the structural model (i.e. the conceptualized linkages between the various constructs in the research model). Finally, a validity test will apply in this study to determine the presence of any possible validity threats. However, SPSS 25.0 will used to handle the descriptive analysis. A descriptive analysis explained the amount of participants and the proportion within each demographic variable (such as profession, gender and age) by using mean, standard deviation, minimum, and maximum values.

IV. CONCLUSION
Healthcare industry nowadays realize that the collaboration between healthcare professionals especially physicians and nurses is being an important issue to focus on because it may influence their working environment and services. Besides that, there are some of literatures have suggested the inter-professional teamwork and collaboration provides more comprehensive and effective services for patient (Harterink et al., 2014; West & Lyubovnikova, 2013; Khan, McIntosh, Sammartin, Watson, & Leeb, 2008; Campbell et al., 2001). However, this on-going study is to determine the relationship between inter-professional collaboration practice and the findings will suggests the healthcare professionals the good and bad contributor factors that affect inter-professional teamwork and inter-professional collaboration practice among physicians and nurses at university hospitals in Malaysia.

REFERENCES
Care pathways lead to better teamwork: Results of a systematic review. *Social Science & Medicine*, 75(2), 264–268. https://doi.org/10.1016/j.socscimed.2012.02.060


The Age of Facebook Marketing: is it Effective

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Bangladesh University of Professionals, Dhaka, Bangladesh

Paper ID: ICBM-19-1021

Abstract – This research is conducted to see how the consumers’ brand perception and purchasing decisions are influenced by different online marketing tools used across the industries online Chat assistance and Email advertising. Its purpose was so study the relationship between the different online marketing tools and techniques, online chat and Email and their effects on the brand perception and consumer purchasing decision. There are a lot of other influencing factors included in a decision making of a consumer for purchasing and developing a perception about a particular brand but the most important factors that play a defining role in changing the consumer brand perception and purchasing decision. Our results show that the residents of Dhaka who are active on internet over the other two variables which are online chat and email advertising. Different companies avail the online marketing strategy service in order to attract the potential customers and influence their purchasing decision and brand perception. There are no generalized factors that affect the consumer decision of purchasing and developing a brand perception in Dhaka.

Keywords – Facebook, effectiveness, consumer satisfactions

INTRODUCTION

Facebook marketing refers to creating—and actively using—a Facebook page as a communications channel to maintain contact with and attract customers. Facebook actively provides for this, allowing users to create individual profiles or business pages for companies, organizations, or any group attempting to develop a fan base for a product, service, or brand.

Facebook Marketing is used by:

- Brands. Food, electronics, home goods, restaurants—nearly any kind of brand can be promoted through Facebook, turning passive customers into active fans who follow news of promotions and developments, and who share with their own friends.
- Local businesses. Whether a business is family-owned, or a franchise of a larger company, a Facebook page can be used to turn a local customer base into a fan base that more commonly visits your store.
- Personalities. Musicians, celebrities, authors, syndicated columnists—anybody who makes their money through being known wants to be known by as many people as they can on Facebook.
- Non-profit organizations. Charities, political groups, and public service campaigns can all leverage the natural sharing capabilities of Facebook.

While originally marketed to college students, Facebook has expanded well beyond that demographic. More than half of all users are in the 18–34 age range, and slightly more than half of Bangladesh users are women. In Bangladesh, about half of all user profiles are accessed through mobile devices as well as through computers. Due to its considerable amount of users, there is a wide variety of market segments that can be reached on Facebook, and an active fan base for nearly any niche.

Advances in digital technology have made a significant impact on marketing theory and practice. Technology expands the opportunity to capture better quality customer data, increase focus on customer relationship, rise of customer insight and Customer Relationship Management (CRM). Availability of big data made traditional marketing tools to work more powerful and innovative way. In current digital age of marketing some predictions of effects of the digital changes have come to function but still there is no definite answer to what works and what doesn’t in terms of implementing the changes in an organization context. The choice of this specific topic is motivated by the need for a better understanding for impact of digital on marketing field. This paper will discusses the potential positive impact of the facebook on digital marketing. It also presents the evidence of positive views in academia and highlights the gap between academia and practices. The aim of this paper is to identify to evaluate the effectiveness of facebook marketing for medium to large sized Bangladeshi business using a quantitative as well as qualitative technique.

METHODS OF THE STUDY

The present chapter describes the key methodological components that used to achieve the objectives of the study. A research methodology is a systematically enquiry that permits the researcher to report the findings scientifically. For this reason this chapter starts by identifying the factors that affect the research design, and concentrate on the discussion of the steps involved in the research process by ranging from the formulation of the
research problem to the analysis and processing of data. Lastly, issues of validity and reliability, and the limitations faced in this research are discussed.

HYPOTHESIS

H1: The effect of online marketing through consumers on consumer purchasing decision and brand perception across industries.
H2: The effect of online advertising through consumers on consumer purchasing decision and brand perception across industries.
H3: The effect of online chat section on consumer purchasing decision and brand perception across industries.

Factors affecting the research design: For achieving the objective of the study, it is very much important to identify the factors that affect the design of this research. The explanation of the following dilemmas will help to identify the factors that affect the research.

Applied and descriptive research: The aim of the report was to evaluate the effectiveness of Facebook marketing. Our research topic is based on Applied research. Applied research is basically deals with solving the practical problems. So our research topic is conducting applied research. Because it is used to solve specific and practical problems.

Primary data collection:

We are conducting survey from 4 different areas, which is Mirpur, Bashundhara, shamoli, Banani. As we have a lack of time and resources, so we are conducting our research based on 100 samples.
We are collecting the information from university students, house wife, employers, masters level students through the survey. We are conducting survey in different ways like door to door survey, e-mail or phone calls.
We are starting survey from door to door, according to our place like university, shopping mall, relatives, neighbours. We will have the various interviews with the respondents about their experience. Those who are not able to survey in door to door, we are offering them to give their feedback through the mail. Through mail we are able to know their feedback.
We are proved from this research that bti has provided quality service to their customer.
At last we are also survey through telephone some group of customers. We are contact the respondents by telephone and ask a specific set of questions.

Secondary data collection:

We are also collecting data from various journal paper, conference paper or online database.

RESULTS

Findings and Interpretation of the Result:

In order to analyze and compare the various tools and techniques of across industries in online marketing through consumers. For this purpose we have used One Sample T-test.
The data analysis is performed in such a way that 90 experienced persons give their review about online marketing and share their experiences. At different age level and different income level the experience varies for some particular questions. But overall significance of the report shows by T-test and that’s we define at the 95% confidence interval and 5% level of significance the difficulty of shopping time, delivery time, security, reputation of the company & product reliability shows that we can express it by hypothesis whether online marketing is influential or not and we can make a accept of the initial hypothesis. The standard deviation and coefficient of variation shows that the all percentages are at approximately same level and we say the answers are positive through online shopping issue. Other some questions are come forward that relevant information of that product at the online, the security of that person who order this or the payment description process are discussed and like the previous one we get positive results here. Except some unreliable online pages give vague impact on this.
Table 3:

<table>
<thead>
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<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant information properly</td>
<td>90</td>
<td>3.4333</td>
<td>2.32258</td>
<td>.24482</td>
</tr>
<tr>
<td>Security of personal information</td>
<td>90</td>
<td>3.6778</td>
<td>1.07920</td>
<td>.11376</td>
</tr>
<tr>
<td>Payment description</td>
<td>90</td>
<td>3.6000</td>
<td>.94572</td>
<td>.09969</td>
</tr>
<tr>
<td>Outlook</td>
<td>90</td>
<td>3.1556</td>
<td>2.92300</td>
<td>.09729</td>
</tr>
</tbody>
</table>

The CV percentage shows that approximate all gives a same value that we can declare the positive impact on these issue comes at a same level that we say positive impact on research. Those some has a few bad experiences they goes through their neutral answer or give negative answers. Thus we give our recommendation about this issue and overall we can declare it as a very good positive research through online marketing.

**RECOMMENDATION**

1) More pure players will proactively look for opportunities for strategic acquisitions and partnerships to bridge offline and online worlds and generate crucial value from it. In the race to compete with Amazon, for many retailers, the discussion is not about “build”, it’s about “buy”.

2) Share of consumer online time spent on video is bound to increase steadily, forcing advertisers, publishers and media companies to reorganize and increase focus on video. More video consumption means more ads – and a new battle for programmatic advertisers and their partners. So that the descriptions of products as accurate as shown on the websites.

3) There must be transparency between online owner and customer. y. Personalization, trust, and transparency will go hand-in-hand, creating a better relationship with shoppers and businesses.

4) There must be a convergence of online and offline because major retailers will continue to offer better ways to collect products purchased online from their stores, including dedicated parking and in-store lockers.

5) If the owner or moderator of the company give feedback after sell, or that online sites enables to check delivery status of the goods that it would be better for them.

**CONCLUSIONS**

Consumers rely on the feedback of existing users and opinions of experts. This reliance tends to be static in the short run. Once a perception has been made about a product it cannot be change overnight and also makes the other means such as email advertisement and chat section. So in order to maintain a positive word of mouth about a particular product should be created and maintained from early in product’s life-cycle.

**5.1 Implications:**

We can say that the research implies that online marketing through consumers via word of mouth platforms proved to be the most effective tool across industries to influence consumer purchasing decision and brand perception.

**5.2 Future Research:**

Future research is possible in the area of online marketing through social media, specifically Facebook as its target reach is the highest. To complement this area of research, further research on internet access and wireless networking access in urban and rural areas can also be carried out.

**REFERENCES**

The Stimulus of Product Quality towards Customer Satisfaction

Mst. Tahlima Mursalin, Shanchita Das, Maria Ahmed Kuntu, Zarin Tasnim, Readwan Uzzaman Ratul

Abstract – Product quality is more important than product quantity. If a company wants to lead in the market it needs a better business plan than competitor and customer who will retain for the company if their expectation meet by the company product. Customer will be satisfied if the company value their expectation and product quality is the big business plan for customer satisfaction. From the past decades many companies reduce their price so that customer will buy their product and they will satisfy but when they are not retaining after using the product researcher try to find out some competitive advantages tools that satisfy the customer most. Customer will be satisfied when they will use the product, they will use the product when they will aware of the product, and their awareness depend on the product advertisement and the product quality itself is the best advertisement for the customers. There is huge research on the impact of product quality toward customer satisfaction and this study will help to demonstrate factors how product quality satisfies customers. From this study all the factors and solution come out from the manufacturing company (ACI Ltd.) and service industry (food industry) by providing questionnaire and interview to their quality management team and to customer how quality influence them to be satisfied for the product.

Keywords – Product and service quality, customer satisfaction, customer loyalty.

I. INTRODUCTION

In this competitive world for running a business competitive advantage is the vital part for any manufacturing and service industry. For achieving this competitive advantage many organizations sustain different kind of strategy but customer is the essential and the foremost way to achieve this competitive advantage. Gathering and achieving customer should not be the goal for a company but how they will retain for the company that is most significant. For retaining Customer for your company only way that work for so long that is your customer satisfaction. Customer becomes satisfied when your customer experiencing your product and their expectation is meeting by your products and service.

Product and service quality is the main determinant of customer satisfaction with different determinant. But today’s conscious customer can pay some extra but wants quality full product and service. They can consider delivery time, cost but wants the expected product with quality. Product and service quality is the assertiveness and global judgement for the superiority of the product and service.

With different options in the market for the customer, you may be wondering that product quality still matters and quality is not just about offering a standard product or service that exceed customer expectation it also drives the satisfaction of the customer and loyalty. It also can build company reputation by sustaining the existing loyal customer which recognized customer satisfaction.

Any customer will not choose a company’s product solely based on price, but often on quality. From this questionnaire result have shown that customer will pay more if the product or service meet their need. Customer manly focus on the company to deliver quality product. This product quality enhances company’s customer retention, build brand trust and boost your ROI by giving more importance on product quality. Because product quality increases sales volume which actually drive the company to survive for long.

II. LITERATURE REVIEW

The following section develops the conceptual framework for the research in seeking to understand better customer’s needs and expectations to be derived from the following literature review.

2.1 product quality

Product quality is not the only standard, it is the collection of features and attributes of the product that meet the customer satisfaction. Early work in controlling product quality was on creating standard for producing acceptable products. But the mid-1950s, mature method involves for controlling quality, including statistical quality control and statistical quality control and statistical quality control. During 1960s, these method and techniques were extended to the service industry. During 1960 1980, there was a major shift in world markets. Consumers become more conscious of the cost and quality of the products and service.

In a manufacturing and service organization which product they are producing first they have to informed about their product and for reaching to the customer with the product advertisement is the biggest tool. In Bangladesh many companies have turned to promotional tactics to improve their quality image. Such efforts are evident in two trends. The first is the greater emphasis advertisements place on the word quality and on such
themes as reliability, durability, and workmanship. ACI Ltd. for instance, advertises that “quality is job one,” and “quality never goes out of style.” And many ads now claim that products are “the best” or “better than” competitors. Superior quality no longer differentiates competitors; instead, it validates the worthiness of a company to compete (Giffi et al., 1990).

2.2 Customer satisfaction
Customer satisfaction is the term which use all the manufacture and service industry and it is the measure how product and service providing positive experience to the customer. Customer satisfaction is defined as “the number of customers, whose reported positive experience with the company, its product or its service exceed specified satisfaction goal.”
Customer satisfaction is the ultimate indicator of consumer repurchase intention, loyalty and recommendation further to the family and friends. A firm basically improve their business if they try to get continuous feedback from the customers and continuously try to improve customer satisfaction. Following way help customer to improve quality and enhance customer satisfaction. We need to improve a distinctive way to satisfy customer that goes beyond the competitors and quality is not the weapon but it is exercise of the weapon that’s not only satisfy customer but increase the brand awareness.

2.3 Relationship between product quality and customers satisfaction
Product quality is not the accumulation of demanded feature which satisfies customers but it creates positive effect for the company after satisfying customers. Customer satisfaction is a circulation process and end with different other determinant which make the consistency and create the positive image for the company, we will find out the relationship of product quality and customer satisfaction:

In this conceptual framework how, one is related with other. Standard product features first and foremost need to satisfy customer. This quality of service is not only for the product but also the service company and also the price is another important component for the price sensitive customer who actually satisfy when the price is a little bit less than other product. Those 3 components incite the customers to satisfy them which actually makes the customer because they know which company balances all the three things, they will provide the best service and product for the customer in future also. This positive experience aware about the brand or product by...
which they can compete with the other competitor and they will find out what is better than other product. Finally, they will recommend this brand of product to the family and friends. This actually the whole system and in this system, customers are the main player, promoter, and keeper of consistency about the product in the market.

III. METHODOLOGY
This paper is conducted by the questionnaire to the ACI ltd. a manufacturing company and prince kitchen a food industry to find out their product and service quality and for the customer satisfaction we provide the questionnaire the different customer, user, employee, and students. 310 sample was conducted by different area of this paper to find out which factors actually satisfy them. The first part introduction of this research has done by secondary data and the second part of analysis of ACI Ltd. and prince kitchen is done by providing close ended question and depth information by asking individually to the employee, supervisor of the company and by the results findings from the paper.

IV. DATA ANALYSIS AND RESULT
Research sample:
This part will demonstrate the results of the customer satisfaction with the quality of the product. From the questionnaire we will analysis the different factor and which factor will have the good impact of customer satisfaction by percentage, mean, standard deviation and by variance.
This study sample consisted of the customers of the aforementioned companies with the only criterion of choosing respondents based on their familiarity with the products of those companies. The questionnaires were distributed to customers through students of the university, which led to a significant share of young people among respondents. At the same time of the employee, employer of the mentioned company and fully completed questionnaire will be in further processing.
Male (42.2%) and female respondents (47.8%) were represented proportionately. The age group of 18-22-year old (23.3%), and was followed, as expected, by other age groups in ascending order in terms of age, i.e. 23-25-year-old (41.1%) were dominated, 26-30 (27.8%), above (7.8%) which suits the best way of the experience of the products and services. In terms of profession, customers are the most numerous group (45.7%), followed by employees (36.7%) and employer (16.31%) sectors and (1.1%) were in the other sectors. The Educational level of Bachelor dominate the market (34.4%) which are the customers, Master level sample was (33.3%) which also very donating area of using the products and their satisfaction level.
The basic sample consists of 42.2% males and 47.8% females. The age group of 23-25 years old represents 45.6% customers who appropriate to present the research findings as satisfaction of dominant group of samples.

4.1 Results:
This chapter presents the results of the research in customer satisfaction with products and service quality of aforementioned companies and the result what impact created in the loyalty, brand awareness, repurchase intention. With this regard to the tools used and construction of questions used in the questionnaire, we only used results of scale questions.

The variables we observed for ACI Ltd. Company were:
- Product quality – These state to what extent the respondents (customers) were satisfied with the product quality that they had expected of a product;
- Design and function – state to what extent the respondents (customers) were satisfied with the design and function that they had expected from that product;
- Performance – It stated that customers were satisfied to the performance of the product or not what they expected from the product;
- Technical properties – It stated that customers were satisfied with the technical properties, was up to date or not what they expected;
- Economic life – these state to what extent the respondents (customers) were satisfied with the economic life, it was cost effective, that they had expected of a product;
- Safety – These state to what extent the respondent were satisfied with the safety after using the product that they had expected from the product;
Table 1: Characteristics of evaluation of ACI Ltd. variables of customer satisfaction for the company examined as below

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
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</thead>
<tbody>
<tr>
<td>Product quality</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>1.855</td>
<td>.679</td>
<td>74</td>
</tr>
<tr>
<td>Design and function</td>
<td>90</td>
<td>1.00</td>
<td>3.00</td>
<td>1.766</td>
<td>.848</td>
<td>72</td>
</tr>
<tr>
<td>Performance</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>2.444</td>
<td>.859</td>
<td>72</td>
</tr>
<tr>
<td>Technical properties</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>2.333</td>
<td>.710</td>
<td>28</td>
</tr>
<tr>
<td>Economic life time</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>2.133</td>
<td>.703</td>
<td>12</td>
</tr>
<tr>
<td>Safety of the product</td>
<td>90</td>
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<td>1.655</td>
<td>.736</td>
<td>85</td>
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</table>

Valid N (listwise) 90

Source: Own calculation

First, we determined the average values (of the above stated variables) of the responses (evaluations) provided by respondents (customers) for all companies (products). The results are shown in table 1.

This result clearly shows that the results of the stated questions to the customers is around 2. This means that customers are satisfied with the product quality and performance. Standard deviation is close to the mean this shows the satisfaction level for the customer.

At the beginning of the observations we find out the average value (refers by above variables) of the responses through evaluation that comes from the respondents (customers) for Prince Kitchen. The results are presented in table 2.

Table 2: Characteristics of evaluation of Prince kitchen variables of customer satisfaction for the company examined as below:

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy processing of the product</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>1.97</td>
<td>.73405</td>
<td>.539</td>
</tr>
<tr>
<td>Speed of service</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>2.27</td>
<td>1.0170</td>
<td>2</td>
</tr>
<tr>
<td>Hygiene of the product</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>2.18</td>
<td>6.3413</td>
<td>402</td>
</tr>
<tr>
<td>Cost of the product</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>2.12</td>
<td>92199</td>
<td>850</td>
</tr>
<tr>
<td>Customer service</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>1.88</td>
<td>81343</td>
<td>.662</td>
</tr>
</tbody>
</table>

Valid N (listwise) 90

At the beginning of the observations we find out the average value (refers by above variables) of the responses through evaluation that comes from the respondents (customers) for Prince Kitchen. The results are presenting in table 2.

In this result it is clear that the provided answer of respondents for all the given questions to the customers is around 2. This means that customers are satisfied with the proper environment and hygiene.

- Handling of complain – It is stated that are they satisfied with the complaining handling situation?
- Cost of the product: Prince kitchen renounced for their food so cost of product refers to the availability or reasonable value for all kind of respondents (customer).
- Customer service: It is stated that respondents were satisfied by the customer service.
the customer service and product quality (on the scale value 1 represents very satisfied, 2 represents satisfied, 3 neutral and 4 dissatisfied 5 represent very dissatisfied through customer requirement)

Speed of service is over all showing the highest value which is 1.034 of the variables which demonstrating that consumer or respondent is satisfied with all performance of the Prince Kitchen. But in case of hygiene of the product is manifested lowest value. At the same time all the standard deviation is close to mean which is showing satisfaction. Only in case of hygiene the standard deviation is dispersed from the mean.

Table 3: This following characteristic of evaluation is the feedback or impact for both ACI Ltd. and Prince Kitchen:

This evaluation is applicable for both company and what impact is giving ultimately for the company and this impact always positive image:

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define customer satisfaction</td>
<td>90</td>
<td>1.00</td>
<td>4.00</td>
<td>1.488</td>
<td>.92705</td>
<td>.859</td>
</tr>
<tr>
<td>Customer Loyalty</td>
<td>90</td>
<td>1.00</td>
<td>3.00</td>
<td>1.311</td>
<td>.53305</td>
<td>.284</td>
</tr>
<tr>
<td>Intention to repurchase</td>
<td>90</td>
<td>1.00</td>
<td>3.00</td>
<td>1.766</td>
<td>.93676</td>
<td>.878</td>
</tr>
<tr>
<td>Recommendation to purchase</td>
<td>90</td>
<td>1.00</td>
<td>3.00</td>
<td>1.866</td>
<td>.96221</td>
<td>.926</td>
</tr>
<tr>
<td>Quality ensures brand awareness</td>
<td>90</td>
<td>1.00</td>
<td>3.00</td>
<td>1.833</td>
<td>.96279</td>
<td>.927</td>
</tr>
</tbody>
</table>

This is the all feedback that the respondent evaluated, in this study respondent feedback is positive because average result around 1 that represents the positive feedback. So, when they satisfied for the feature of the ACI Ltd. product and Prince kitchen then they were given positive feedback. In this study quality and other factor was satisfied by the respondent so they would recommend to other about their product and service which is 1.866 that shows positive feedback. At the same time their loyalty, satisfaction, and intention to repurchase is positive accordingly .824, .859, .878 and which is representing the highest brand awareness to the customers which is .927.

V. DISCUSSION

This result shows from the study show that, if the quality of a product and service is better than competitors it works as the awareness for the brand which is the best promotion of the product and it is very much connected with the customer satisfaction.

On the other hand, customer loyalty is showing lowest value because this study presents that for the both company they need to improve in some aspect. In case of prince kitchen product should be the more hygiene which is showing lowest satisfaction. In case of ACI the quality of the product should be increased because the safety of using the product has lowest value.

This result shows that some aspect of evaluating customer satisfaction individually have not effect of the overall performance of the company, because there are lot of other aspect of the company that measure the performance of the company. At the same time the individual respondent fills up the survey very unconsciously.

In that sense the degree of customer satisfaction is a border sense that showing the general satisfaction of the product. But we belief that the We believe that these implications correspond to the findings that the most important factors assessing customer satisfaction with the capacity of Satisfaction and Recommendation. In the long run this study can collaborate instant performance (linked to general satisfaction of customers with a product) and future performance (linked to a recommendation to buy a product) unite which create brand awareness.

VI. CONCLUSIONS

As far as the statistical significance of the results is concerned, we cannot regard the connection between customer satisfaction and product quality. How-ever, the results suggest that there definitely is a correlation. We can do further research with more aspect with grater sample and different company that will verify the research.

This paper finds out the correlation among the product quality as the most influential factor that incite the customer to recommend others, increase the intention to repurchase, and increase brand awareness which increase the customer satisfaction. In that ways brand awareness works as the best tool for the company that advertise the product most than any other tools.

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Social Network Credibility and Online Purchase Intention of Undergraduates in Rivers State

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Abstract – The purpose of this study was to determine the relationship between social network credibility and online purchase intention. Social network credibility was assessed via social network trustworthiness, social network authenticity and social network expertise. The study adopted an explanatory research design and was conducted in a natural setting. The population of the study consisted of undergraduates in Rivers State. A sample of three hundred and eighty-four (384) undergraduates participated in the study. The accidental sampling technique was used to arrive at the test units. Primary data for the study was collected using a structured questionnaire developed specifically for the study. The Spearman’s rank order correlation served as the test statistic of the study. The study observed that social network credibility relates with online purchase intention as all the dimensions of social network credibility used in the study posted strong positive and statistically significant correlation with online purchase intention. The study thus concludes that social network credibility informs online purchase intention or that online purchase intention depend on social network authenticity, social network expertise and social network trustworthiness; and recommends that firms, especially online retailers, should improve the level of credibility of their social network platforms by convincing undergraduates (customers) about the authenticity, expertise and trustworthiness the platforms, in order to win the patronage of undergraduates (customers).

Keywords – Online purchase intention, social network authenticity, social network credibility, social network expertise, social network trustworthiness

INTRODUCTION

Business firms permeate virtually every facet of the lives of consumers (Ateke & Nwulu, 2018). Their presence is felt in the economic, social, cultural and religious lives of individuals (Maurya & Mishra, 2012). However, the context within which firms communicate with consumers has changed considerably over the years (Keller, 2009); as trends in information and communication technology progressively change the way people communicate and interact (Ateke & Nwulu, 2018). Many aspects of the personal and social lives of individuals, including everyday decision-making, are increasingly influenced by the internet and internet enabled platforms. The evolution of the internet and the creation of internet enabled social network platforms also provide avenues for marketing activities in the virtual world. This development has precipitated a rapid shift from brick and mortar to click and mortar marketing (Nwokah, 2018).

Social network represents a subdivision of the social media, which in turn is a prodigy of the internet. Social media uses web-based technologies to make interpersonal interaction between spatially dispersed people possible. Prior to the advent of the internet, media was a static platform for sending and receiving information; consisting of newspaper, magazine, radio, and televisions. However, with the advent of the internet and the infusion of internet enabled platforms, media progressed from being just an instrument for sending and receiving messages, to becoming a platform for people to commune through interactions. Social media thus, uses internet enabled platforms to facilitate interaction among individuals; and therefore facilitate social networking. A social network is a structure consisting of people joined by a common interest, and uses social media platforms created through the internet. Facebook, Twitter, Instagram, LinkedIn among others, emerged as a result of the social network system. These online applications enable people to converge virtually to share opinions on common interests. Social networking is based on mutual communication and when properly harnessed, becomes an effective communication tool that can be used to boost marketing activities like e-advertising and ignite online purchase intention. This could be very effective, especially for young consumers like undergraduates.

The undergraduate community encompasses a population of mostly young people. Undergraduates find online activities like social networking and other internet based activities interesting. One of the things that fascinate young people about social networking is “continuous feedback”. Lewis, Pea, and Rosen (2010) posit that continuous feedback is a strong motivation for belonging to a social network. The concept of continuous feedback can also be viewed as continuous dialogue between interactants. Thus, more time is usually spent on social network platforms where continuous dialogue is possible. Marketers leverage social networks for online business activities. They seek to persuade consumers and convert them into buyers of products via social network platforms.
Nevertheless, it may be observed that consumers do not engage in online purchases as much as e-marketers desires; and a number of factors could be responsible for this. Institut de Publique Sondage’ (Ipsos) (2015) observe that consumers are often deterred from making online purchases by lack of awareness, fraud and security concerns, concern about delivery time, etc. However, the perception of consumers about the credibility of social networks from which information about products and firms are sourced was not considered in this observation. Also, Redsicker (2014) suggests that to improve online buying behavior of consumers, it is necessary to understand consumers’ emotional connection with products and act on that connection. However, this suggestion fails to acknowledge that the perception of consumers about the credibility of a message or its source affect their buying behavior. This is especially so among undergraduates. The current study therefore seeks to examine the connection between social network credibility and online purchase intention of netizens in Rivers State, with a focus on the undergraduate community.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Social Network Credibility

A social network is a virtual environment that enables people to meet and interact through the use of dialogue and the application of media tools. Social networking platforms are exciting platforms for sending and receiving information and meeting and interacting with people. The most prominent social network platforms include Facebook, Instagram, Twitter, LinkedIn etc. Interactivity and dialogue are the essence of a social network. Credibility is a term used to imply a positive characteristic of information or its source that affect the receiver’s acceptance of a message (Ohanian, 1990). It is traditionally evaluated based on authenticity, trustworthiness and expertise. Credibility can also be evaluated based on authority, objectivity, quality, currency, relevance, reliability and charisma (Sikdar, Kang, O’Donovan, Höllerer, & Adali, 2013). These evaluation criteria have both subjective and objective components (Hilligoss & Rieh, 2008); thus, the credibility of a piece of information (or social network) depends largely on the particular consumer and the horizons of the consumer’s exposure or experiences. Goldsmith et al (2000) define information credibility as the degree to which “recipients see a piece of information or its source as having the relevant knowledge, skill, or experience and trusts that both the source and the information will be objective.

Social network credibility represents the degree of authenticity, trustworthiness and expertise of a platform for interactivity and dialogue in an online environment, especially as it concerns marketing activities. The credibility of a social network in relation to marketing activities is often a concern to Netizens, and Nadube (2010) suggests that the credibility of social network is gauged by perceived expertise of source of information, the authenticity of that information, personal motives of source of information and the degree to which the source of information and the information itself can be trusted. Irrespective of the level of perceived expertise of source of information, credibility is affected adversely if the level of trust is questionable (Nadube, 2010). Ohanian (1990) posit that credibility is a multi-dimensional construct consisting of authenticity, trustworthiness and expertise, used to imply a positive characteristic of information or its source that affect receivers’ acceptance of the message. The credibility of a social network is thus hinged on the authenticity, trustworthiness and expertise of the social network. Social network authenticity (SNA), social network trustworthiness (SNT) and social network expertise (SNE) are thus adopted as dimensions of social network credibility in this study.

Social network authenticity (SNA)

Authenticity is the quality of being genuine and not corrupt from an original state. Being authentic entails being original and direct, not for the sake of impressing, but for the sake of portraying reality. In other words, SNA is the degree of reality and genuineness a social network platform possesses. Authenticity is essential to the creation of successful social network for businesses. Authenticity provides individuals the assurance to interact with businesses in real time, thereby creating an avenue for conversation and feedback. SNA is relevant to online purchasing behavior. This is because consumers perceive as true, any information or source of information that is reliable. Customers are ordinarily, skeptical about making online purchases due to security and privacy concerns; as a good number of phonies are found in the virtual world of business. They stay away from online purchases for the fear of being defrauded. However, where consumers perceive that a social network platform is authentic, either based on positive word of mouth communication, or personal conviction, they may easily place orders and make purchases on such platform.

SNA is about creating an online voice, that is helpful, and reliable, one that engages the audience. SNA should represent a true picture of what an organization is all about. For a social network to be authentic, it must be original and present factual information in its advertisements, product packaging, and service delivery. This is essential because organizations often over promise in their advertisements, but under deliver when consumers make purchase decision based on eye-catching and highly convincing messages. Social network credibility requires that if the advertisement is outstanding, the packaging should also be outstanding, and likewise the actual service delivery. Every advertisement on social site must thus portray exactly what the package and actual delivery looks like; this is
because customers make purchases based on the perceived authenticity of messages and their sources, and disappointments are not likely to be tolerated. The authenticity of a firm’s social site can contribute to the level of satisfaction customers derive from doing business with the firm, and also inform repeat purchase intentions.

Social Network Trustworthiness (SNT)
Trust has been defined in various ways in the relationship marketing literature. Mankora and Gittespie (2007) in Iruka and Ateke (2014) states that trust describes a situation where a party willingly relies on the actions of another party believing that this other party will always act in the best interest of the first party. Hadijkhani and Thilenius (2005) view it as the willingness to rely on an exchange partner in whom another has confidence. Rotter (1971) view trust as a generalized expectancy held by an individual or group that the word, promise, verbal or written statement of another individual or group could be relied upon. Schurr and Ozanne (1985) emphasize the element of reliability and the intention of parties to fulfill their obligations. From the forgoing, we can deduce that considerable importance is given to the element of confidence in defining trust. Just as partners would be expected to perform actions that would result in positive outcomes, there is an element of confidence that parties would not make unexpected actions that could cause negative outcomes (Sohail, 2012) in Iruka and Ateke (2014).

Trustworthiness on the other hand is the state of being worthy of trust and reliable. Thus SNT may be viewed as the extent to which a social network is authentic and builds the confidence of prospects and customers alike. Keen (1999) view trust as the foundation of e-commerce. Trust is very significant in the online environment, because customers have few palpable and verifiable knowledge regarding e-tailors’ capabilities and intentions. SNT is the perception of confidence in a social network’s reliability, credibility, and integrity. Online purchase decisions are significantly influenced by the trustworthiness of social network platforms. Customers evaluate the trustworthiness of websites before committing to a business transaction. Trustworthiness is one of the most important factors driving online purchase decision. Ateke and Ogbru (2017) observe that trust is an essential factor in purchase decision making for online shoppers in lieu of the risky nature of online transactions, and that trust can have a direct or indirect impact on OPI. This occurs especially when members of a social network have a certain degree of trust in given organization, and there has been a positive exchange of information between the members of such a site and brand.

Social Network Expertise (SNE)
Expertise implies that a source of information is capable of delivering that which is promised (Erdem & Swait, 1998). Marketing and social psychology literature exhibit little agreement on the definition of expertise. Hovland, Janis, and Kelley (1953) in Homer and Kahle (1990) define it as “the extent to which the source of a communication is perceived to be capable of making correct assertions by virtue of having relevant skills”. It is an individual’s “perceived ability to know the correct stand on the issue” (McGuire, 1969). Braunsberger and Munch (1988) define expertise as “having a high degree of skill in or knowledge of a certain subject area, which is obtained through some type of formal training. Expertise derives from a source’s ability to provide information to an audience because of its experience, education, or competence and constitutes denotative qualifications of a person (Tedeschi et al, 1973) in Birnbaum and Stegner (1979). In the view of Birnbaum and Stegner (1979), “source expertise refers to the perceived correlation between a source's report and the outcomes of empirical verification”; and depends on training, experience and ability.

DeBono and Harnish (1988) states that individuals often agree more with expert than with non-expert sources of information irrespective of the quality or strength of arguments presented on issues with limited involvement conditions. When a persuasion situation is not personally involving, individuals in the interest of cognitive economy tend to engage in less systematic processing because of a reduced need to know and understand the content of a message (Chaiken, 1987) in DeBono and Harnish (1988); they instead tend to focus more on the source of the message or information rather than the arguments presented. Source expertise is about the most important dimension of source credibility according to McGuire (1969) in Braunsberger and Munch (1988). Fazio (1979) observe that source “expertise is linked positively to successful influence attempts toward a given audience”

Online Purchase Intention
Purchase intention is the predisposition of customers to patronize a brand in the future or the readiness and willingness of consumers to do business with a brand in the future under certain conditions (Ateke & Didia, 2018). A customer with an “intention to buy” makes purchases without any form of pressure from brands. Purchase intention is thus an important predictor of consumer behavior (Fishbein & Ajzen, 1975) in Ateke and Didia (2018). Consumer purchase decision is a complex process because purchase intention is usually related to behavior, perceptions and attitudes of consumers. Firms are however concerned about purchase intention because it is an effective tool to predict the buying process (Ghosh, 1990), indicates consumers’ preference for a given product in a product category and because of its nexus with profitability. Firms induce purchase intention by responding proactively to customer feedback (Nwulu & Asiegbu, 2015) and by providing value adding services to customers’
experience. Favorable purchase experience reinforces customers’ repurchase intention; and frequent favorable brand experiences induce repurchase intention. Purchase intention is also driven by perceived value (Zeithaml, 1988). Possible to buy, intended to buy and consider buying are the most notable measures of purchase intention (Fishbein & Ajzen, 1975) in Ateke and Didia (2018). Purchase intention may be influenced by internal and external motivators including need, price, perceived quality, perceived value and social influences.

Social Network Credibility and Online Purchase Intention

Consumers are socially inclined. They belong or aspire to belong to various social groups both in the analogue and digital world. Their purchase behavior is thus influenced by the social group(s) they belong or aspire to belong to (Solomon, Bamossy, Askegaard, & Hogg, 2010); as they often engage in joint decision-making. Joint decision-making occur when consumers make decisions within the environment around them such as environment of family, friends, and co-workers (East, Wright, & Vanhuele, 2008). Customers traditionally make purchase decisions based on information they receive through mass media (e.g. advertising, newspaper, television), in recent time however, online social networks exert more influence on the buying behavior of consumers, especially those relating to online purchases (East et al, 2008). Different social network groups possess varying degrees of power to influence online purchase behavior. East et al (2009) identifies primary, secondary, informal, formal, and virtual social network groups as groups that possess the power to influence online purchase behavior. According to these scholars, primary groups are characterized by their size and close relationship between individuals. Secondary groups involve more than one primary group; they involve wider social systems within organizations while informal groups are made up of individuals with common interests or cultures. Formal groups tend to be more organized with rigid structures.

In addition, virtual groups (communities) consisting of social networks and blogs, and reference groups comprising of individuals or groups whose opinions or behavior are important to consumers and have an impact on their purchase behavior are also part of social network groups. The exchange of knowledge, experiences, and opinions within different virtual communities and reference groups enable products to either sell faster or fail. Different social networks provide information for consumers to enable them make the right purchase decisions; and influence online purchase behavior in three ways namely: Informational influence, utilitarian influence and value-expressive influence (Solomon et al, 2010). Various types of online social networks have become a new source of information and consumers rely on them as much as companies (Brown, Broderick, & Lee, 2007). Online word-of-mouth has thus become powerful and valuable, as it impacts purchase decisions of netizens. Companies that participate in online social networks have a greater opportunity to impact on the online purchase behavior of consumers (Brown et al, 2007) based on the fact that these consumers would like to pass the information that they receive about different brands and products.

Solomon et al (2010) emphasize that consumers that search information via online social networks and also share information in such networks are the major force behind online word-of-mouth communication since the bulk of what they source or share relates to products and information about different products, firms or brands. Hence, many choices of consumers are made within different social groups or are influenced by word-of-mouth from other people (East et al, 2008). Social network credibility thus plays significant roles in online purchase behavior. Research shows that members of a social network can assure each other through their information exchange and experience, thus increasing trust and, consequently, willingness to buy (Han & Windsor, 2011). Trust in the transaction and the network influences online purchasers (McCole, Ramsey, & Williams, 2010), and enhances intention to buy (Lu, Zhao & Wang 2010). The level of trust consumers have in a social network determines the level of credibility that network possesses. Therefore, for prospects to become customers and possess the right disposition to purchase online, the social network must be reliable, authentic and trustworthy.

Furthermore, consumer purchase behavior is an issue of immense concern to marketers (Hanzae & Taghipourian, 2012) because firms must make sales to achieve nominated objective. Purchase decisions are usually based on the credibility of information and its source. Consumers gauge credibility using accuracy, objectivity, timeliness and reliability and rely on different cues like source credibility, social prominence and domain knowledge (Sikdar et al, 2013). Marketers must ensure that they present credible information and use credible platforms to convey their messages to consumers. Many avenues exist for consumers to assess the credibility of a piece of information and its source. The extent to which consumers analyze the credibility of a piece of information and its sources determines the ease with which purchase behavior is enacted. In the light of the foregoing, the study hypothesizes as follows: H1: There is a significant connection between social network authenticity and online purchase intention. H2: There is a significant connection between social network trustworthiness and online purchase intention. H3: There is a significant connection between social network expertise and online purchase intention.

METHODOLOGY
The aim of the current study was to determine the nexus between social network credibility and online purchase intention. The study adopted an explanatory research design. An explanatory research design explains phenomena as it is observed without any form of manipulation. The population of study consisted of undergraduates of higher educational institutions in Rivers State. The accidental sampling technique was used to arrive at three hundred and eighty five (385) undergraduates of ten (10) higher educational institutions in Rivers State that participated in the study. Israel (2013) suggests that three hundred and eighty five (385) is an adequate sample for a large population whose proportional variability is unknown. Primary data collection was done via a survey; as the study attempts to measure a broad array of characteristics of the population concerned through the administration of questionnaire to a sample of the population.

RESULTS

<table>
<thead>
<tr>
<th>SNT</th>
<th>SNA</th>
<th>SNE</th>
<th>OPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho Correlation Coefficient</td>
<td>1.000</td>
<td>.859**</td>
<td>.892**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>N</td>
<td>385</td>
<td>385</td>
<td>385</td>
</tr>
<tr>
<td>SNA Correlation Coefficient</td>
<td>.859**</td>
<td>1.000</td>
<td>.850**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.</td>
<td>0.000</td>
</tr>
<tr>
<td>N</td>
<td>385</td>
<td>385</td>
<td>385</td>
</tr>
<tr>
<td>SNE Correlation Coefficient</td>
<td>.892**</td>
<td>.850**</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>385</td>
<td>385</td>
<td>385</td>
</tr>
<tr>
<td>OPI Correlation Coefficient</td>
<td>.702**</td>
<td>.898**</td>
<td>.804**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>385</td>
<td>385</td>
<td>385</td>
</tr>
</tbody>
</table>

**, Correlation is significant at the 0.01 level (2-tailed).

Source: Simulation from SPSS output of data analyses on social network credibility and online purchase intention (2019).

The result on Table 1 above indicates that the rho coefficient of the linear correlation between SNT and OPI is 0.702**. This positive high value means that there is a strong positive rank correlation between SNT and OPI among undergraduates in Rivers State. The positive sign of the correlation coefficient implies that improved SNT will result to an increase in OPI among undergraduates. The p-value of 0.000 which is less than the level of significance α (= 0.01) suggest that the correlation between the variables is statistically significant. The study therefore accepts the alternate hypothesis.

The result on Table 1also indicates that the rho coefficient of the linear correlation between SNA and OPI is 0.898**. This very high value means that there is a very strong rank correlation between SNA and OPI among undergraduates in Rivers State. The positive sign of the correlation coefficient implies that improved SNA will result to increased OPI of undergraduates in Rivers State. The p-value of 0.000 which is less than the level of significance α (= 0.01) indicates a statistically significant connection between SNA and OPI among undergraduates in Rivers State. Hence, the study accepts the alternate hypothesis.

The result on Table 1further indicates a rho coefficient of 0.804** on the linear correlation between SNE and OPI is 0.801**. This very high value means that there is a very strong rank correlation between SNE and OPI among undergraduates in Rivers State. The positive sign of the correlation coefficient implies that improved SNE will result to increased OPI among undergraduates in Rivers State. The p-value of 0.000 which is less than the level of significance α (= 0.01) suggests a statistically significant connection between SNE and OPI among undergraduates in Rivers State. Hence, the study accepts the alternate hypothesis.
perceived SNE will result to increased OPI of undergraduates in Rivers State. The p-value of 0.000 of the link between the variables which is less than the level of significance $\alpha (= 0.01)$ means that the correlation between SNE and OPI among undergraduates in Rivers State is statistically significant. The study thus accepts the alternate hypothesis.

CONCLUSION AND RECOMMENDATIONS

Social network credibility has become essential; as social networks increasingly become important and fundamental tools of marketing in the virtual world. This is as a result of advances in technology and the incursion of the internet and internet-enabled platforms in the personal and social lives of individuals. The intensity of competition among firms to win the patronage of netizens further makes social network credibility in terms of trustworthiness, authenticity and expertise a necessity. Based on the results of the statistical analyses presented in the preceding section, the study concludes that online purchase intention of undergraduates in Rivers State depends on social network credibility or that social network authenticity, social network expertise and social network trustworthiness informs online purchase intention of undergraduates in Rivers State; and recommends that firms, especially online retailers, should endeavor to improve the level of credibility of their social network platforms in order to win the patronage of undergraduates (customers) and that firms should consistently inform and remind undergraduates (customers) of the credibility of their social networks, and also engage in trust-building activities to endear themselves to undergraduates (customers) in order to build customer loyalty.

REFERENCES


Critical Chain Project Management for Medium Voltage Cable Channel

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Paper ID: ICBM-19-1037

Abstract – The project of Medium Voltage Cable Channel 20,000 Volt withdrawal is involved with local government policy, area development, raw material supplier and contribution of various engineering disciplines. The use of Microsoft Project software as a supporting part of every engineering field, is a small part of the project management as a monitoring management from multi engineering disciplines. This research purpose is to reschedule the construction project of Cable MVCC 20,000 Volt withdrawal to reduce delay by implementing Critical Chain Project Management method. Engineering stage identify delay by using Fishbone analysis, Root Cause Analysis and tools 5W-1H. Engineering stage analyze 17 project activities described into 104 activities, continued by identifying Predecessor, Successor and cut the safety time for 50% from activity duration. Critical path approach and determination of Project Buffer by 50% from total by using the approach and determine Feeding Buffer by 50% from non-critical path duration. The result shows the causes of project delay are the delay of materials, permission process, weather factor and lack of method development for MVCC project. The result of construction project planning and scheduling has obtained time duration of 96.75 days, it is less than the beginning of scheduling which is 107 days (9%) and cost savings of 7% from total cost. S_Curve shows significant result differences of time duration completion of early project, project actual duration and project that use Critical Chain Project Management method.

Keywords – Critical Chain Project Management, Feeding Buffer, Project Buffer, Safety Time, Effective and Efficient.

I. INTRODUCTION

Medium Voltage Cable Channel 20,000 Volt withdrawal is quite a complex project involving many parties such as Local Government policy regulation, Public Work cable entrenchment and raw material provision in the warehouse by Perusahaan Listrik Negara (PLN), other suppliers, other electrical engineering human resource, civil engineering and software, that has to collaborate so that the engineering project can be implemented as planned and scheduled [1]. Planning and scheduling is a very important stage in determining the success of construction project. A good planning and scheduling is a guide to implement project effectively and efficiently [2]. If the collaboration of all parties has not been done in accordance of engineering process then there will be a chance of work delay. There for, it is necessary to have project monitoring by performance evaluation and find out when a step of improvement is needed, if there is change and problem towards the plan [2]. A work in electric contractor and civil field are collaborating with national or private companies can be classified in a few project types, such as 1). Medium Voltage Cable Channel withdrawal 2). Civil construction of distribution relay station. 3) Distribution relay station installation, 4) Preventive maintenance of distribution relay station and panel installation. 5). Checking and testing of distribution relay station installation [1]. Based on report data of the Work Order from Local Government, project presentation that encountered delay is higher than on time project, then the Medium Voltage Cable Channel is the highest delay.

Therefore, it is necessary to have a schedule evaluation that can handle the uncertain problems in the project with Critical Chain Project Management approach [1][2][10] is a method and technique of scheduling control that keeps developing recently, it is developed from Theory of Constraints [9]. This method is firstly introduced by Dr. Eliyahu M. Goldratt in 1997 in her book Critical Chain. TOC (theory of constraint) is a technique to control production system that is repeatable based on the principle that every system has obstacles and system performance is only be able to be developed by human resource performance enhancement. Critical chain is a development from TOC design, especially in the project environment [1]. According to Herroelen (2001)[9], there is an approach method that is frequently used in determining buffer size that is simple to determine project buffer and feeder buffer which is Cut and Paste Method (C&PM and also called 50% rules). Cut and Paste Method (C&PM) is an adhesive rule that is used to determine project buffer and feeding buffer, basically in C&PM is to cut 50% from duration of every activity, and for embedding project buffer with half of critical chain duration) in the end of the chain, as in to embed filler buffer with half of activities duration into activity in the non-critical chain path that brings into critical chain. The purpose of this research is to identify and analyze delay that is potential to happen in the project and determine comparison result of company scheduling (S-Curve) with Critical Chain Project management method.

RELATED WORK

In this part will be explained the work that related to MVCC in project management. MVCC construction is a save and reliable construction to distribute medium voltage electric power, but it is more expensive for distributing a same power. This condition is feasible with the per phase construction of conductor isolation and mechanic protector
that is required. In the range cost required, construction by planted directly is the lowest cost compared to the use of conduit or even tunneling [4].


II. METHODOLOGY

Based on Critical Chain scheduling, there are procedures or stages in schedule making such as [1]:
- To make project schedule by cutting Safety Time
- To identify longest path within the activities.
- To count and insert Project Buffer
- To count and insert feeding Buffer into every chain that is within the Critical Chain
- Curva-S is a graphic that shows correlation between project implementation progress towards finishing time, where it is beneficial for controlling progress of the work [5].

Tools or Software used in MVCC. Microsoft Project is a Software which function is to make planning and scheduling of a project in detail.

III. RESULTS

III.1. Identify the cause of delay; MVCC project, unready and delay of material, Local Government and area permission process, trace, lack of supervision, bad weather and lack of method development in MVCC project. Below is the 5W-1H table which is a derivative from Fishbone diagram that will be analyzed completely:

<table>
<thead>
<tr>
<th>Fac tors</th>
<th>Cause of Delay</th>
<th>Identification</th>
<th>What</th>
<th>Why</th>
<th>Where</th>
<th>When</th>
<th>Why</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Unready materials</td>
<td>Follow up PLN in material division</td>
<td>To prevent delay in distribution</td>
<td>PLN Maxis of Work wise</td>
<td>Ongoing project</td>
<td>Project team</td>
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<td></td>
<td>Delay of material distribution</td>
<td>Follow up PLN in material division</td>
<td>To prevent delay in distribution</td>
<td>PLN Maxis of Work wise</td>
<td>Ongoing project</td>
<td>Project team</td>
<td></td>
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<tr>
<td></td>
<td>Local Government permission</td>
<td>Follow up (someone) on files</td>
<td>To make sure permission are issued quickly</td>
<td>PEMD PEMD PEMD</td>
<td>Super visor</td>
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<tr>
<td></td>
<td>Unready activity process</td>
<td>Follow up (someone) on files</td>
<td>To make sure permission are issued quickly</td>
<td>Project location</td>
<td>Ongoing project</td>
<td>Project team</td>
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<tr>
<td></td>
<td>Unready activity process</td>
<td>Follow up (someone) on files</td>
<td>To make sure permission are issued quickly</td>
<td>Project location</td>
<td>Ongoing project</td>
<td>Super visor</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Human resource to be not available and working hours</td>
<td>Limiting field officers working hours</td>
<td>To prevent misconduct</td>
<td>Project location</td>
<td>Ongoing project</td>
<td>Field officer</td>
<td></td>
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<tr>
<td></td>
<td>Lack of supervisory</td>
<td>Conduct inspection</td>
<td>To prevent delay</td>
<td>Project location</td>
<td>Ongoing project</td>
<td>Field super visor</td>
<td></td>
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<tr>
<td></td>
<td>Lack of method development</td>
<td>Develop new method</td>
<td>To prevent delay in project</td>
<td>The owner</td>
<td>Ongoing project</td>
<td>Project Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Method is not implemental</td>
<td>Every project personnel review every aspects</td>
<td>To prevent delay in work</td>
<td>Project location</td>
<td>Ongoing project</td>
<td>Project team</td>
<td></td>
<td></td>
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</tbody>
</table>

From Table 1. it is obtained that delay is cause by uncertain non-engineering constraint in MVCC project

III.2. Planning and Scheduling with MVCC

Based on identification result in MVCC project activities 20,000 volt has been specified from 17 activities into 104 activities and data processing result by using Microsoft Project Software, it is obtained duration and cutting Safety Time duration. The next stage is to identify predecessor and cut Safety Time in the MVCC project activities and there are change in duration after cutting Safety Time in early Schedule and using Critical Chain Project Management method (see Figure 2 and Figure 3)

III.3. Task list Critical Chain and Project Buffer Calculation

After cutting Safety Time for 50% duration, is to identify critical path Microsoft Project software. Critical schedule in project scheduling are Facility Inventory Provision, Facility Workers Provision, Facility Provision, Excavator, Facility Transportation Provision, Facility Logistic Provision, Report Making, Resource & Material Provision, Boring, Work Floor Making, Formwork Making, Casting (Floor & Wall), Report Making, Withdrawal of XLPE Cable (NYM & Heather), Joining Process, Commissioning Test Scheduling, Commissioning Test Implementation, Process, Repairmen and

Project Buffer calculation and insertion in the end of critical chain is to protect activities in critical path that is vulnerable towards project delay. The usually given Buffer is 30-5% percent from Critical Chain path length.

\[ \text{Project Buffer} = \frac{51 \text{ days}}{100} \times 50 = 25.5 \text{ Days.} \]

(Project buffer of MVCC 20,000 volt withdrawal is obtained from 50% from total Critical Chain duration length)

III. 4. Task List Non Critical and Feeding Buffer Calculation

<table>
<thead>
<tr>
<th>Table 3. Buffer obtained calculation</th>
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<tbody>
<tr>
<td>1. Feeding Buffer: 4 Days</td>
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<td>2. Feeding Buffer: 2.25 Days</td>
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<tr>
<td>3. Feeding Buffer: 4.5 Days</td>
</tr>
<tr>
<td>4. Feeding Buffer: 15.25 Days</td>
</tr>
<tr>
<td>5. Feeding Buffer: 16.5 Days</td>
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<tr>
<td>6. Feeding Buffer: 11.5 Days</td>
</tr>
</tbody>
</table>

MVCC project completion with duration of 95.75 days, where there is difference 11.25 working days in time duration of early MVCC project which is 107 working days.

III. 5. Project Scheduling cost saving with Critical Chain Method. Human resources with per day cost:

<table>
<thead>
<tr>
<th>Table 4. Data Resource and Cost Per Day</th>
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<tbody>
<tr>
<td>Total Buffer Time</td>
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<tr>
<td>--------------------</td>
</tr>
<tr>
<td>25.5 days</td>
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Total cost of the workers as in per day with Critical Chain method is counted with this formula:

\[ \text{Savings} = \text{Buffer Time} \times \text{Total Cost} \]

Savings = 25.5 X Rp 1,464,150 = Rp 37,335,825

Precedence Diagram of MVCC Project: comparisons of the beginning and the end of Precedence Diagram that serve to ease the reading of MVCC project floor plan.

Figure 2. Precedence Diagram Start of MVCC Project Scheduling 20,000 volt

![Figure 2](image2.png)

Figure 3. Precedence Diagram End of MVCC Project Scheduling (Critical Chain) 20,000 Volt

In Figure 3 which is the scheduling by the Critical Chain method has ability to shorten work duration from 107 days into 96.75 days.
III.6. Comparisons in MVCC Project Scheduling with Curva-S Tools

Below is the comparison of Curva-S in MVCC scheduling which is the company’s beginning of scheduling (Red Line), Actual Scheduling (Blue Line) and CCPM Method (Yellow Line):

![Comparison in Scheduling MVCC Project with Curva-S Tools](image)

Based on the comparison result of Curva-S scheduling, which is initial project, actual project and the Critical Chain method, there are differences in project completion time duration where the project using Critical Chain method can finish project time earlier.

IV. DISCUSSION

The delayed work is more caused by managerial actions, undirected work method since the beginning, non-engineering activities such as work pattern, unready material, delay of material, change in location of entrenchment and permission process of local government have been the cause of delay. In terms of human resource, problems are encountered from undirected human resource and weak selection process so that it is difficult to increase work performance in field. The lack of supervision in field is also increase delay. There are many work going “as usual” and has not been equalled while the cross-engineering work has become a critical path that is expected to reduce delay by using time buffer. The work that has been the most determining critical path are engineering work such as Facility Inventory Provision, Facility Workers Provision, Facility Provision, Excavator, Facility Transportation Provision, Facility Logistic Provision, Report Making, Resource & Material Provision, Boring, Work Floor Making, Formwork Making, Casting (Floor & Wall), Report Making, Withdrawal of XLPE Cable (NYM & Heather), Jointing Process, Commissioning Test Scheduling, Commissioning Test Implementation, Process, Repairment and Improvement, Administration Report Making, Administration Report Revision (Addition/Deficiency) Administration Documentation, Administration Submission to PLN and Administration Billing.

In the MVCC Project, there are a few categories that can cause delay of a project which are, unready and overdue material, local government and area permission process, trace, lack of supervision, bad weather, and lack development of new method in MVCC project. Critical paths in the project of extending MVCC cable 20.000 Volt are engineering process and delay that are more caused by non-engineering factors. The value of feeding Buffer and Project Buffer in the MVCC project are Feeding Buffer: 117.5 Days, Project Buffer: 26.5 Days. It is obtained with critical chain project management approach, project duration acceleration is 96.75 working days while the previous number was 107 days and can achieve savings up to Rp. 37,335,825. The implementation of critical chain project management into project planning and scheduling in the company, needs supports from human resource involve in the project scheduling by reviewing every aspect from the next critical chain scheduling.

V. CONCLUSION

REFERENCES

A Study on Airport Cargo Operations: A Case Study

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Paper ID: ICBM-19-1041

An operational activity is colossally related to optimize resources to execute organizations plans. This involves Planning, Organizing, Staffing, Directing and Controlling. From the operations point of view, nothing is impossible and everything is a situation. Throughout the operational activity there are many challenges and opportunities. These activities take place in affiliation of various departments and personnel responsible to make decisions. With the help of Supply Chain and Logistics, New opportunities arise frequently. The transportation industry is growing vastly in order to improve quality of life worldwide.

Nowadays one can chose to visit a nearby shop to purchase a product imported from the other part of the earth very easily. If you think close enough, you will find new outcomes coming right out of the window every day. Now comes the part of the operations which puts all the resources into places to acquire its goals and generate profit for stakeholders of internal and external users. We have a variety of transportation industries, one of which is Air Transport. To save time for a time worthy business that needs a valuable product within the shortest time possible.

In Bangladesh local or foreign industries constantly needs resources to produce manufactured goods. This is because of the growth of industries which does international business. A large number of organizations are doing both imports and exports. It’s like buying quality buttons for shirts from Europe to make a finished product to sell back to Europe or any other region.

Dhaka airport operations include a variety of departments working together. These departments are Biman Security, Customs, Biman Foreign Carriers, Freight Forwarders, Bangladesh Association of Freight Forwarding (BFFA), Clearing & Forwarding Agents (C&F) and Airlines. All the departments are interrelated to hold the airport cargo operations. There are a few external departments which work in collaboration with airlines. These departments verify and operate to execute smooth transition of cargo. In Dhaka airport 90% of the export goods are garments. Other cargo are live animals such as crabs, glass products, various parts of machineries, couriers etc. An airport operation is a very time constrained activity. Within a very short period of time airport staffs need to process the goods and build up accordingly. There are a lot of challenges to overcome. An aircraft Airbus A330-300 series has the capacity to transport more than 20 tons of cargo including passengers. A smaller aircraft such as Airbus A310 or A320 – 300 series can transport up to 2500-4500 kg of cargo at a time including passengers on board. The airlines duty officers need to make sure the flight is having the maximum cargo load.

The daily operations of an airlines starts with giving away gate passes. This is the pass required to a cargo transport vehicle to enter the cargo village. All the gate passes are prepared by the freight forwarding agencies and verified by foreign carriers after issuing of the passes by airlines. The freight forwards then take in the cargo into the cargo village and do the needful to arrange the cargo. The C&F agents then prepare the related documents to do the customs and examine paper of the shipments. Airlines cargo agents will check the cargo weights and dimensions and accept the cargo accordingly. After the customs papers are done, Freight Forwarding Agencies and Bangladesh Freight Forwarding Association (BFFA) will scan the cargo and handover the cargo to airlines. These are all backend works done to organize the cargo and buildup the cargo for air transport.

The main part of the airport cargo operations is the execution. Airport operations usually have a less time to process all the planning and buildup. The usual staff members working for airlines are Cargo Operations Head, Station 2IC, Cargo Services Agent (CSA), Cargo Agents (CA), and Handler’s. Usually staff members get 10 hours or so to complete the buildup of all the cargo for an aircraft. CSA’s hand over the cargo loads planning to CA’s, CA’s work together to accept these shipments and prepares dollies and trolleys. While accepting the cargo, it is a must to check whether the weight and dimension matches with the papers. If any discrepancy found, then the freight forwarding agency must amend all the related documents. After all the checks are done, the cargo shipment goes through the scanning panel. Biman BD charges for the scanning of all the shipments except Diplomatic Mail. There are other charges, charged by Biman and airlines itself. After the scanning process, all the shipments are taken to the dollies and trolleys. The Unit Loading Device (ULD) is the holder of the cargo. These ULD’s are set on top of the dollies and trolleys. There are a variety of ULD set for an aircraft such as Airbus 330, 300 series. The ULD’s are:
After the long day of buildup, CA’s give figure of the cargo to CSA’s. Meanwhile the CSA’s follow up with CA’s, sales team and business partners. The CSA then plans for the flight operations. It is the CSA’s duty to plan which cargo to uplift and which to offload. This is usually done by checking the onward connection. The CSA’s send TELEX and emails related to flight loading. One of them is being sent to captain. The captain must be aware of all the shipments in the aircraft. This is a very important task because airlines uplift live animals which need more attention than a garments shipment. The CSA’s send a dead load statement to Centralized Load Control (CLC-Hong Kong). Based on it the CLC creates a trimming of the aircraft and decides which ULD’s should be placed and where. After deciding though collaboration CLC provides a Loading Instruction (LIR). The built-up cargo is being transported to BAY area with security protocol before aircraft landing.

Now comes the airport operations. One duty officer and three CA’s are assigned for the aircraft operations by the airlines. Before the aircraft reaches to BAY area, the airline staff members and Biman makes sure that no ULD or any equipment is placed in the Equipment Restricted Area (ERA). Biman as the GHA provides a duty officer (Supervisor) and cargo handlers. For aircraft operations, there are a few tools which are needed to offload of arrival cargos and loading of the departure cargos. These equipment’s and tools are provided by the Biman GSE. The equipment’s are two High lifters, one belter, one towing tractor, one transporter. With the help of towing tractor one of the airlines CA’s goes for dollies and trolleys to set the arrival cargo. When the aircraft comes to BAY and chocks offloading, the airlines CSA with the help of CA’s commence the loading of the departure cargo. Baggage are set close to door side of the aircraft, specially the business class baggage container. The baggage container amount and number are being communicated between passenger and CSA. The baggage arrive a bit late into the BAY area. Once the cargo loading is done the CSA and CA’s set the baggage containers into the aircraft. After the completion of operations, Biman supervisor calls for push back. The airliners also follow up for smooth operations process. If all goes well, then the aircraft leaves BAY area for departure.

As any other operations, an aircraft operation faces a lot of challenges. As of 2018 DAC station is on 20th position out of 22 in Singapore Airlines. This is mostly because of the station performance. The airliners try their best to maintain a better performance. However, the challenges are such when you have absolutely no choice to avoid. Most frequent challenges are given below.

1. Shortages of equipment due to unavailability of operators.
2. Aircraft hold offloading and loading issues.
3. Aircraft power drive unit does not work properly. Thus, the airliners need to manually incorporate to offload and load cargo.
4. Weather issue such as heavy rainfall, thick fog etc.
5. Equipment lying on ERA and unavailability of towing tractor to move it.
6. Biman supervisor reaches at BAY late.
7. Container or pallet drops down on ground while offloading or loading via transporter.

<table>
<thead>
<tr>
<th>ULD TYPE</th>
<th>CURRENT STOCK</th>
<th>PLANNED</th>
<th>IMBALANCE</th>
</tr>
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<tbody>
<tr>
<td>PMC</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>PAG</td>
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8. Unavailability of equipment operator.
Above mentioned are the typical issues faced by the airlines authority. Every airline faces the same issues. The challenge is how to avoid and run a smooth operation.
In the airport operations, all the hands are needed to run the process. Every department has their own structure of work. Every responsible department is responsible for this task to commence. In 2018 audit report Biman only passed the Security section. There are lot of hygiene issue and other problems. This is major issue for which we are lacking behind. There are sectors which needs attention to be improved. Because of the failure a lot of airlines industries are not operating in our country. There is scope to improve and provide better service to the customers and clients. We can hope that the airport condition improves in time and more airlines shows interest to operate in our country. This will bring more revenue to our country and reputation around the world.
Quality Improvement in Refrigerator Division with Implementation of Six Sigma and Data Mining Method

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Abstract – Case study at manufacturing company that produced electronic goods such as a refrigerator with various types, like 1 door, 2 doors, and freezer. The highest demand by consumer is the 1-door refrigerator. Based on production data in month July 2017, from 69,612 1-door refrigerators produced, there were 5,577 defective refrigerator units, or as many as 8.012%, still far against zero-defect target. The research aims to analyze the problems occurring in the production process, and to propose quality improvement through the six sigma method with DMAIC approach and data mining to minimize the number of defective units. In the Define stage begins with the manufacture of Supplier Diagram, Input, Process, Output, Control (SIPOC). Measure stage which begins by doing observation to know Critical to Quality (CTQ), making Control Charts-U and Pareto Diagram then calculate the Defect per Million Opportunity (DPMO) value and sigma levels. In the Analyze stage, it is create FMEA’s Table to determine the priority of improvement. Improve stage start with Design of Experiment (DOE), and replicate 5 times to find out the optimum setting. Known that optimum settings are temperature 710°C, 5 seconds weld time, and direct vise grip release. Followed by the stages of data mining for creating decision tree based on entropy and gain values that produce the ‘If Then Rule’ function. Based on the decision tree, Graphics User Interface (GUI) model can be made to know the decision of ‘Good’ or ‘No Good’ based on the numbers entered. And at the last stage of Control, it is known that the percentage of R Room Temperature NG defects decreased from 11.99% to 3.303%, and the sigma level increase from 3.9992 to 4.056

Keywords – Quality, Six sigma, DMAIC, Data mining, Classification, Decision tree.

I. INTRODUCTION

PT. S is one of the companies engaged in electronics, by producing several types of products and electronic equipment. The one of the main products manufactured is refrigerator. Refrigerator’s principle is to absorb heat in the refrigerator space, so the temperature is lower than the ambient temperature and can serve to preserve the food included in it, by cooling the food. Broadly speaking, the refrigerator produced by PT. S is divided into three types: the 1-door model refrigerator, the 2-door model refrigerator, and the freezer. Just like any other manufacturing company, PT. S has problems with quality. Every month, there are defects with the number to thousands of units. This defect is certainly a barrier for companies to achieve maximum performance, because the defective products can not be sold to consumers, but must be repaired again. Repairing or reworking certainly takes a lot of time, so much time is lost to do the rework, and in some cases causes the number of requests for the relevant day is not met. Therefore, in order for the company to compete in this industrial era, it is necessary to improve the quality of the refrigerator production process to minimize the number of defective products in order to minimize the rework level.

Based on data of July 2017, the result of refrigerator is 127,137 units. 69,612 of them is a 1-door model refrigerator. This study will be focused on a 1-door refrigerator model, because data show that 1-door refrigerator is the most likely produced type. A total of 5577 units or 8.012% of the 1-door fridge have defect. This is also causes a high enough rework rate to repair the defect. Various and large number of defects will of course cause the company to deficit if no immediate repair. Companies must make improvements to determine the factors causing defect, and make improvements to improve quality and minimize defects with Six sigma and Data Mining methods.

The managers of companies competing in global markets should pay serious attention to strategic definitions, stating that quality is everything that is capable of meeting the needs of customers [1]. Six sigma is a vision of quality improvement toward the target of 3.4 failure in opportunity opportunity (DPMO) for every product transaction (goods and services), zero-defect [2].

Data mining is aimed at extracting the knowledge from a set of data to obtain a human understandable structure including databases and data management, data processing, model and inference considerations, interest size, complexity considerations, post-processing of found structures, visa- tions, and online updating [3]. The decision tree is a simple representation of the classification technique for a finite number of classes, in which the internal node and root node are marked with the name of the attribute, the ribs are labeled possible attribute values and the leaf nodes are marked with different classes [4]. The research about k-means clustering method had been done in bakery company [5]. Fitriana et all. [6] made the business intelligence, marketing data mining model and on line analytical process cube as the result from on line analytical process cube and the data warehouse of transaction in Bakery company.

The research about six sigma have been done before in the form of several journals related to research conducted by the author Fitriana et al. [7] with a case study at
manufacture industry with the DMAIC approach, and the use of data mining are used in the Improve stage, using a decision tree classification type. Hapsari et al. [8] was using DMAIC approach, Design of Experiment (DOE) and data mining using in Improve stage. Proposed improvements are given in the form of making the optimum setting of the machine and installation of the timer in the dyeing bath and improve sigma value. Kabir et al. [9] was using DMAIC approach. Proposed improvements are given by line balancing and 5S implementation methods, and increasing productivity from 240 to 312 by reducing defects. Valles et al. [10] performs in semi-conductor companies that produce inkjet printers and have a disability rate of 50% with DMAIC approach, and DOE with 2 levels and 3 factors. Vanany & Emilasari [11] was using the DMAIC approach, and provide proposed improvements by increasing the number of inspectors.

II. METHODOLOGY

The research methodology in this study started with primary data collection and secondary data. Furthermore, data processing and data analysis to find the solution of the problem being investigated by using the six sigma method. The stages in processing and data analysis in this study based on DMAIC Method (Define, Measure, Analyze, Improve, Control) are as follows:

2. Measure - Checking data with U-Control Charts.
3. Measure - Identifies the dominant defect with Pareto Diagram.
4. Measure - Calculate DPMO and sigma level.
5. Analyze - Analyze the cause of defect with Ishikawa Diagram and Five Why.
6. Analyze - Identifies the most dominant cause of defects by calculating the Risk Priority Number in the FMEA table.
7. Improve - Provide a repair proposal with the method of data mining decision tree.
8. Control – Compare DPMO values between before and after implementation.

III. RESULTS AND DISCUSSION

Define SIPOC Diagram

SIPOC diagram (Supplier, Input, Process, Output, Customer) is one of the most important tools used in Define stage in six sigma. This diagram is used to provide an overview of the flow of the production process of 1-door refrigerator at PT. S.

<table>
<thead>
<tr>
<th>Table 1. SIPOC Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier</td>
</tr>
<tr>
<td>PPIC Department and Production Floor</td>
</tr>
<tr>
<td>PT. Topla Abadi Jaya Vacum</td>
</tr>
<tr>
<td>PT. Kayo Surya Utama CV Tinno Wijaya CV. Adhitama Mandiri Multido</td>
</tr>
<tr>
<td>Dept.</td>
</tr>
<tr>
<td>Vacum Forming</td>
</tr>
</tbody>
</table>

Measure CTQ Identification

CTQ (Critical to Quality) is a measurable characteristic of a standard product / process or performance limits specification that must be met in order to satisfy the customer [12]. This CTQ is determined by product defects in the production process. The 1-door refrigerator has several types of CTQ. Direct observation was conducted for 7 days with total data of 30 data, and the size of each sample was 100. After observation, there were found 21 kinds of defect (Table 2).

<table>
<thead>
<tr>
<th>Table 2. Defect Percenation of 1-Door Refrigerator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numb</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
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<tr>
<td>8</td>
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<td>9</td>
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<tr>
<td>10</td>
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<tr>
<td>11</td>
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<tr>
<td>12</td>
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<tr>
<td>13</td>
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<td>14</td>
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<td>15</td>
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<td>16</td>
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<tr>
<td>17</td>
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<tr>
<td>18</td>
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<tr>
<td>19</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>21</td>
</tr>
<tr>
<td>22</td>
</tr>
</tbody>
</table>
Control chart used for this stage is U-Control Chart. U-Control chart is used to map data of attribute type, with data type if there is one defect in product then counted as one defect product unit. MINITAB plot results for U-Control chart can be seen in Figure 1.

![U Chart of Total Defect](image)

**Figure 1. U-Control Charts**

**Calculation of DPMO and Sigma Value**

Calculation of DPMO value is needed to determine the possibility of a defective product per million opportunities. The DPMO value is equivalent to 3.9992 sigma. The value is certainly far from the target of PT. S which is 6 sigma. Therefore, there is a need for improvement to increase the sigma level.

**Analyze**

**Failure Mode and Effect Analysis (FMEA)**

FMEA is a systematic activity that identifies and evaluates the potential failure rates that exist in the system, product, or process, especially at the root of the product / process. This FMEA table was first created by determining the process, to produce the final result of the RPN value. In the FMEA table below, the largest RPN value is the brazing process with an uncovered end of the pipeline failure, and the cause of the failure of the brazing method is incorrect with the RPN value of 280. Therefore, the improvement proposal will be focused on improving the process.

<table>
<thead>
<tr>
<th>Table 3. Failure Mode and Effect Analysis (FMEA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air suction process</td>
</tr>
<tr>
<td>Suction machine didn’t work properly</td>
</tr>
</tbody>
</table>

**Improve**

**Design of Experiment (DOE)**

Based on the observations, there are 3 main factors that greatly affect the quality of the brazing process, namely torch temperature, brazing duration, and the visel grip release. The experiment was conducted using variable data by 2³ method.

<table>
<thead>
<tr>
<th>Table 4. Factor and Level for DOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
</tr>
<tr>
<td>Torch Temperature</td>
</tr>
<tr>
<td>Brazing Duration</td>
</tr>
<tr>
<td>Vise Grip Release</td>
</tr>
</tbody>
</table>

Furthermore, on each factor and its replication will be done direct observation on the production floor by giving the results of the assessment quantitatively based on the results of the brazing process. Assessment is given on the quality of brazed results. Assessment of brazing results is done by taking samples of 10 on each factor and replication. Then, of the 10 factors will be calculated the proportion of defects. Total experiments conducted were as many as 40 times with each sample as many as 10. The results of the observation process and its replication can be seen in Table 5.

<table>
<thead>
<tr>
<th>Table 5. Data Replication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torch Temperature (A)</td>
</tr>
<tr>
<td>710°C</td>
</tr>
<tr>
<td>Brazing Duration (B)</td>
</tr>
<tr>
<td>5 second</td>
</tr>
<tr>
<td>Release and gripping training</td>
</tr>
<tr>
<td>Vise grips</td>
</tr>
<tr>
<td>Suction machine didn’t work properly</td>
</tr>
<tr>
<td>Double check B for vacuum</td>
</tr>
</tbody>
</table>

After experimental design with factorial 2³, subsequent determination of optimum setting based on data that have
been obtained. This optimum setting is obtained by making optimization plot. Making this plot optimization aims to determine the influence of the main factors on the response of research conducted. Optimization plot is made using MINITAB software, and can be seen in Figure 4 below.

Based on the optimization plot above, it can be seen that the optimum brazing result is obtained when the temperature shows the number of 710° C, the brazing duration for 5 seconds, and the release vise grip waiting.

### Data Mining

The pre-processing stage is done by grouping the data based on the replication and level of each factor, to determine whether the data obtained on observations with 2 levels and replication 5 times, including into good category or not. The classification can be seen in Table 6.

#### Table 6. Classification Data Grouping

<table>
<thead>
<tr>
<th>Defect Proportion</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 0.1</td>
<td>Good</td>
</tr>
<tr>
<td>&gt;0.1</td>
<td>No Good</td>
</tr>
</tbody>
</table>

The next stage is to group the data to determine whether the data obtained on the observations included into either category or not.

### Entropy Gain dan Decision Tree

The concept of entropy and gain is used to derive attributes into a decision tree or decision tree. The whole object to be created to be a decision tree must first be calculated for its entropy and gain values, since entropy and gain are used to determine the initial node to the final node of the decision tree.

The formula for obtaining entropy and gain values is as follows:

Entropy (S) = \( \sum_{i=1}^{c} - p_i \log_2 p_i \) ..............................(2)

Gain (S,A)= Entropy (S) - \( \sum_{\forall \text{values}(A)} \frac{|Sv|}{|S|} \) Entropy (Sv) \( |S| \) (3)

**Result of Decision Tree and If Then Rules**

This decision tree serves to provide significant information about influencing factors. The result of the decision tree of WEKA 3-6 software can be seen in Figure 5.

![Figure 2. Decision Tree from WEKA Software](image-url)

After the decision tree, a If Then Rules Table can be created. The If Then Rules table is a set of causal functions that provide optimum combination information to provide the best welding results. The If Then Rules table can be seen in Table 9.

#### Table 7. If Then Rules Function

<table>
<thead>
<tr>
<th>Number</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>If Torch Temperature ≤ 695 °C Then Brazing Classify as No Good</td>
</tr>
<tr>
<td>2</td>
<td>If Torch Temperature &gt; 695 °C Vise Grip Release ‘Waiting’ Then Brazing Classify as Good</td>
</tr>
<tr>
<td>3</td>
<td>If Torch Temperature &gt;695 °C Brazing Duration ≤ 2 second Then Brazing Classify as No Good</td>
</tr>
<tr>
<td>4</td>
<td>If Torch Temperature &gt;695 °C Vise Grip Release ‘Waiting’ Brazing Duration &gt;2 second Then Brazing Classify as Good</td>
</tr>
</tbody>
</table>

At this stage, a GUI model will be created using MATLAB software. GUI modeling is intended to allow users to directly provide information on the program about the settings on the welding process or brazing.
After the proposed improvement, the next step is to implement the proposed improvement to see if the proposed improvements have a significant effect. The results of the proposed improvement can be seen in Table 10.

Table 10. Observation of Proposed Improvement Results

<table>
<thead>
<tr>
<th>No</th>
<th>Defect</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screw bone</td>
<td>17</td>
<td>5.15%</td>
</tr>
<tr>
<td>2</td>
<td>Flange NG</td>
<td>15</td>
<td>4.5%</td>
</tr>
<tr>
<td>3</td>
<td>Food liner dirty</td>
<td>19</td>
<td>5.7%</td>
</tr>
<tr>
<td>4</td>
<td>Back Top Plate dented</td>
<td>18</td>
<td>5.4%</td>
</tr>
<tr>
<td>5</td>
<td>Cabinet dented</td>
<td>18</td>
<td>5.4%</td>
</tr>
<tr>
<td>6</td>
<td>Food Liner wrinkled</td>
<td>12</td>
<td>3.6%</td>
</tr>
<tr>
<td>7</td>
<td>Food Liner gab</td>
<td>16</td>
<td>4.8%</td>
</tr>
<tr>
<td>8</td>
<td>Bottom plate leaking PU</td>
<td>14</td>
<td>4.2%</td>
</tr>
<tr>
<td>9</td>
<td>Control box knop NG</td>
<td>15</td>
<td>4.5%</td>
</tr>
<tr>
<td>10</td>
<td>Door Inner part incorrect</td>
<td>15</td>
<td>4.5%</td>
</tr>
<tr>
<td>11</td>
<td>Door denter</td>
<td>15</td>
<td>4.5%</td>
</tr>
<tr>
<td>12</td>
<td>Food liner ripped</td>
<td>12</td>
<td>3.6%</td>
</tr>
<tr>
<td>13</td>
<td>Bottom Plate and Back Top</td>
<td>14</td>
<td>4.2%</td>
</tr>
<tr>
<td>14</td>
<td>Evap mask not bolted</td>
<td>12</td>
<td>3.6%</td>
</tr>
<tr>
<td>15</td>
<td>Evap plate not bolted</td>
<td>17</td>
<td>5.1%</td>
</tr>
<tr>
<td>16</td>
<td>Not completed</td>
<td>21</td>
<td>6.3%</td>
</tr>
<tr>
<td>17</td>
<td>Evaporator paint thin/</td>
<td>21</td>
<td>6.3%</td>
</tr>
<tr>
<td>18</td>
<td>Back Top Plate PU Leak</td>
<td>19</td>
<td>5.7%</td>
</tr>
<tr>
<td>19</td>
<td>Withstanding NG</td>
<td>20</td>
<td>6.0%</td>
</tr>
<tr>
<td>20</td>
<td>R Room Temp NG</td>
<td>12</td>
<td>3.6%</td>
</tr>
<tr>
<td>21</td>
<td>Rating Power NG</td>
<td>11</td>
<td>3.3%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>333</td>
<td>100%</td>
</tr>
</tbody>
</table>

Based on the above data, it can be seen that the percentage of defects in R Room Temperature NG shows smaller result than before, that is where it was previously 11.99%, after repair only become 3.303%. The sigma rate also increased by 0.057 sigma.

IV. CONCLUSION

1. The problem with the 1-door refrigerator product is the number of defects that occurred during the production process with the total number of defects of 392 units of 3,000 samples, consisting of 21 types of disabilities.

2. DPMO value before implementation of quality improvement 6222, equivalent to the level of sigma 3.999.

3. The main cause of this type of defect R Room Temperature NG is a refrigerator leak, where the leaking refrigerant is caused by the setting for less optimum brazing process.

4. The optimum setting for each factor is when the temperature is 710°C, brazing duration for 5 seconds, and vise grip release waiting. The quality improvement is given in the form of Standard Operating Procedure (SOP), which contains steps for brazing, using set the fire temperature to above 695°C (710°C recommended), clamping the pipe with vise grip, pre-heating, directing the filler to the end of the pipe, brazing by covering the end of the pipe for at least 3 seconds, wait until the filler is dry, then remove the vise grip.

5. DPMO value after implementation is 5286 with sigma level 4.056, and percentage of defect R Room Temperature NG decreased from 11.99% to 3.303%.

REFERENCES

Electronic Waste Management can be the Biggest Challenge in Bangladesh

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Paper ID: ICBM-19-1053

Abstract – Bangladesh hasn’t yet known to a correct mechanism for the safe disposal of electronic waste. Seven years once the government imposed a written rules to restrict the increasing challenge against electronic waste disposal people are facing and what might cause natural hazards. Now the question arrives what can be included in e-waste. The most common e-wastes suggest televisions, computers, air conditioners, mobile phones, electric bulbs etc. E-waste is being dumped in an increasing ratio day by day in every developed and developing countries. Every year a huge amount of electronic gadgets are launched and the older ones become e-waste and disposed into trashes. This is a major factor to think about as we are so much dependent on technology and these technologies can be extremely harmful for our lives and the world itself. To demolish up this emerging problem from the world a concept arrived which was named as e-waste management. This concept refers the appropriate management system of this wastes. Our concern of the paper is to enlighten people about electronic waste management. For instance, we tried to focus how these waste can be managed and for this reason we tried to collect needed data from different secondary sources and from different authors’ perspectives from their published research papers. Firstly, we talked about the current situation of e-waste management in Bangladesh and tried to concentrate on the reaction of people as well as the ecological and health issue imbalance. Moreover, this paper highlighted if there are any existing laws and regulations against this raised issue. Furthermore, our cornerstone was to know if people in general like educated or uneducated people are aware of this increasing problem or not coupled with if the corporate world are known to this fact. By the same token one of the main concerns was what necessary steps are needed and can be taken to reduce or consummate this threatening trouble.

INTRODUCTION

The IT industry works like an important engine of any country's growth. Manufacturers are now producing superior televisions, new and smarter mobile phones and new computing devices at an increasing rate with the rapid development of technology. People enjoy what technology brings, surfing the Internet on their smartphones or tablets, and watching high-definition films on home TV. As more and more electronic products are being produced to meet people's needs worldwide, these items are being produced using more resources. As a result, the rapid growth of computing and other information and communication equipment drives ever-increasing electronic waste production.

Electronic waste which is commonly used as E-waste is an alarming threat throughout the world. Now question comes what electronic waste is? E waste is the wastage of electronic products after their useful life span such as computers, mobile phones, televisions etc. The emerging challenge is that people do not know or do not focus on where these products should be disposed. In this technological era, people have the tendency to use updated electronic products because of this tendency there is a huge wastage of these products. According to statics it is known that among ten people, nine people do use computers and three people tend to change their personal computers frequently. The most terrified thing is 14% of worlds computers are thrown into trash. Waste electronic and electrical equipment management has become an important sector to focus on. Increasing amount of consumption is one of the reasons of electronic waste disposal. People are becoming more conscious about using gadgets in the high and middle income level society so that they intend to change their gadgets to maintain their status in the society. The old gadgets are thrown in the trash and they are becoming e-waste. This e-waste has becoming toxic for the society and causing serious harms. The concept of e-waste management has emerged to reduce this alarming problem in order to maintain a healthy life for the world’s population. The main target of this concept is to highlight this emerging threat to the people and reduce it as much as possible. The big difficulties of e-waste management is to demolish this terrible threat from the world. One very important concept of e-waste management is how people can recycle or reuse these wastage. This concept targeted to focus on 3R policy which is basically reduce, reuse, recycle.

To ensure this attempt there have been some policies taken which have already become popular in the world. Some famous policies are for instance, EU policy which refers a circular economy in which waste is considered a resource and the recycling society is guided. One more WEEE directive was introduced in 2014 for this purpose. The people who were involved in it, they were supposed to collect 45% of electronic products which have thrown into the trash, by 2016. Those attempts suggest that people now have become conscious about the wastage and in different periods of time different countries have attempted to reduce the e-waste.

From different sort of information it has been known that most of the developed countries are not very able to manage the wastes. There are some reasons they consider some reasons not to recycle electronic wastes, for example, high labor cost, strict laws and regulation etc. instead of recycling they tend to send these products in the developing countries. This type of export is very much harmful for the developing country. Which poor countries
are used to export these sort of wastes, those countries are in danger. The Basel convention later on prohibited any kind of harmful product export in the underdeveloped or developed countries.

LITERATURE REVIEW

There are relatively a number of papers published about e-waste management. Different authors tried to focus on different section of e-waste management. Having different papers, every paper has the same motive or idea is to reduce and reuse the e-waste so that we can have a better society. Many articles published in different journal which clearly showed the similarities of thinking in a same way. Florin - Constatin Mihai and Maria published a book chapter named “E-waste management as a global challenge” which was the introductory chapter of the book. In this paper the authors tried to focus on how the e-waste is producing, how developed countries are denyng to recycle e-wastes, moreover poor countries are becoming victim of the e-waste disposal which can cause natural disasters. The book chapter also portrayed some rules and laws which are already enforced in different period of time in different countries. The paper also showed some transition or evolution process of e-waste management. This book chapter again showed the ways of developed countries adopted to manage e-wastes. Later on the paper put some solution to get rid of this problem. One article published in Dhaka tribune 19th October in 2018 which suggests the current situation of e-waste management in Bangladesh. From the assessment and data analysis the publisher of the article raised some issues regarding this matter. Firstly there is such helpful laws or regulations in Bangladesh to fight against e-waste. Furthermore every year a huge number of gadgets are entering in this country which will be turned into e-waste in the upcoming two or three years. Daniel Mmerek, Baizhan Li, Baldwin and Liu Hong in their research paper which was published as a book chapter titled, “The Generation, Composition, Collection, Treatment and Disposal System, and Impact of E-Waste.” showed the beginning of e-waste and how it is spreading now. They also tried to focus on letting people know about e-waste management. A news published in daily star on February 3 2019, which portrayed the imbalance of managing e-waste in Bangladesh and lack of collection of e-waste is hampering the recycling process of e-waste which commonly known as e-waste management. There are more number of papers, journal, and articles regarding this topic as the e-waste has become very alarming problem nowadays.

Methodology

In the paper the main concern was to portray the knowledge about e-waste and e-waste management. Moreover the harmful effect of e-waste disposal. As well as if people know about e-waste management or not. Furthermore e-waste management in Bangladesh and the current situation of electronic waste disposal in this country. Later on if there are any existing laws and regulations for this issue in the country, were the main focus for writing this paper. To write and elaborate the facts in this paper we tried to collect data from secondary sources such as we took help from different published research papers about this topic, moreover we collected data from different journals and newspapers. For a particular we did a primary process to collect the data, we surveyed 100 people to know how many people are aware about e-waste and e-waste management. For this research paper we visited different dustbins and dumping area to find out how many gadgets are being dumped in Dhaka city. We tried to respect all the author’s’ way of thinking and try to generate their ideas in our paper and write it in our own way.

E-WASTE MANAGEMENT IN BANGLADESH

Current situation

Bangladesh has not yet become so skilled in the safe disposal of electrical waste (e - waste), seven years after regulations were drafted by the government to prevent ever - increasing amounts of hazardous materials being sent to landfill. To address this problem and create mass awareness and learning initiative on e - waste through a project focusing on Dhaka and Chittagong City, ESDo conducted a research survey. Bangladesh produces around 400,000 metric tons of this e - waste annually, as per a latest study by Bangladesh University of Engineering and Technology (BUET). This study was conducted to know about the current situation in Bangladesh of e-waste management but the hurting thing is that there is no such fulfilled management took place to reduce the quantity of waste of electronic products. The study also told that just 3% of this electronic products are sent for any further recycling which is really a tiny amount.

As per daily star news, MD. Abdul Kalam Azad chairman of Azizu recycling and e-waste, said that they are unable to recycle the e-waste because of the lack of e-waste collection. He also requested the owners of the different industries to collect e-waste and send them to their organization. As per export and import data approximately four crore mobile phones are entering in Bangladesh yearly which suggests that within two or three years these four crore mobile phones will become e-waste.

People thinking regarding this issue

One main focus is what people think about e-waste management in Bangladesh. When we raise this question, the first question comes do people know about e-waste and e-waste management? To know this answer we did not searched for any secondary data rather we surveyed within our family members and we collected data from 100 people and it is very sad to know the result is that only 6% people know about e-waste and only 2% people know about there is an initiative taken in the world called e-waste management. It is very sad for Bangladesh that in urban area this much less amount of people do know about e-waste and e-waste management then what is the condition of rural areas. As people have a very less idea about e-waste, it is very difficult to collect and reuse or recycle all the e-wastes which are dumped into trashes. Our cornerstone should be letting people know first about e-
waste and raising the current situation to them. The tendency of using new gadgets is spreading in Bangladesh. We can see there are lots of online websites which regularly take orders of a bulk amount of mobile phones and computers. It suggests that who were using the previous version they now want the newer version which clearly shows the previous version of this gadgets will become e-waste. This is very unfortunate for us that the general people do not have enough knowledge about this threatening matter. This lack of knowledge suggests that how much difficult it would be to reduce e-waste from Bangladesh. As people do not know about the harmful effect of e-waste they dump the e-waste into open landfills, water, burn it into air etc. these practices are very harmful for the maintenance of climate and ecology.

Ecological and health impact in Bangladesh
People of Bangladesh do practice a very inappropriate method of disposing the e-waste which is burning all the wastes in an open place and until they become ashes, they are burnt usually which causes a great pollution for air and increases the carbon dioxide and form this it creates a huge ecological imbalance. Increasing carbon dioxide is responsible for climatic change. Every general people can notice that the weather and climate of Bangladesh are changing day by day which is becoming an open threat for the living beings in this country. Lack of e-waste management and adopting wrong method is a crucial reason for this hazardous situation. Moreover many natural disasters are taken place in the country because of the imbalance in the different spheres of the air. Inorganic chemicals such as lead, zinc, nickel, flame retardants, barium, and chromium are found in computers and even most electronics. With equate in particular, if released into the atmosphere, human blood, kidneys, and central and ancillary nervous systems can be damaged. Also when radioactive waste is disposed of in incinerators, its heavy metals flow into aquifers, affecting both land and sea animals. This can also impact people's health in developing countries where much of the electronic waste is chucked. Because of the pollution of water people are suffering from different diseases. There are many diseases introduced in Bangladesh and doctors are still unable to find the actual reason of this diseases. The cause might be inappropriate disposal of e-waste in inappropriate areas. Every year, over 15% of child workers in Bangladesh died during and after e-waste recycling and over 83% are exposed to toxic substances and become sick and live with long-term disease. Cancer, asthma, breakdown of nerves, hearing problem, visual issue, maternal mortality, baby birth chronic illness are occurring because of the disposal of e-waste. In the past 21 years, Bangladesh has obtained 10,504 metric tons of e - waste pollutants from cell phone sets. Which easily shows the lack of management of e-waste and how much this disposal is affecting the health and ecology. The current situation of e-waste management is not at all positive for us. This is becoming more insecure to live in this country day by day. From this we get to know that not only human beings but also any other living beings are affected by the wrong dump of electronic waste. As a result the whole ecological system is being disturbed and this is causing different types of natural disasters and weather and climatic imbalance. The country is under an extremely hazardous situation which is needed to be balanced as soon as possible unless no living being will be able to live in this country anymore.

Laws and regulations for e-waste management
In 2011 one draft regulation was prepared by the environmental department under the environment conservation of 1995. Which was taken to reduce this problem from the country. Later on it was sent to the ministry. As per an article published in Dhaka Tribune, Bangladesh do not really have such strict laws in managing e-waste. A regulation was drafted by the government but there is no such strict laws and regulation enforced about this particular matter. A news published on February 2019 in Daily star which suggested the government has planned to make a framework to ensure proper management of electronic waste disposal such as mobile phones, computers, ACs etc. as the growth rate of electronic waste in Bangladesh shockingly 20% every year, government has become conscious about the proper management of e-waste. Basel convention suggested the manufacturer and the signatories to ensure that there won't be any haphazard disposal of electronic and electrical waste. If Bangladesh do not have the sufficient capability to manage and recycle the electronic products, no developed countries can export their electronic waste in this country.

Environment and Social Development Organization - ESDO has studied the effects in conjunction with the Swedish Society for Nature Conservation (SSNC) on the present situation assessment and the survey and comparison of existing e - waste management practices at subnational level in Bangladesh. Based on the research they planned for different initiatives which can be taken to control the situation.

An article published in Daily star on February 2019 where Ruhul Alam Al Mahbub Manik, president of Bangladesh mobile phone importers association said there should be a point by a minimum distance everywhere in which people will dispose their electronic products after their life span and it would be easier to collect e-waste for Bangladesh. Director of climate change Mirza Shawkat Ali said to control all the hazards and climatic imbalance they already proposed some rule and regulation and already sent that into the ministry.

From above points we get to know that there is no such existing laws and regulations for the safe disposal of electronic waste in Bangladesh but at the same time people are becoming more aware about this fact and trying to pass some laws under this concern. As some of the initiatives are being taken place, we can hope that there will be enforced laws and regulations regarding this issue very soon.

Action of corporation in e-waste management
As corporate world is a big part of any developing country, Bangladesh is not different from all. E-waste has created several life taking problems so that being a part of the country all the corporations have a responsibility to take this matter into account and maintain the environment properly. Ruhul Alam Al Mahbub Manik, president of Bangladesh mobile phones importer association took an initiative to recycle the electronic wastes and proposed the industries to collect these electronic and electrical wastes from different places.

Azizu recycling and waste company limited is operating from 2006 to reduce, reuse and recycle these electronic wastes. They do have a factory in Narayanganj and they are working for this purpose. One other organization named junk enterprise are involved in collecting several types of electronic wastes from everywhere in the country. From this point of view it is known to us that there might not be big organizations are involved in e-waste management but there are some organizations have already made to manage e-wastes. The challenge for the big organizations to manage all e-wastes is lack of knowledge of true mechanism of e-waste management.

RECOMMENDATIONS

1. Manufacturer can be conscious in using electronic products. They can use many wastes as the raw materials of their manufacturing process. It would be helpful for both the company and the environment.
2. Many more recycling institution can be opened in different areas in Bangladesh. If there are multiple number of recycling organizations in different areas then it would be easier to collect the wastes and recycle them and utilize them.
3. Workers could be trained to maintain the proper e-waste disposal and get to know about what is e-waste management.
4. Different kinds of campaign can be held in different locations all over the country. Focusing on the rural and urban area campaign must be held. From these sort of campaigns general people will be aware of e-waste and e-waste management.
5. Managing e-waste can create an industry which can contribute in the GDP of the country by giving tax.
6. Creating the appropriate mechanism for reducing e-waste and recycling these products which will help the society to raise awareness about e-waste and manage this electronic waste in a good manner.
7. One of most important recommendations would government has to impose some strict rules and regulations against throwing electronic and electrical wastes in any area. There must be some places only where can people dump the products so that they can be further used in recycling and creating something new which can save the environment from this danger.

CONCLUSION

In this paper we tried to convey what is e-waste and how this increasing rate of e-waste is creating natural disasters and different types of hazard in the life of every human being. With the help of the paper we tried to portray the current situation of Bangladesh regarding this particular matter. We discussed about the laws and regulations in Bangladesh about e-waste management and many more things about e-waste management. Our motive of the research on this particular topic is to raise the issue in front of common people and literate people so that this emerging threat can be minimized. The issue is very frightening now in the perspective of Bangladesh because a huge number of electronic products are entering in the country every year which suggests that they would be converted into e-waste within a very short period in time. As we discussed earlier that how inappropriate disposal of e-waste is affecting the environment and the ecology as well as the living beings health. In this situation it has become compulsory to manage e-waste properly. We tried to come up with some recommendation to overcome the problem from Bangladesh.

REFERENCES

Pharmaceutical Sector of Bangladesh: Diversification and Portfolio Performance

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Abstract – Pharmaceuticals industry, the most technologically advanced and successful sector, second largest potential sector in Bangladesh to earn foreign currency. Skilled attitudes, knowledge and innovative ideas from the professionals creates the significant transformation towards the development of this industry. From the multiple regression analysis, there are eight companies out of ten whose net profit is highly depending on three independent variables. Moreover, through Jensen’s Alpha analysis, only three stock out of ten are investable stock because their actual return is higher than expected return. To increase the export sales, companies should utilize some innovative technology so that it can contribute more in foreign exchange earnings. Furthermore, to improve the productivity of the companies, they may concentrate on their cost of production, investment in fixed assets and their sales turnover. To reduce the unsystematic risk, more securities of different companies can include in our portfolio. In our research, only four companies provide the positive result and others did poorly. Thus, investors should check other company’s performance from other industry to create a good portfolio and diversify risk.

Keywords – Pharmaceuticals and Chemicals Sector, DSE-listed, assisting investors, profitability ratios, multiple linear regressions, Jensen’s Alpha.

I. INTRODUCTION

There are several sectors in Dhaka Stock Exchange which are flourishing extensively and undoubtedly the pharmaceutical sector is one of them. According to reference [2], the Government of Bangladesh envisioned 10 thrust sectors which includes pharmaceuticals and chemicals sector in the), new export policy drafted for 2012-2015. Currently, pharmaceutical industry is one of the most technically advanced and successful sectors in Bangladesh. The major reason of the substantial growth is the availability of skills, knowledge and innovative ideas of the people involved in the sector. It had to travel a long way to achieve the prestigious position in domestic and international markets. As per reference [19], the sector has grown tremendously over the last 40 years and has occupied a total market size of $1.6 billion as of 2015 and also an approximate of 98% demand is been solely made by local production. Additionally, this sector is expanding rapidly and some companies have been already certified by different international regulatory authorities like UK-MH RA, Australian- TGA and so forth for quality management and quality products manufacturing. Pharmaceuticals and Chemicals sector constitute a valuable portion of Dhaka Stock Exchange. As the sector consists of some of the prominent companies of the country, many investors may include in their portfolios one or more companies of the sector under consideration.

As a result, it has become imperative to evaluate the financial performances of these companies.

II. SCOPE OF THIS STUDY

The present study aims at assessing the profitability position of Pharmaceutical Sector in Bangladesh. This study could help the companies as well as the investors to analyze the companies’ financial efficiency as well as investors’ investment decisions. It aims to help the management to find out its financial problems at present and the specific areas in the business, which might need some effort for more effective and efficient utilization of its resources. For our study, the ten companies that we have selected includes-

- Renata Limited
- Square Pharmaceuticals Limited
- Reckitt Benckiser Bangladesh Limited
- Pharma Aids Limited
- Kohinoor Chemical Company (Bangladesh) Limited
- Keya Cosmetics Limited
- ACI Limited
- Beximco Pharmaceuticals Limited
- Glaxo SmithKline(GSK) Bangladesh Limited
- The IBN SINA Pharmaceutical Industry Limited

III. OBJECTIVES OF THIS STUDY

The following are the specific objectives of this study-

- To analyze the profitability position of selected Pharmaceutical Companies in Bangladesh.
- To analyze the factors influencing the profitability of selected Pharmaceutical Companies in Bangladesh.
- To ascertain abnormal returns of the stocks of each company in order for investors to make investment decisions.
- To evaluate the various aspects of operations and make practical recommendation for reinforcing the sector’s prosperity

IV. LITERATURE REVIEW

A reasonable amount of studies has been done to evaluate the performance of Pharmaceutical Industry in Bangladesh. A brief resume on the review of the work already done on the related aspects of the subject is as follows-
a) **Gross Profit Ratio:** To assess a company's financial strength and business model by revealing how much money remains from revenues after subtracting cost of goods sold (COGS) using financial metric is called gross profit ratio[3]. By dividing gross profit by revenues, gross profit ratio is calculated and it is also known as gross margin. It is calculated as:

\[
\text{Gross Profit Ratio} = \frac{\text{Revenue} - \text{Cost of Goods Sold}}{\text{Revenue}}
\]

A company is unable to pay for its operating expenses without a suitable gross margin. Generally, a company's gross profit ratio should be stable unless there have been changes to the company's business model. Gross profit ratio changes may result from industry changes in guideline or because of changes in a company's pricing strategy also. Gross profit ratio may increase substantially if a company sells its product at a premium price.[3]

b) **Net Profit Ratio:** Net Profit Ratio, also known as profit margin, is a type of profitability ratio which is calculated as net income or net profit divided by revenue or sales. Net income, in other words, net profit may be ascertained by deducting all of a company's expenses which include Cost of Goods Sold (raw material and labor costs), operating expenses, interest expenses and tax costs, from its total revenue. Since profit margins are expressed as a percentage, a firm measure how much it actually keeps in earnings out of every dollar of sales it generates and makes it possible to compare the profitability of two or more businesses regardless of their differences in size. The method of calculating profit margin when the term is used in this way can be represented with the following formula:

\[
\text{Net Profit Ratio} = \frac{\text{Net Income}}{\text{Net Sales}}
\]

Increased earnings, although are good, is not and not an indicator of a firm’s improving profit margin. Similarly, an increase or decrease in a company’s expenditures does not necessarily indicate that the company’s profit margin is improving or worsening. On an elementary level, a low profit margin can be interpreted as a company’s profitability is not being very secure. If a company with a low profit margin experiences a decline in sales, its profit margin will decline even further, leading to a very low, neutral or even negative profit margin. Low profit margins may also reveal certain things about the industry in which a company operates or even about broader economic conditions. For instance, if a company has a low net profit ratio, it may imply that it has lower sales, that is, a low market share relative to other companies in the industry or that the industry in which the company operates is itself suffering, possibly because of dwindling consumer interest due to increasing popularity and/or availability of alternatives or because of a distressed economy or recession.

Profit margin may also reveal certain things regarding a company’s ability to manage its expenditures. High expenditures relative to revenue, that is, a low net profit ratio may be an indication that a firm is struggling to keep its costs low, for reason such as management problems. This implies that costs need to be checked and under better control.

c) **Operating Profit Ratio:** To measure a company's pricing strategy and operating efficiency, operating profit ratio is used[4].Operating profit ratio is also known as operating margin. It can be gauged by calculating the percentage of a company's revenue that remains after compensating for variable costs of production such as wages, raw materials and so on, as well as operating expenses, such as, payroll, depreciation and so on. The formula for calculating operating margin is following:

\[
\text{Operating Profit Ratio} = \frac{\text{Operating Income}}{\text{Net Sales}}
\]

An investor can be helped by operating profit ratio by taking an even closer look at a company. To analyze a particular project within a company, operating profit ratio can also be used. Operating Profit Ratio may be used to compare multiple projects within a company or investigate a particular project, no matter how big to size of the project is.[4]

d) **Return on Equity:** Return on equity (ROE) is the amount of net income returned as a percentage of shareholders’ equity measures a company's profitability by revealing how much profit it generates with the money shareholders have invested[5].ROE is expressed as a percentage and calculated as-

\[
\text{Return on Equity} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}
\]

Or,

\[
\text{DuPont ROE: } \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Asset}} \times \frac{\text{Total Asset}}{\text{Equity}}
\]

**Earnings Per Share:** Earnings per share (EPS) is the portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of a company's profitability [6]. It can be calculated as-

\[
\text{EPS} = \frac{\text{Net Income} - \text{Dividends on Preferred Stock}}{\text{Average Outstanding Shares}}
\]

e) **Multiple Regressions:** Regression is used to determine how strong the relationship between one dependent variable (usually denoted by Y) and a series of
other changing variables (known as independent variables) is. It is a statistical tool. Linear regression and multiple regressions are the two common types of regression. One independent variable to explain and predict the outcome of Y is called linear regression. On the contrary, when two or more independent variables are used to predict the outcome, it is called multiple regressions[7]. The general formula of each type of regression is-

Multiple Regression: \( Y = a + b_1X_1 + b_2X_2 + B3X_3 + \ldots + BtX_t + u \)

Linear Regression: \( Y = a + bX + u \)

Where,

\( X = \) the variable that we are using to predict Y

\( Y = \) the variable that we are trying to predict

\( u = \) the regression residual.

\( a = \) the intercept

\( b = \) the slope

The separate variables are differentiated by using subscripted numbers in multiple regressions. In order to predict Y, a group of random variables is taken for regression to find a mathematical relationship between them. The price of a product, interest rates, particular industries or sectors impact the price movement of an asset and other specific factors can be determined by regression.

g) Monthly Return: Return is the amount of earning from a security over a particular period of time. It can be a gain or a loss [8]. It can either be a gain or a loss. Monthly returns of the stocks of each financial institution have been calculated by taking an account of closing prices of two months. The monthly return is calculated using-

\[
\text{Return} = \frac{(\text{Closing price of this month} - \text{Closing price of the previous month})}{\text{Closing price of the previous month}}
\]

h) Capital Asset Pricing Model (CAPM): An investor is rewarded for bearing only the systematic risk as it cannot be diversified like unsystematic or firm-related risk. Therefore, the only risk that matters for the investor being compensated by expected returns is the systematic risk measured by \( \beta \). According to reference[9], the Capital Asset Pricing Model (CAPM) shows that since investors need to bear only the systematic risk, the expected return from a security should be related to its systematic risk only. The relationship between a security’s expected return and its systematic risk is given by the security market line (SML):

\[ R_i = R_f + \beta (R_m - R_f) \]

Where,

\( R_i = \) Expected return of a security

\( \beta = \) Beta of the security

\( R_f = \) Risk free rate

\( R_m - R_f = \) Market risk premium

In equilibrium, the price of a security equals its value, and its expected return \( R_e \) equals its equilibrium expected return given by the security market line. If a security’s price is not equal to its value, and therefore, its expected return is not equal to the equilibrium expected return, the security is said to be mispriced[9].

i) Jensen’s Alpha: To measure performance, we need to control the effects of market-wide factors and risk which is done by taking the difference between the return on an investment and the return that should be expected based on the risk and the economic conditions, that is, the expected return calculated by using CAPM[10]. This excess return over the proper return is Jensen’s Alpha or Abnormal Return. Jensen’s Alpha can be depicted as:

\[ J_a = \text{Actual Return} - \text{Expected Return (based on CAPM)} \]

Or,

\[ J_a = R_a - R_f + \beta (R_m - R_f) \]

Where,

\( J_a = \) Jensen’s Alpha or Abnormal Return

\( R_a = \) Actual return on a stock

If Jensen’s Alpha equals to 0, it means that the market it efficient and CAPM is working properly. On the contrary, a positive value for Jensen's alpha indicates that the stock has provided more than adequate return to compensate the risk taken and that the investor has "beat the market". This also means that the stock was undervalued while a negative value indicates the opposite.

j) Beta: According to reference [11], beta is an index of systematic risk, market risk or unavoidable risk. It measures the sensitivity of a stock’s return to changes in returns on the market portfolio. The market is considered to have a Beta of 1. If the beta of a stock is greater than 1, this means the stock’s price is more volatile than the market and vice versa. Stocks with high beta are considered to be riskier compared to the ones with low beta[12]. The formula used for calculating beta is as follows:

\[ \beta_s = \frac{\text{Cov}(r_s, r_m)}{\text{Var}(r_m)} \]

Where, \( r_s \) represents return the on stock and \( r_m \) represents return on the market or benchmark.

V. RESEARCH METHDOLOGY

Secondary data is used for this study. The required data is collected from the reliable 10 pharmaceuticals industries’ respective annual reports of year 2009-2010 to 2013-2014. For this report we have collected our data from secondary sources. All the data have been retrieved from Dhaka Stock Exchange and for the purpose of calculation the closing share price of the ten companies on the last day of each month from 2010-2014 have been used.
a) **Gross Profit Ratio:** Gross profit ratio allows analysts to compare business models with a quantifiable metric. In Excel, the following formula has been used for determining the gross profit ratios:

\[ \text{Gross Profit Ratio} = \frac{\text{Revenue} - \text{Cost of Goods Sold}}{\text{Revenue}} \]

b) **Net Profit Ratio:** Net profit ratio is a useful ratio and can help provide insights regarding a variety of aspects of a company’s financial performance. The following formula has been used for determining the net profit ratio in Excel:

\[ \text{Net Profit Ratio} = \frac{\text{Net Income}}{\text{Net Sales (Revenue)}} \]

c) **Operating Profit Ratio:** Operating profit ratio gives analysts an idea of how much a company makes (before interest and taxes) on each dollar of sales. The formula used in Excel for gauging operating profit ratio is:

\[ \text{Operating Profit Ratio} = \frac{\text{Operating Income}}{\text{Net Sales}} \]

d) **Return on Equity:** Return on equity (ROE) is a ratio that provides investors insights regarding how efficiently a company or more specifically its management team is managing the equity that shareholders have contributed to the company[5]. The formula that we have used to calculate return on equity in Excel is as follows:

\[ \text{Return on Equity} = \frac{\text{Net Income}}{\text{Shareholder's Equity}} \]

e) **Earnings Per Share:** Higher earnings per share is always better than a lower ratio because this means the company is more profitable and has more profits to distribute to its shareholders[13]. We have used the given formula in Excel:

\[ \text{Earnings Per Share} = \frac{\text{Net Income} - \text{Dividends on Preferred Stock}}{\text{Average Outstanding Shares}} \]

f) **Mean, Standard Deviation and Coefficient of Variation:** For a further comprehensive analysis, statistical measures, as such, mean standard deviation and coefficient of variation of gross profit ratio, net profit ratio, operating profit ratio, return on equity and earnings per share of each company have been calculated respectively in Excel by using the following functions and formula:

- **Mean** =AVERAGE(number1, [number2], ...)
- **Standard Deviation** =STDEV(number1, [number2], ...)
- **Coefficient of Variation** = \( \frac{\text{Standard Deviation}}{\text{Mean}} \)

\[ g) \text{ Multiple Regressions:} \] Multiple regressions has been used as a means to measure the influence of independent variables, namely, net interest margin, operating profit ratio and return on equity on the dependent variable net income. The significance of the model is that it will aid the selected financial institutions to identify and assess the activities as well as the alterations and improvements that are to be made to increase the earnings or net income. The alterations or improvements may vary from increasing operational efficiency, effective utilization of resources, optimal decision making and so forth. The model has been executed through the application of Microsoft Excel.

\[ \text{h) Monthly Risk-Free Rate:} \] The annual risk-free rate in Bangladesh is 6.75%[15]. For calculating the monthly risk-free rate in Excel the following formula has been used:

\[ = (1+ \text{annual risk-free rate})^{(1/12)}-1 \]

\[ i) \text{ Beta:} \] Beta is a measure of the volatility, systematic risk, market risk or unavoidable risk of a security or a portfolio in comparison to the market as a whole[14]. In Excel, beta has been calculated by using the slope function:

\[ =\text{SLOPE} (\text{known}_y\text{'s}, \text{known}_x\text{'s}) \]

\[ j) \text{ Jensen's Alpha:} \] The abnormal rate of return on a security or portfolio is excess of what would be predicted by an equilibrium model like the capital asset pricing model (CAPM). For determining the abnormal returns of each stock, the formula used in Excel is:

\[ J_a = R_a - R_f + \beta (R_m - R_f) \]

VI. **FINDINGS AND ANALYSIS**

The annual reports (2010-2014) of the ten companies have been used for the determination of the profitability ratios. Furthermore, a comprehensive analysis has been carried by applying statistical techniques, namely mean, standard deviation, coefficient of variance, multiple regressions and analysis of variance. Meanwhile, the monthly prices collected from Monthly Price Archive of Dhaka Stock Exchange are used for calculating monthly returns and expected returns of the ten companies and market index based on which the beta and abnormal returns or alpha of each companies have been computed. The profitability of
the respective firms can be measured with the help of the given profitability ratios:

- Gross Profit Ratio
- Net Profit Ratio
- Operating Profit Ratio
- Return on Equity
- Earnings Per Share

a) **Gross Profit Ratio:** Table I reveals the gross profit ratio of selected Pharmaceutical Companies in Bangladesh from 2009-2010 to 2013-2014. This gross profit ratio shows a fluctuating trend during this study period. It implies the high cost of goods sold due to unfavorable purchasing policies and lesser sales. Renata Limited has the highest average gross profit ratio of 51.18 percent and Kohinoor Chemical Co. has the lowest average gross profit ratio 17.31 percent. Pharma Aids has the highest co-efficient variance of gross profit ratio of 4.87 percent while IBN SINA has the lowest standard deviation of gross profit ratio which is 0.55 percent and it is found to be stable in gross profit ratio. Pharma Aids has the highest co-efficient variance of gross profit ratio of 16.26 percent. IBN SINA has the lowest co-efficient variance of gross profit ratio of 1.41 percent and it is found that there is a consistency in gross profit ratio than the other Pharmaceutical Companies.

b) **Net Profit Ratio:** Table II reveals the net profit ratio of selected Pharmaceutical Companies in Bangladesh from 2009-2010 to 2013-2014. The net profit ratio shows the fluctuating trend during this study period. Backward, this fluctuation implies the inability to keep operating expenses properly controlled for level of sales achieved. Renata Limited has the highest average operating profit ratio of 26.85 percent and IBN SINA has the lowest co-efficient variance of operating profit ratio of 5.08 percent.

Pharma Aids has the highest standard deviation of operating profit ratio of 6.05 percent. IBN SINA has the lowest standard deviation of operating profit ratio of 0.83 percent and it is found to be stable in operating profit ratio. Glaxo SmithKline(GSK) has the highest standard deviation of operating profit ratio of 34.39 percent. Renata Limited has the highest co-efficient variance of operating profit ratio of 34.39 percent. Renata Limited has the lowest co-efficient variance of operating profit ratio of 4.11 percent and it is found to be stable in operating profit ratio. Glaxo SmithKline(GSK) has the highest co-efficient variance of operating profit ratio of 14.35 percent. Renata Limited has the highest standard deviation of operating profit ratio which is 0.31 percent and it is found to be stable in net profit ratio. ACI Limited has the highest co-efficient variance of net profit ratio of 1.72 percent and it is found that there is a consistency in net profit ratio than the other Pharmaceutical Companies.

c) **Operating Profit Ratio:** Table III reveals the operating profit ratio of selected Pharmaceutical Companies in Bangladesh from 2009-2010 to 2013-2014. The operating profit ratio demonstrates a fluctuating trend during this study period. This fluctuation implies the inability to keep operating expenses properly controlled for level of sales achieved. Renata Limited has the highest average operating profit ratio of 26.85 percent and IBN SINA has the lowest average operating profit ratio of 5.08 percent. Pharma Aids has the highest standard deviation of operating profit ratio of 6.05 percent. IBN SINA has the lowest standard deviation of operating profit ratio of 0.83 percent and it is found to be stable in operating profit ratio. Glaxo SmithKline(GSK) has the highest co-efficient variance of operating profit ratio of 34.39 percent. Renata Limited has the lowest co-efficient variance of operating profit ratio of 4.11 percent and it is found that there is a consistency in operating profit ratio than the other Pharmaceutical Companies.

### Table I

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### Table II

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<td>0.1014</td>
</tr>
<tr>
<td>Pharma Aids Limited</td>
<td>0.1087</td>
<td>0.0470</td>
<td>0.4322</td>
</tr>
<tr>
<td>Kohinoor Chemical Company (Bangladesh) Limited</td>
<td>0.0290</td>
<td>0.0059</td>
<td>0.2017</td>
</tr>
<tr>
<td>Keya Cosmetics Limited</td>
<td>0.1102</td>
<td>0.0242</td>
<td>0.2195</td>
</tr>
<tr>
<td>ACI Limited</td>
<td>0.0082</td>
<td>0.0117</td>
<td>1.3415</td>
</tr>
<tr>
<td>Beximco Pharmaceuticals Limited</td>
<td>0.1474</td>
<td>0.0139</td>
<td>0.0945</td>
</tr>
<tr>
<td>Glaxo SmithKline(GSK) Bangladesh Limited</td>
<td>0.0824</td>
<td>0.0316</td>
<td>0.3838</td>
</tr>
<tr>
<td>The IBN SINA Pharmaceutical Industry Limited</td>
<td>0.0396</td>
<td>0.0052</td>
<td>0.1309</td>
</tr>
</tbody>
</table>

### Table III

<table>
<thead>
<tr>
<th>Name of Companies</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Coefficient of Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renata Limited</td>
<td>0.2685</td>
<td>0.0110</td>
<td>0.0411</td>
</tr>
<tr>
<td>Square Pharmaceuticals Limited</td>
<td>0.2230</td>
<td>0.0237</td>
<td>0.1062</td>
</tr>
<tr>
<td>Reckitt Benckiser Bangladesh Limited</td>
<td>0.1062</td>
<td>0.0331</td>
<td>0.3118</td>
</tr>
<tr>
<td>Pharma Aids Limited</td>
<td>0.1847</td>
<td>0.0605</td>
<td>0.3276</td>
</tr>
<tr>
<td>Kohinoor Chemical Company (Bangladesh) Limited</td>
<td>0.0592</td>
<td>0.0112</td>
<td>0.1896</td>
</tr>
</tbody>
</table>
d) **Return on Equity:** Table IV reveals the return on equity capital ratio of selected Pharmaceutical Companies in Bangladesh from 2010-2014. The return on equity capital ratio shows fluctuating trend during this study period. This fluctuation, according to reference [16], indicates profit earned by the company and those profits which can be made non-available to pay dividends to equity shareholders. Kohinoor Chemical Co. has the highest average return on equity capital ratio of 59.55 percent and ACI Limited has the lowest average return on equity capital ratio of 2.86 percent.

Kohinoor Chemical Company has the highest standard deviation of return on equity capital ratio of 62.50 percent whereas Beximco Pharma has the lowest standard deviation of return on equity capital ratio of .34 percent it is found to be stable in equity capital ratio.

ACI Limited has the highest co-efficient variance of return on equity capital ratio of 225.12 percent. Beximco Pharma has a negative co-efficient variance of return on equity capital ratio of 4.75 percent and it is found that there is a consistency in equity capital ratio than the other Pharmaceutical Companies.

**TABLE IV**

<table>
<thead>
<tr>
<th>Name of Companies</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Coefficient of Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renata Limited</td>
<td>0.2499</td>
<td>0.0304</td>
<td>0.1217</td>
</tr>
<tr>
<td>Square Pharmaceuticals Limited</td>
<td>0.1664</td>
<td>0.0138</td>
<td>0.0827</td>
</tr>
<tr>
<td>Reckitt Benckiser Bangladesh Limited</td>
<td>0.5031</td>
<td>0.2140</td>
<td>0.4253</td>
</tr>
<tr>
<td>Pharma Aids Limited</td>
<td>0.1367</td>
<td>0.0672</td>
<td>0.4914</td>
</tr>
<tr>
<td>Kohinoor Chemical Company (Bangladesh) Limited</td>
<td>0.5955</td>
<td>0.6250</td>
<td>1.0496</td>
</tr>
<tr>
<td>Keya Cosmetics Limited</td>
<td>0.1260</td>
<td>0.0726</td>
<td>0.5763</td>
</tr>
<tr>
<td>ACI Limited</td>
<td>0.0286</td>
<td>0.0643</td>
<td>2.2312</td>
</tr>
<tr>
<td>Beximco Pharmaceuticals Limited</td>
<td>0.0713</td>
<td>0.0834</td>
<td>0.0475</td>
</tr>
<tr>
<td>Glaxo SmithKline(GSK) Bangladesh Limited</td>
<td>0.2623</td>
<td>0.0790</td>
<td>0.3011</td>
</tr>
<tr>
<td>The IBN SINA Pharmaceutical Industry Limited</td>
<td>0.1714</td>
<td>0.0539</td>
<td>0.3144</td>
</tr>
</tbody>
</table>

e) **Earnings Per Share:** Table 6 reveals the earnings per share ratio of selected Pharmaceutical Companies in Bangladesh from 2010 to 2014. The earnings per share ratio show a fluctuating trend during this study period. According to according to reference [16], this fluctuation indicates whether or not the earning power of the company has decreased. Glaxo SmithKline has the highest average earnings per share of 38.34 while Keya Cosmetics Limited has the lowest average earnings per share which is 3.24. Glaxo SmithKline has the highest standard deviation of earnings per share ratio of 19.59 while Beximco Pharma has the lowest standard deviation of earnings per share ratio of 0.19 and it is found to be stable in earnings per share ratio.

ACI Limited Limited has the highest co-efficient of earnings per share ratio of 1.11. Beximco Pharma has the lowest co-efficient variance of earnings per share ratio of 0.05 and it is found that there is a consistency in earnings per share ratio than the other Pharmaceutical Companies.

**TABLE V**

<table>
<thead>
<tr>
<th>Name of Companies</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Coefficient of Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renata Limited</td>
<td>28.5020</td>
<td>7.3079</td>
<td>0.2564</td>
</tr>
<tr>
<td>Square Pharmaceuticals Limited</td>
<td>6.2114</td>
<td>1.5730</td>
<td>0.2532</td>
</tr>
<tr>
<td>Reckitt Benckiser Bangladesh Limited</td>
<td>29.4460</td>
<td>4.5818</td>
<td>0.1556</td>
</tr>
<tr>
<td>Pharma Aids Limited</td>
<td>3.6160</td>
<td>1.9785</td>
<td>0.5471</td>
</tr>
<tr>
<td>Kohinoor Chemical Company (Bangladesh) Limited</td>
<td>9.4960</td>
<td>1.5821</td>
<td>0.1666</td>
</tr>
<tr>
<td>Keya Cosmetics Limited</td>
<td>3.2420</td>
<td>1.6809</td>
<td>0.5185</td>
</tr>
<tr>
<td>ACI Limited</td>
<td>7.6040</td>
<td>8.4259</td>
<td>1.1081</td>
</tr>
<tr>
<td>BEXIMCO</td>
<td>3.9700</td>
<td>0.1875</td>
<td>0.0472</td>
</tr>
<tr>
<td>Glaxo SmithKline(GSK) Bangladesh Limited</td>
<td>38.3400</td>
<td>19.5888</td>
<td>0.5109</td>
</tr>
<tr>
<td>The IBN SINA Pharmaceutical Industry Limited</td>
<td>5.1140</td>
<td>0.7758</td>
<td>0.1517</td>
</tr>
</tbody>
</table>

f) **Multiple Regressions:** Table VI represents the multiple regression analysis of Pharmaceutical companies in Bangladesh and statistical significance of the model. The R2 value states the level or extent of influence that all the three independent variables, that is, gross profit ratio, operating profit ratio and return on equity capital ratio have on the dependent variable net profit ratio.

**TABLE VI**

<table>
<thead>
<tr>
<th>Company Names</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renata Limited</td>
<td>0.9963</td>
<td>0.9927</td>
<td>0.9708</td>
<td>0.0967</td>
</tr>
<tr>
<td>Square Pharmaceuticals Limited</td>
<td>0.7588</td>
<td>0.5738</td>
<td>-0.6968</td>
<td>0.4102</td>
</tr>
<tr>
<td>Reckitt Benckiser Bangladesh Limited</td>
<td>0.9859</td>
<td>0.9720</td>
<td>0.8880</td>
<td>0.2021</td>
</tr>
<tr>
<td>Pharma Aids Limited</td>
<td>0.9981</td>
<td>0.9962</td>
<td>0.9847</td>
<td>0.5810</td>
</tr>
<tr>
<td>Kohinoor Chemical Company (Bangladesh) Limited</td>
<td>0.9905</td>
<td>0.9810</td>
<td>0.9240</td>
<td>0.1614</td>
</tr>
<tr>
<td>Keya Cosmetics Limited</td>
<td>0.9970</td>
<td>0.9940</td>
<td>0.9760</td>
<td>0.8524</td>
</tr>
<tr>
<td>ACI Limited</td>
<td>0.9960</td>
<td>0.9921</td>
<td>0.9685</td>
<td>0.2081</td>
</tr>
<tr>
<td>Beximco Pharmaceuticals Limited</td>
<td>0.9735</td>
<td>0.9477</td>
<td>0.9908</td>
<td>0.6307</td>
</tr>
<tr>
<td>Glaxo SmithKline(GSK) Bangladesh Limited</td>
<td>0.9959</td>
<td>0.9919</td>
<td>0.9675</td>
<td>0.5702</td>
</tr>
<tr>
<td>The IBN SINA Pharmaceutical Industry Limited</td>
<td>0.9984</td>
<td>0.9968</td>
<td>0.9872</td>
<td>0.0586</td>
</tr>
</tbody>
</table>

In Renata Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on
equity capital is found to be 0.9963(R) with R Square 0.9927. It means that all the independent variables have contributed 99.27 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In Square Pharmaceuticals Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.7588(R) with R Square 0.5758. It means that all the independent variables have contributed 57.58 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In Reckitt Benckiser Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.9859(R) with R Square 0.9720. It means that all the independent variables have contributed 97.20 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In Pharma Aids Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.9981(R) with R Square 0.9962. It means that all the independent variables have contributed 99.62 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In Kohinoor Chemical Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.9905(R) with R Square 0.9810. It indicates that all the independent variables have contributed 98.10 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In Keya Cosmetics Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.9970(R) with R Square 0.9940. It means that all the independent variables have contributed 99.40 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In ACI Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.0960(R) with R Square 0.9921. It means that all the independent variables have contributed 99.21 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In BEXIMCO Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.9735(R) with R Square 0.9477. It means that all the independent variables have contributed 94.77 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In Glaxo SmithKline Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.9959(R) with R Square 0.9919. It means that all the independent variables have contributed 99.19 percent on dependent variable of net profit ratio which is significant at 5 percent level.

In IBN SINA Limited, the multiple regressions between net profit ratio and the three independent variables, that is, gross profit ratio, operating profit ratio, and return on equity capital is found to be 0.9984(R) with R Square 0.9968. It means that all the independent variables have contributed 99.68 percent on dependent variable of net profit ratio which is significant at 5 percent level.

g) Actual Return: Actual return is the actual gain or loss that investors earn or incur on their investments. Actual return is what investors actually realize from their investments. From our analysis the calculation of expected return of the ten companies along with DSEX are as follows:

<table>
<thead>
<tr>
<th>Name of the Companies</th>
<th>Actual Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beximco Pharmaceuticals Limited</td>
<td>-0.68%</td>
</tr>
<tr>
<td>Glaxo SmithKline(GSK) Bangladesh Limited</td>
<td>2.19%</td>
</tr>
<tr>
<td>ACI Limited</td>
<td>0.49%</td>
</tr>
<tr>
<td>Renata Limited</td>
<td>0.26%</td>
</tr>
<tr>
<td>Reckitt Benckiser Bangladesh Limited</td>
<td>0.30%</td>
</tr>
<tr>
<td>Pharma Aids Limited</td>
<td>6.90%</td>
</tr>
<tr>
<td>Kohinoor Chemical Company (Bangladesh) Limited</td>
<td>1.81%</td>
</tr>
<tr>
<td>The IBN SINA Pharmaceutical Industry Limited</td>
<td>-0.02%</td>
</tr>
<tr>
<td>Square Pharmaceuticals Limited</td>
<td>0.34%</td>
</tr>
<tr>
<td>Keya Cosmetics Limited</td>
<td>-0.72%</td>
</tr>
<tr>
<td>DSEX</td>
<td>0.60%</td>
</tr>
</tbody>
</table>

f) Monthly Risk free Rate: The monthly risk free rate was 0.55% as of 2016.

h) Beta: Beta of an investment indicates whether the investment is more or less volatile than the market[14]. The beta of each company is as follows-

<table>
<thead>
<tr>
<th>Name of the Companies</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beximco Pharmaceuticals Limited</td>
<td>0.78</td>
</tr>
<tr>
<td>Glaxo SmithKline(GSK) Bangladesh Limited</td>
<td>0.61</td>
</tr>
<tr>
<td>ACI Limited</td>
<td>0.74</td>
</tr>
<tr>
<td>Renata Limited</td>
<td>0.48</td>
</tr>
<tr>
<td>Reckitt Benckiser Bangladesh Limited</td>
<td>0.64</td>
</tr>
<tr>
<td>Pharma Aids Limited</td>
<td>2.03</td>
</tr>
<tr>
<td>Kohinoor Chemical Company (Bangladesh) Limited</td>
<td>0.20</td>
</tr>
<tr>
<td>The IBN SINA Pharmaceutical Industry Limited</td>
<td>0.77</td>
</tr>
<tr>
<td>Square Pharmaceuticals Limited</td>
<td>0.53</td>
</tr>
<tr>
<td>Keya Cosmetics Limited</td>
<td>1.16</td>
</tr>
</tbody>
</table>

i) Jensen’s Alpha: The Jensen's measure is a risk-adjusted performance measure that represents the average
return on a stock over and above that predicted by the capital asset pricing model (CAPM), given the portfolio’s beta and the average market return[18].

<table>
<thead>
<tr>
<th>Name of the Companies</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beximco Pharmaceuticals Limited</td>
<td>-1.26%</td>
</tr>
<tr>
<td>Glaxo SmithKline(GSK) Bangladesh Limited</td>
<td>1.61%</td>
</tr>
<tr>
<td>ACT Limited</td>
<td>-0.09%</td>
</tr>
<tr>
<td>Renata Limited</td>
<td>-0.31%</td>
</tr>
<tr>
<td>Reckitt Benckiser Bangladesh Limited</td>
<td>-0.28%</td>
</tr>
<tr>
<td>Pharma Aids Limited</td>
<td>6.25%</td>
</tr>
<tr>
<td>Kohinoor Chemical Company (Bangladesh) Limited</td>
<td>1.25%</td>
</tr>
<tr>
<td>The IBN SINA Pharmaceutical Industry Limited</td>
<td>-0.60%</td>
</tr>
<tr>
<td>Square Pharmaceuticals Limited</td>
<td>-0.23%</td>
</tr>
<tr>
<td>Keya Cosmetics Limited</td>
<td>-1.32%</td>
</tr>
</tbody>
</table>

VII. SUGGESTION

From our multiple regression analysis, we have found that Renata Limited, Reckitt Benckiser Limited, Pharma Aids Limited, Kohinoor Chemical Limited, Keya Cosmetics Limited, ACI Limited, Glaxo SmithKline Limited and IBN SINA Limited these eight company out of our ten company’s net profit is highly depend on three independent variables that are gross profit ratio, operating profit ratio and return on equity capital ratio as all the independent variables have contributed 94.77 percent on dependent variable. So, if these eight companies’ operation managers can analyze and control gross profit ratio, operating profit ratio and return on equity capital ratio properly they can easily manipulate their net profit. In terms of investors point of view, in our Jensen’s Alpha analysis we have found that Glaxo SmithKline, Pharma Aids, Kohinoor Chemicals, only this three stock out of ten are investable stock because their actual return is higher than expected return, that is, these stocks have positive abnormal returns and so these stocks are underpriced. Therefore, we will recommend investors to invest in Glaxo SmithKline, Pharma Aids, Kohinoor Chemicals stocks. Moreover, investors have to be made more aware about the trends and fluctuations in the current economy and share prices. This is because the more educated the investors are, the more they will be able to actively participate in the stock exchanges of Bangladesh. This will not only help them in receiving reasonable and adequate returns on their investments but also in increasing efficiency of the stock market.

VIII. CONCLUSION

To conclude, it can be said that for this pharmaceutical sector, the effects of diversification hold. The more securities of different company we can include in our portfolio the more we can reduce unsystematic risk. In our research only Glaxo SmithKline, Pharma Aids, Kohinoor Chemicals gives us the positive result and others did poorly. But the thing is others may perform better in the future on the other hand Glaxo SmithKline, Pharma Aids, Kohinoor Chemicals also can perform poorly in the future. So investors should do analysis time to time to see the changes. They also should check other company’s performance from other industry to create a good portfolio and diversify risk.

IV. LIMITATIONS AND FURTHER STUDY

One of the major drawbacks of this study includes limitation of information of the companies being evaluated. The main purpose of this study initially was to assess the selected companies’ financial position based on the most current information (Example: Annual Report 2016), which unfortunately were not available. For instance, the annual reports of Reckitt Benckiser Bangladesh and Kohinoor Chemical were available only up to the year 2014. To be more precise, this study needs to be conducted based on uniform financial information, that is, the relevant data of each of the selected companies should be based on the annual reports of the same year. For this reason, the latest data could not be traced and this study has been conducted based on the period 2010-2014. Another disadvantage was limited access. As this study has not been conducted for or under the supervision of any specific institution it was not possible to obtain the
required data from the primary sources, that is, the selected companies. As a consequence, all data relevant to this study have been derived from secondary source which include the websites of the selected companies, Dhaka Stock Exchange and Lanka Bangla. Moreover, the calculations of this study have been conducted in Microsoft Excel. However, prospective researchers may employ more sophisticated statistical analytical tools such as, MATLAB, SAS and QlikView for a more detailed further study. For further study and more analysis, prospective researchers may utilize other profitability ratios and evaluation methods.

REFERENCE


Impact of Finance and Operations in Quality Management of Bangladesh Food Industry

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Abstract – The research attempts to offer better understanding about how finance and operations management lead toward comparative advantage. It can help improve the quality of food industry in Bangladesh where the food is highly adulterated. The research is done by secondary data. The study tries to combine finance with operations management in the food industry. Another major area of this paper focuses on how quality management provides financial performance advantage. The components of this study are- Factors that influence management provides financial performance advantage. The components of this study are- Factors that influence firm’s performance such as Free Cash Flow, Working Capital Management, Cash conversion Cycle and other components like “Closed-loop” view of operations-finance interfaces, Finance activities in operations area, Food Manufacturing and Value-Adding practices in food supply chain, Structural Equation Modeling(SME), Quality Management, Total Quality Management. The major limitation of the paper is that the research is only conducted by using secondary data. On the other hand, the paper also contains factors such as GDP contribution through the food industry, food processing unit, consumer attitude in food industry, financial- environmental performance etc. This research gives an insightful view on how a firm in the food industry can gain advantage by aligning its finance and operation functions.

Keywords – Finance, Operation Management, Quality Management, Bangladesh Food Industry

1. INTRODUCTION

A firm always needs cash to support its operation. Then, the effective management of cash and finance becomes inevitable. Consequently, it affects the firms’ performance and future growth. However, the performance and growth of a firm depends on many factors, one of which is free cash flow. Michael Jensen (1986) came up with the concepts of free cash flow. Free cash flow is the cash the company earns after deducting all the capital expenditures in order to further utilize it in operation. Cash Conversion Cycle is one of the strategic tools that is used in assessing working capital management efficiency. It is based on an analysis of three partial cycles, that is, the inventory and accounts receivables, which mark the length of a so called operational cycle and current liabilities cycle, forming one synthetic measure of the aforementioned cash conversion cycle (Bieniasz & Golaś, 2011).

On the other hand, Operations Management practices and understands the impact of operational execution. A decent understanding of such relations could support prescription. (Philip & Rau, 2015). OM makes connections between Forecasting, Inventory Management, Revenue Management and Marketing, Transportation, Supply Chain Management, Risk Analysis, and etc. (Choi, Wallace, & Wang) The essential target behind the utilization of huge information in mechanical applications and industrial applications is to accomplish blame free and cost proficient running of the procedure, while understanding the ideal execution levels, particularly concerning quality. And it is also said that Process engineers, rather than working with a physical model of the framework, prefer a model-free approach and utilize advanced techniques to screen, control, and upgrade the execution of the procedure, in view of the huge amount of measurements. The potential to enhance productivity with a resulting competitiveness in a wide range of industrial sectors have efficient capture and analysis by big data. (YIN & OKYAY, 2015).

However, when it comes to connecting finance and operations, the financial performance of a firm and its operation management can be interlinked. Hence, Operations and finance can be termed as “two sides of the same coin”. Thus, operation management sets the foundation of financial performance (Zhao & Huchzermeier, 2015). During an empirical study, some researchers conducted a survey and discovered from the respondents that most of them entirely depended on their own funds in financing the operation of their businesses. (Rogo, Shariff, & Hafeez, 2019). As a result, the linkage of operations and finance comes handy. This relationship of finance and operation can be utilized in any industry. This research paper has focused on only food industry of Bangladesh. Bangladesh has one of the fastest growing economies in the world. The economic development depends highly on a country’s industrial advancement. In Bangladesh, the industry consists of different sectors and food sector is one of them. This sector possess 9% share in the whole industry. Thus, the food sector has contribution in Gross Domestic Product (GDP) of the country. 2% of the national GDP comes from food sector and this sector holds 22% share in the whole manufacturing production. (Ahaduzzaman, Sarkar, Anjum, & Khan, Overview of Major Industries in Bangladesh, 2017).
The food industry is classified as the second sector of manufacturing or industrial sector. The fact that they process agricultural raw materials and through one or two stages turn these into end-products which are then resold on the wholesale and retail markets makes companies in this sector are distinguished. (Leinert, Brand, & Duma, July 2016) In this industry, the major issue is food security. Food security is having multi-dimensional interrelationship with these three elements which are availability, accessibility and utilization. (Begum, Hossain, & D’Haese, 2013). Again, Quality explains to the social performance of a product or a service. The quality of a food matters the most to the buyer and in the point of view of firms, quality has turned into major marketing priority to satisfy the requirements of the customer and make them loyal with the company to take long-term benefits from consumers by nonstop acquiring of their items and get a decent verbal exchange from them. (Khan, Ahmed, & Hussain, 2018) But now-a-days, food industry has become full of low quality food items, adulteration, mixed with expired food items with good foods. In the sample of milk in Bangladesh, Pesticides were found in 9 per cent, tetracycline in 13 per cent, lead in 15 per cent and microbial factors were found in 96 per cent of the samples. (Prothom Alo, 2019). Samples of the raw milk have not fulfilled the legal standard of milk composition. Parameters are used to detect adulteration like presence of Formalin, Starch, Cane Sugar, and coloring agent, and to screen the qualities of the samples on the basis of physical tests (color, flavor, taste, texture and specific gravity), chemical tests [acidity, fat, ash, lactose, protein, TS and SNF]-and microbiological tests (Islam, SARKER, PRABAKUSUMA, RUSSEL, & ISLAM, 2018).

The purpose of this research paper is to understand how financial activities of a firm affect the operation and thus how firms can improve their efficiency in such arenas to carry out a successful business. This paper particularly highlights the food industry of Bangladesh and aims to provide some solutions on how this industry can improve their financial and operational activities to manage profitability yet producing quality products.

II. RESEARCH METHODOLOGY

The research paper is solely based on secondary sources. We have collected data from different international journal articles, local newspapers, books section etc.

III. LITERATURE REVIEW

A firm can use free cash flow in number of ways such as in expansion, maintaining assets, giving dividends etc. However, after deducting all the expenses, the cash paid to shareholders (dividends) reduces the manager’s control over resources. But manager’s control over resources can be improved by firm’s growth (Jenesn, Michael C., 1987). In addition, the cash flow statement of a company discloses its ability to pay creditors. On the other hand, according to Le (2018), “Growth, Liquidity, Cash flow, Leverage and Risk”- all these variables have a significant impact on working capital management and thus firm’s performance. Imeokparia (2015) asserted that working capital is an essential management tool which determines a firm’s ability to operate effectively in order to boost performance in terms of liquidity and efficiency. It takes into account the trade-off between risk and return. The main purpose of managing working capital is controlling current financial resources in a way that the profitability of the firm and the risk associated with it create a balance (Lazaridis & Tryfonidis, 2006). According to Gill & Biger (2013), better corporate governance can improve working capital management. A number of empirical studies concluded that working capital significantly influences the profitability of firms. Findings of Zeidan & Shapir (2017) strongly suggest that working capital management improves free cash flow to equity and profits. Hence, it is considered to be another important factor the firm’s performance and growth relies on.

Moreover, Cash Conversion Cycle is regarded as one of the essential component in making profit. Gill, Biger, & Mathur (2010) confirmed that there is a negative relationship between longer cash conversion cycles with enterprise profitability. There are other empirical studies which advocate the same result. Nobanee, Abdullahif, & Al-Hajjar (2011) investigated the Japanese firms and found the same result. There is also evidence for the U.S. firms which proves that firms that operate with efficient cash conversion cycle(CCC) are more liquid, need less financing and are also more profitable (Howorth & Westhead, 2003). Therefore, managers have to maintain an optimum level of cash conversion cycle in order to create profits.

In Operations Management, Big data analytics plays an important role in improving operational efficiency. It makes terminologies, for example, web analytics, social analytics, network analytics, text analytics, and multimedia analytics. What’s more, data processing plans can be part into three sorts, namely batch processing, real-time stream processing, and interactive processing. Statistics, Machine Learning, Data Mining, Optimization, and etc. are part of big data analytics. In here, Vale addition practice has five steps at the food supply chain- farmer, supplier, processor, distributor, and retailer. (Singh & Shabani) Organizations that embrace a quality management (QM) technique center on accomplishing and supporting high-quality outputs using management practices as inputs and quality performance as outputs. Structural Equation Modeling (SEM) technique leads toward establishing relationship between Quality Management practices, quality performance and financial performance. (Parvadavdini, Vivek, & Devadasan, 2015) Total Quality Management is a holistic management approach focusing on consistent improvement in quality with respect to the large elements of SMEs to create and deliver products or...
services in line with clients' needs. On the other hand, TQM as a management strategy is implied to fulfill client's needs that serve as a combination of different frameworks, forms, successful correspondence, devoted and committed people and an appropriate supporting society. (Rogo, Mohd., & Muhammad, 2017).

If finance and operations management are integrated together, a firm can reap benefits in the long run. Thus, there is the emergence of such concept which integrates operations and finance together. In operation-finance interface, Operation management focuses on matching the supply-demand of material flows whereas corporate finance aims to match supply-demand of monetary flow. Thereby, real investment and revenue management connect these two side matching processes in a “closed-loop” of resources (Zhao & Huchzermeier, 2015). The researchers stated that firms can opt for financial flexibility and operational hedging to maintain a successful operation-finance cycle. Hedging is basically to reduce the volatility of a firm’s present and future cash flow. Hence, operational hedging becomes a tool to lessen cash flow uncertainty. (Treanor, Carter, Rogers, & Simkins, 2019).

On the other hand, according to Gamba & Triantis (2014), financial flexibility is referred to the ability of a firm to access and restructuring its financing at a low cost. Zhao & Huchzermeier (2015) proposed an integrated risk management framework which deals with both financial and operational risk. They suggested that interdependence among financial and operational risk encourage firms to implement integrated risk management. The framework, in turn, leads to operation-finance interface model that specifies four steps to integrate both of these areas: identify operational risk (i.e. supply risk, processing risk and demand risk) and financial risks (e.g. budget constraints, tax deductions, cost of capital etc.), specify integration conditions (e.g. source of uncertainty, timing, organization structure, supply chain structure, risk, cost, capital structure etc.), select operational hedging and financial flexibility and integrated optimization. Thus, this process leads to operation and finance centralization. In other words, zero interaction effect between finance and operations management will lead to a shorter cash conversion cycle. Hedging is basically to reduce the volatility of a firm’s present and future cash flow. Hence, operational hedging becomes a tool to lessen cash flow uncertainty. (Treanor, Carter, Rogers, & Simkins, 2019).

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In Bangladesh, the food processing sector comprises commodities, for instance, frozen food, fruits and vegetables, tea, cereal, dairy, bakery and confectionary, carbonated and non-carbonated beverages and so on. However, most of this processed or manufactured food is made adulterated by altering quality of the food with improper labeling and becomes unsafe for consumption. From procurement to production, the food is highly contaminated and the problem exists at every stage in the food chain. Such condition results into public health hazard. However, the food is adulterated with different elements and chemicals such as fruits, vegetables, fish and milk are highly adulterated with formalin. Even, milk is adulterated with dirty water, sorbitol and detergent as thickening agents; powder milk is mixed with banned pesticides and melamine; cheap non-edible oil is mixed with vegetables oils; packaged and bottled fruit juices and drinks are adulterated with chemicals and harmful ingredients so on and so forth. Textile dyes has also been used as coloring agents in different food items (Rahman, Sultan, Rahman, & A., 2015). International Centre for Diarrheal Disease and Research, Bangladesh (ICDDR, B) estimated 150 food items in the country. They found that more than 50% of the food samples were adulterated; reported by the Institute of Public Health (IPH) (Mohiuddin, 2019). The main reason behind such adulteration is that the businesses attempt to cut down cost to stay ahead in competition in the marketplace. Since profitability is the main concern for the businesses, they try to reduce cost by using cheaper and harmful components instead of authentic ingredients. Again, they tend to use such substitutes because of not getting the authentic ones at affordable price. Moreover, food adulteration may occur when demand is more than supply. Therefore, in the processing, the businesses mix fatal substances in order to avoid higher cost and thus raise production making the fraud go undetected. This is how firms meet the demand of the consumers.

On the other side, a major concern that affects the performance of the food processing & distributing firms is inventory control & supply chain management. Since input and process foods come from different sources, a warehouse can stock input food as inventory. Yet the gradual increase in quantity of food makes it difficult to manage the inventory (Kumar, 2017).

In Bangladesh, lack of food security and quality of food is now a big issue. Fake licenses, poor quality of food, substandard infrastructure and lack of hygienic, food adulteration, food impurity, and incorrect information on food packages, selling products with expired date etc encompass the offences. (Rahman, Rahman, Sultan, & Rashid, 2015). By imposing modern technology in agricultural and industrial sector of food, Bangladesh is trying to increase the growth rate of food production. The food processing industry in Bangladesh is now growing rapidly and opening up new opportunities in terms of investment, technology and export. (Ahaduzzaman, Sarkar, Anjum, & Khan, 2017, p. 6)

IV. CONCLUSION:
Firms always rely on financial activities to support its operation. Without one’s efficiency, the other area will not be efficient in the long run. Hence, for effective financial management, working capital plays one of the most significant roles. Firstly, form the research paper, it can be concluded that firms need to manage their working capital efficiently and effectively through not holding too much tied up in working capital and also maintaining an optimum level of working capital. Secondly, a shorter cash conversion cycle will lead firms to profitability. Firms in the food industry can produce

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better products through inventory and total quality management. Again, by integrating finance and operation areas, firms can gain competitive advantage. Hence, the Bangladesh food industry can adopt such measures to ensure profitability while delivering quality food to the consumers. Finally, the operation and finance integration can offer firms a better approach to do business.

REFERENCE


Factors Influencing the Profitability of Pharmaceutical Companies in Bangladesh

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Abstract – This paper aims to examine the impact of company-specific and macro-level factors in determining the profitability of pharmaceutical companies in Bangladesh. The study takes a random sample of five listed pharmaceutical companies and covers the period 2008–2017. Research method for the study is a panel analysis. Based on the Hausman test, we have applied fixed effects model to estimate the relationship between independent and dependent variables. We have considered return on assets (ROA) as a measure of profitability. Company-specific factors in this study are company size and expense-to-revenue. On the other hand, we have taken GDP growth and rate of inflation as macro-level factors. The study finds statistical significance for all two macro-level variables while company-specific variables slightly miss the significance level. We have found positive correlation between GDP growth and profitability. On the other hand, expense-to-income and rate of inflation have negative relationship with profitability. Company size shows a negative correlation with profitability in our study.

Keywords – Profitability determinants, panel analysis, fixed effects model

I. INTRODUCTION

Profitability is a measure of firms’ performance. Researchers have conducted numerous studies on profitability and its major determinants. This paper focuses on the pharmaceutical industry of Bangladesh that consists of 269 registered companies though the number of companies listed in the stock market is very few. Local producers meet the 98% of domestic demand and export to over 125 countries. The monetary value of exports was about $100 million in fiscal year of 2016–17. The industry is expected to grow at a rate of 15% for the next five years. Square Pharmaceuticals Limited is currently the market leader of the sector [1]. We have taken five randomly selected pharmaceutical companies enlisted in Dhaka Stock Exchange (DSE) and attempted to measure the relationship between profitability and four candidate explanatory variables. Research period for the study covers 2008–2017.

II. LITERATURE REVIEW

A number of studies tried to identify the factors that influence the corporate profitability. Typically, authors take return on assets (ROA) and/or return on equity (ROE) as the measure of profitability for both financial and non-financial companies [2]. In this study, we have taken ROA as a proxy of profitability. These type of studies usually use panel data (data with both time and cross-sectional effects). Popular methods for analyzing such dataset are fixed effects and random effects model. To choose between these two models, authors widely use Hausman test. The test evaluates consistency of the estimators.

A study based on Nigeria found that firm size, leverage and liquidity have significant positive relationship with profitability. In addition, they found a significant positive correlation between GDP growth and profitability while inflation rate has a negative and significant relationship with profitability. On the other hand, the study have not observed any significant effect for interest rate and exchange rate. Authors used ROA as the measure of profitability and applied ex post facto research design [3]. Shilpi Tyagi & D. K. Nauriyal carried out a study on pre and post TRIPS period to identify the determinants of profitability of the Indian drug and pharmaceutical industry. They applied OLS regression model with Newey-West standard errors using inflation adjusted time series data for a period 1990–2014. The analyses observed positive significant influence of export intensity, advertising and marketing intensity and post-product patent regime on profitability and negative significant influence of leverage ratio and operating expenditure to total assets ratio on profitability. The study recommended optimal focus on operating expenditures, advertisement and marketing expenditures and export orientation [4].

Another study examined the corporate profitability influencers, emphasizing on Nigerian Economy. It investigated the relationship of capital structure, firm size, cash liquidity and financial leverage with corporate profitability. They used ROA as a proxy of profitability. Using the OLS regression on 40 randomly selected companies enlisted in Nigerian Stock Exchange, the study found that firm size and financial leverage have positive relationship with corporate profitability while capital structure and cash liquidity have negative relationship with corporate profitability [5].

A study based on SME industry examined the effects of macroeconomic variables on profitability (measured by average annual ROA) in Nairobi county. They evaluated a sample of 100 SMEs and found that interest rates, GDP growth and inflation rates have positive significant relationship with SME profitability. On the other side, they
observed a statistically insignificant relationship between exchange rate and profitability. The analyses estimated strong significant relationship between SME profitability and all the macroeconomic variables [6]. Another study reviewed the factors influencing the corporate performance of Indonesia before and after the 1997 financial crisis. The empirical analyses of the panel data of 238 listed companies in Jakarta Stock Exchange (JSX) in the period 1994 – 2004, employing Ordinary Least Square (OLS) showed a greater influence of macro-factors than firm-specific factors on company performance, presumably due to the 1997 great crisis. Moreover, this study revealed a positive relationship between firm size and profitability [7].

A research based on Indian telecom industry assessed the effect of size, leverage, liquidity, non-debt tax shield, tangibility, growth opportunities and bankruptcy (Altman Z-score) on profitability. It used panel dataset of five national stock exchange enlisted companies, period spanning from 2004 to 2017. Authors considered ROA as a measure of profitability. The analyses revealed that size and growth have positive relationship with profitability and leverage has a negative correlation with profitability. Rest of the variables showed an insignificant effect on profitability [7].

III. METHODOLOGY

A. Data

This study has taken ten-year data (2008–2017) from the five pharmaceutical companies listed in DSE, i.e. Square Pharmaceuticals, BEXIMCO Pharmaceuticals, Renata, ACME Laboratories and Beacon Pharmaceuticals Limited. We have collected company-specific data from the annual reports of the companies and macro-level data from the World Bank Open Data. The study uses unbalanced panel data.

B. The Variables

Dependent Variable

We have taken return on assets (ROA) as the measure of profitability. Studies suggest that ROA is a better estimate of profitability because it does not ignore the financial leverage [10]. ROA is the ratio of net income after tax to total assets over a specific period of time. A ROA of 5% indicates that the company generates $5 of after tax profit by engaging every $100 of assets. Firms always prefer a higher ROA because it implies more efficiency about using the assets of a company.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Formula/Source</th>
<th>Level</th>
<th>Expected Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on Assets (ROA)</td>
<td>Net Income/Total Assets</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Independent Variables

We have observed two company specific and two macro-level variables for the study. Previous studies suggest that these variables play important roles in determining firms’ profitability. The variables are enumerated below.

Company Size

For corporations, authors typically take natural logarithm of total assets as the size of the company [11]. A larger company may get the benefits of economy of scale and decrease the operating cost. Therefore, we expect that a larger firm would generate more profits.

Expense-to-Revenue

We calculate expense-to-revenue by dividing the operating expense by total revenue over a specific period. It indicates the efficiency of generating profit for a company from its operations. A higher operating expense would reduce the operating income and therefore, net income would fall. So, the relationship between expense-to-revenue and profitability should be negative.

GDP Growth

Growth of GDP (real) indicates the economic growth of a country. When an economy grows, it creates more opportunities for corporations to increase their profits. Thus, GDP growth would lead to a higher profit.

Rate of Inflation

Inflation increases the interest rate. When interest rate rises, cost of investment also goes up. Therefore, the firms need to invest at a higher rate, thus the profitability decreases.

C. Summary of Variables
The following table shows the maximum, minimum, average and standard deviation of all the variables taken in the study over the period of ten years.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>19.36%</td>
<td>0.21%</td>
<td>8.51%</td>
<td>5.87%</td>
</tr>
<tr>
<td>Size</td>
<td>10.66</td>
<td>9.50</td>
<td>10.15</td>
<td>0.34</td>
</tr>
<tr>
<td>Expense-to-Revenue</td>
<td>40.58%</td>
<td>16.21%</td>
<td>23.89%</td>
<td>5.46%</td>
</tr>
<tr>
<td>GDP Growth</td>
<td>7.28%</td>
<td>5.05%</td>
<td>6.35%</td>
<td>0.62%</td>
</tr>
<tr>
<td>Rate of Inflation</td>
<td>8.16%</td>
<td>5.67%</td>
<td>6.86%</td>
<td>0.82%</td>
</tr>
</tbody>
</table>

**D. The Hypotheses**

We have formed four hypotheses for the four independent factors. We will accept a hypothesis if the variable is statistically significant and we find the coefficient sign as our expectation. On the other hand, we will partially accept a hypothesis if we observe the variable slightly insignificant but we find the coefficient sign as our expectation. For any other cases, we will reject a hypothesis.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Profitability is positively and significantly correlated to company size</td>
</tr>
<tr>
<td>H2</td>
<td>Profitability is negatively and significantly correlated to expense-to-income ratio</td>
</tr>
<tr>
<td>H3</td>
<td>Profitability is positively and significantly correlated to GDP growth</td>
</tr>
<tr>
<td>H4</td>
<td>Profitability is negatively and significantly correlated to rate of inflation</td>
</tr>
</tbody>
</table>

**E. Model of the Study**

The model of the study attempts to estimate the relationship between the dependent variable and independent variables. The following linear equation indicates the model for our study.

\[ \text{ROA}_t = \beta_0 + \beta_1 (\text{LNSIZE}_{it}) + \beta_2 (\text{EXPREV}_t) + \beta_3 (\text{GDPGRW}_{it}) + \beta_4 (\text{INFRT}_t) + \epsilon_t \]

In the above equation, ROA is the proxy of profitability, \( \beta_1 \) is the constant of the model, \( \beta_k \) (\( k=1,2,3,4 \)) are the coefficients to be estimated, \( \epsilon \) is the error term of the equation and \( t \) is the specific time.

**F. Methods for Data Analysis**

We will apply fixed effects or random effects model to analyze our panel dataset. The study applies Hausman test to choose the appropriate method between fixed and random effects. This study uses EViews® 10 to run the model and specification test. The significance level for the study is 0.05.

**IV. RESULTS AND DISCUSSION**

To choose between the fixed effects and random effects, we have applied the Hausman test.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null</td>
<td>Random effects model is appropriate</td>
</tr>
<tr>
<td>Alternative</td>
<td>Fixed effects model is appropriate</td>
</tr>
</tbody>
</table>

Based on the result, we cannot accept the null hypothesis (p-value less than 5%). The model will be estimated using fixed effects.

In the above output, we have found that intercept, GDP growth and rate of inflation are statistically significant. We have observed slight insignificance for company size and expense-to-revenue in the estimation. Our estimated adjusted R-squared is 0.940304. The following table summarizes the hypothesis acceptance or rejection based on the fixed effects model.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Variable</th>
<th>Significance</th>
<th>Expected Effect</th>
<th>Estimated Effect</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>LNSIZE</td>
<td>Insignificant</td>
<td>Positive</td>
<td>Negative</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2</td>
<td>EXPREV</td>
<td>Insignificant</td>
<td>Negative</td>
<td>Negative</td>
<td>Partially Accepted</td>
</tr>
<tr>
<td>H3</td>
<td>GDPGRW</td>
<td>Significant</td>
<td>Positive</td>
<td>Positive</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4</td>
<td>INFRT</td>
<td>Significant</td>
<td>Negative</td>
<td>Negative</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

In our study, we have found positive correlation between GDP growth and profitability. It is obvious that when a country grows in terms of real GDP, it creates scope to increase the corporate profitability. In addition to that, we have observed negative relationship between rate of inflation and profitability. As inflation lowers the return from investment, profitability falls. Besides, our study measures negative correlation between expense-to-revenue and ROA. Profitability erodes when operating expense increases. Moreover, we have not found any positive relationship between company size and profitability. Some studies suggest that a larger company may face...
V. CONCLUSION

This study tries to measure the relationship between corporate profitability (measured by ROA) and four independent factors. These explanatory factors are company size, expense-to-revenue, GDP growth and rate of inflation. First two are company-specific variables and rest are macro-level variables. The study finds all macro-level variables statistically significant while internal variables slightly miss the level of significance. We estimate a positive relationship between GDP growth and profitability and an inverse correlation between rate of inflation and profitability. In addition, our analyses show a negative relationship between expense-to-revenue and ROA. Finally, this study observes a negative correlation between company size (measured by the logarithm of total assets) and ROA because larger company may experience diseconomies of scale.

REFERENCES


An Effectiveness of the Determinants of Employees’ Job Satisfaction and Job Performance – A Case Study on Health Sector in Ethiopian Context

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Abstract – Employees’ play an important role for effective functioning of organizations, so employee’s job satisfaction and performance is a very essential elements, hence the need arises to study the determinants of the job satisfaction and performance. This study tries to analyze and look for leading determinants of job satisfaction and performance such as pay, promotion, job safety and security, working conditions, job autonomy, relationship with co-workers, relationship with supervisor, and nature of the work. In this study on effects of the determinant on employees’ job satisfaction and job performance (A case study of different Hospitals of Hawassa). In this study the impact of determinants on job satisfaction and performance, overall job satisfaction and performance level of employees, the relationship between factors which influence the job satisfaction and performance, and to suggest areas of improvement on the determinants of the satisfaction and performance. In this study from probability sampling technique stratified random sampling was used and among 134 population 99 respondents were selected, but 94 respondents returned the questionnaire with 95% of response rate. To analyze the data by using SPSS version 19 we use descriptive statistics, tables, Pearson correlation coefficient, regression analysis, and reliability test. The analysis indicate that the health professionals pay system which is attractive to managers as well as for policy makers.

INTRODUCTION

Until recently, human resources have been overlooked during the course of health sector reforms. The Joint Learning Initiative, World Health Organization, and the Global Health Workforce Alliance have been focusing attention on health workers, particularly on the pervasive problems with staffing shortages, poor job conditions, low remuneration, and extensive migration. As the backbone of the health system, health workers usually account for the largest share of public expenditures on health. The presence of high-quality, motivated staff is a key aspect of health system performance, but also one of the most difficult inputs to ensure. Health worker job satisfaction, which can be defined as the attitude towards one’s work and the related emotions, beliefs, and behavior, results from complex interactions between on-the-job experience, organizational environment, and motivation. Job satisfaction is inextricably linked to motivation, and both involve cognitive, affective, and behavioural processes, with worker motivation commonly understood as the reason why workers behave as they do towards achieving personal and organizational goals. Neither job satisfaction nor motivation is directly observable, but both have been identified as critical to the retention and performance of health workers. Some authors contend that the main determinant of health sector performance is health worker motivation, and while resource availability and worker competence are necessary, they are not sufficient. In addition to technical training, health workers must work in environments with incentives in place that reward high-quality performance. To this end, an understanding of employee motivation is necessary to design systems with the right incentives. According to EJHS (2011) Human power is the backbone for the provision of quality health care for the population. As EJHS noted High level of professional satisfaction among health workers earns high dividends such as higher worker force retention and patients satisfaction. The shortage of health care employees in hospitals, particularly in health professionals, as well as forecasted increases in required healthcare services have attracted increasing attention in hopes of discovering important and necessary strategies for improving job satisfaction and developing ways to retain current personnel. Job satisfaction is an essential measurement for managers as well as for policy makers. Developing a high level of commitment among health professionals is one of the main human resource department policies. Shared values, including vocational commitment towards patient care and improved medical services are factors that influence health professionals positively. Other important factors include strong leadership, teamwork and support. Health professionals’
knowledge that training and development factors are important aspects in mounting health care delivery system and quality of health services. As noted above, there is currently shortage of health care employees in hospitals. Focusing on the job satisfaction issues of these employees can be a constructive strategy to increase retention of current personnel, as well as to attract qualified professionals.

AN EMPIRICAL REVIEW ON HEALTH CARE SECTOR EMPLOYEES

Determinants of Job Satisfaction and their impact on various factors like Job Satisfaction and Employees Performance

Impact of rewards/pay on job satisfaction and performance

Job satisfaction is an outcome of different factors like pay, promotion, the work itself, supervision, relationships with co-workers and opportunities for promotions (Opkara, 2002). Before discussion of factors it is important to know the definition. Out of these factors, pay is a very important factor. Frye (2004) found that there is positive relationship between equity based compensation and performance. It was further concluded that compensation plays vital role in human capital intensive firms to attract and retain expert workforce. Furthermore, the compensation has significant impact on the level of job satisfaction of employees. It was also found that flexible compensation has no effect on the level of job satisfaction (Galen’s and Russell, 1999). The study regarding the job satisfaction level of public sector managers was conducted and it was concluded that the income is the major determinants of job satisfaction (Sequoya, 2000). The investigation about relationship among job satisfaction and pay was conducted and it was also found that job satisfaction is affected by the pay (Nguyen et al).

Impact of promotion on job satisfaction and employee performance

The researcher in their results found the influence of different determinants of job satisfaction. Several studies focus on the demographic factors while others link the job satisfaction with reference to working environment. The other factors such as fair promotion system, job autonomy, leadership behavior, social relations are also the dominant in determining the level of job satisfaction (Dawson, 1987). (Nguyen et al., 2003) concluded that job satisfaction is the result of promotion opportunities in the organization. Teeseema and Sorters (2006) concluded that there is positive relationship between promotion practices and perceived performance of employee. If organizations want to accelerate performance of employees in the organization, fair promotional opportunities should be given to employees (Park et al., 2003).

Impact of job safety and security on job satisfaction and performance

Various researcher conducted studies and found that job dissatisfaction is the outcome of insecurity among employees (Ashford et al., 1989; Davy et al., 1991). Important factors like low job security, working conditions and the nature of work, low wages and lack of promotion, low job autonomy have adverse effect on the level of job satisfaction of employees (Guest, 2004; Sill et al., 2005).

Impact of working conditions on job satisfaction and performance

The researcher found that work environment is an important determinant of job satisfaction of employees (Herzberg, 1968; Spectre, 2008). The work environment, in the new research, was found to be better determinant of job satisfactions by the scholars (Reiner and Zhao, 1999; Carlen, 2007; Ellickson and Logsdon, 2001; Forsyth and Copes, 1994).

Impact of autonomy on job satisfaction and performance

In politics, bioethical and moral attitude, the concept of autonomy, has its ancestry. It relates to the capacity of rational individual to take decision independently. The underpinning of the autonomy is to fortitude an individual’s actions in the context of moral responsibility. Self-governing of the people is referred to autonomy (Smith, 1993).

Impact of relationship with co-workers on job satisfaction and performance

The scholars previous found that environmental factors are important determinant of job satisfaction. The level of salary, promotion, appraisal system, climate management, and relation with co-workers are the vital factors. (Lambert et al., 200). James (1996) concluded that the working as a team has significant impact on the satisfaction level of employees as it affects their performance. It is essential to recognize to the significance of these factors to boost the satisfaction level in the workforce. The researchers found the factors like pay, promotion and satisfaction with co-workers that influence the employee feeling towards job satisfaction (Schermehorn et al., 2005).

Impact of relationship with supervisors on job satisfaction and performance

Brunette and Farr-Wharton (2002) concluded that supervision of the immediate manager increases the level of job satisfaction in the public sector employees. The productivity and performance of subordinates can be improved with managerial actions and supervision. The recognition of the achievements by the supervisors leads toward job satisfaction and is useful to solve the problems (Yen and McKinney, 1992).

Impact of nature of work on job satisfaction and performance

The scholars have found that different factors have significantly influence the job satisfaction. These factors are like pay, promotion opportunities, task clarity and association with co-workers and supervisors. Ting (1997) and Locke (1995) studied that the work itself has positively correlated with the satisfaction of employee. Robbins et al. (2003) refer to the work itself as “the
extent to which the job provides the individual with stimulating tasks, opportunities for learning and personal growth, and the chance to be responsible and accountable for results”. Jobs matched with the competencies and that are mentally stimulating are liked by the employees (Robbins, 1993).

**Impact of job satisfaction on performance**

In the labour market there is demand of highly skilled, trained and qualified employees. The output and productivity of an organization is measured in terms the performance of its workforce (Carryall et al., 2005). It was found that better performance of the workforce is the result of level of job satisfaction (Sousa-Poza and Sousa-Poza, 2000). Nanda and Brown (1977) have investigated the important employee performance indicators at the hiring stage. They concluded that level of job satisfaction and motivation affects the employee’s productivity. The high performer demand attractive packages from the employers. And now it becomes predicament for the human resource experts to retain the performer (Summit, 2004). The low level of job satisfaction adversely effects on the employee commitment and sequentially effect the achievement of organizational objectives and performance (Meyer, 1999).

**RESEARCH METHODOLOGY:**

**Objectives of the study**

**General objective**

The major objective of this study is to identify the various determinants that influence job satisfaction and performance of health professional in Different Hospitals of Hawassa administrative town In Ethiopia.

**Specific objectives**

The specific objectives are as follows:-

- To assesses the impact of determinants on job satisfaction and performance of the health professionals in Different Hospitals.
- To assess the overall job satisfaction and performance level of employees in Various Hospitals.

**RESEARCH DESIGN**

The researcher use probability sampling in which stratified random sampling is used. And a research design is considered as the framework or plan for a study that guides as well as helps the data collection and analysis of data. The descriptive research design is adopted for this Research Paper.

**Sampling technique and sample size:**

Kothari has developed and provided the following equation to yield a representative sample for finite population and thus in this research it is used to decide...
the sampling size (2004:175-181). Accordingly, the sample population is determined from a total population of 134 health professionals from different Hospitals with 5% deviation from the true value with 95% probability. Hence with 95% confidence, the deviation is not due to fluctuations of sampling. Therefore, there is no difference that is rejected at 5% level of significance level and the confidence level are assumed to be appropriate given the time and financial constraints and it is believed also to be effective.

Formula: \[ n = \frac{Z^2 \cdot p \cdot q \cdot N}{e^2} \] 
Where,
- \( N \) = size of population = 134
- \( e \) = significance level (precision/acceptable error) = 0.05
- \( p \) = sample proportion = (The value of \( p = 0.5 \) in which case “\( n \)” will be the maximum and the sample will yield at least desired precision. This will be the most conservative sample size)
- \( q = 1 - p \)
- \( Z \) = standard variance at the given confidence level (as per the table of area under normal curve for at 95% confidence level) = 1.96

\[ n = \frac{(1.96)^2 \cdot (0.5) \cdot (1-0.5) \cdot (134) \cdot (0.05)^2 \cdot (134-1) + (1.96)^2 \cdot (0.5) \cdot (1-0.5)}{(0.05)^2} \]

\[ n = 99 \]

Accordingly the sample size of this study is 99. Study samples are allocated among the 8 strata on the basis of their proportion as follows:

### Table – 1: Proportional Distribution of the Population from Each Stratum

<table>
<thead>
<tr>
<th>Profession</th>
<th>No. Of Professionals</th>
<th>% of total population</th>
<th>Sample size among strata</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>12</td>
<td>8.9</td>
<td>9</td>
</tr>
<tr>
<td>Health Officer</td>
<td>8</td>
<td>5.97</td>
<td>6</td>
</tr>
<tr>
<td>BSC Nurse</td>
<td>2</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>Clinical Nurse</td>
<td>65</td>
<td>48.5</td>
<td>47</td>
</tr>
<tr>
<td>Mid wife</td>
<td>13</td>
<td>9.7</td>
<td>10</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>10</td>
<td>7.47</td>
<td>8</td>
</tr>
<tr>
<td>Laboratory</td>
<td>16</td>
<td>11.94</td>
<td>12</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>5.97</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>134</td>
<td>100%</td>
<td>99</td>
</tr>
</tbody>
</table>

### Sources and method of data collection

Intention scale measurement has been used to evaluate the views of employee job satisfaction and performance with respect to determinants, the primary data were obtained by structured questionnaire and secondary data were obtained from other sources and related documents.

### Reliability and Validity of the measuring instrument:

Table – 4: The reliability test of the questions of dependent and independent variables

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.878</td>
<td>36</td>
</tr>
</tbody>
</table>

As shown in the table 2 the reliability of the questions is .878 which is acceptable because the reliability level more than 0.7 is acceptable.

### METHOD OF DATA ANALYSIS

All scales in this study will be used on five point Likert scale Analysis done by using various descriptive statistical tools like SPSS version 19. Descriptive analysis such as frequency, mean and standard deviation and multiple regression and Pearson correlation coefficient and reliability test level of analysis in this study. Results are presented in the form of tables.

### Table – 3: Job Performance

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Item</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What do you think about the job makes you to use best of abilities?</td>
<td>2.17</td>
<td>1.309</td>
</tr>
<tr>
<td>2</td>
<td>Can you get a head in this organization if you make the effort?</td>
<td>2.61</td>
<td>1.37</td>
</tr>
<tr>
<td>3</td>
<td>What is your opinion about the expectation of your boss?</td>
<td>2.05</td>
<td>1.239</td>
</tr>
<tr>
<td>4</td>
<td>Do you think you can achieve your goal by working in this organization?</td>
<td>1.27</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

The table 3 Depicts the computed mean of the responses for Item 1 (Mean=2.17) show that the health professionals were satisfied about on whether job made them to use their abilities in the organization. Besides, The computed mean of the responses for Item no 2 (Mean =2.61) indicate that the health professionals were neutral about whether get a head if they made the effort in this organization. In addition the computed mean of the responses for Item no 3 (Mean=5.05) indicate that the health professionals overall response mean tends to satisfied. Moreover From the analysis the overall performance of health professionals of hospitals were helped them to deliver quality services effectively and efficiently to the society. So to increase quality of services and to satisfy the customer the organization should facilitate conditions.
As shown in the table 4 show that the majority of the respondents the computed mean of the responses (Mean=2.24) for Item no 1 indicate that the health professionals were satisfied on the rate of overall job satisfaction among health professionals in the organization. Besides, the computed mean value of the responses for Item no 2 that (Mean=2.39) indicate that the respondents were satisfied on the current evaluation process of the organization. From the analysis the level of overall satisfaction of health professionals in hospital industry were in a good condition. So the organization should facilitate the conditions to enhance the level of overall satisfaction; as the satisfied health professionals can serve the customers more effectively and efficiently.

Sources: Authors Compilation

<table>
<thead>
<tr>
<th>S. No</th>
<th>Item</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How do you rate overall job satisfaction in your department?</td>
<td>2.24</td>
<td>1.373</td>
</tr>
<tr>
<td>2</td>
<td>Are you satisfied with the current evaluation process of your organization?</td>
<td>2.39</td>
<td>1.184</td>
</tr>
<tr>
<td>3</td>
<td>Are you satisfied with authority and responsibility given to you?</td>
<td>1.34</td>
<td>0.476</td>
</tr>
<tr>
<td>4</td>
<td>Are you satisfied by doing challenging jobs?</td>
<td>1.41</td>
<td>1.101</td>
</tr>
</tbody>
</table>

As shown in the table 5 the Pearson-correlation coefficient (r=.553) for relationship with supervisors indicates the strongest relation with the job satisfaction and followed by job autonomy with Pearson correlation coefficient(r=.516), but the Pearson correlation coefficient(r=.266) indicates the weakest relation between relationship with co-workers and job satisfaction. Moreover, all the predictor variables have positive relation with job satisfaction.

Sources: Authors Compilation

<table>
<thead>
<tr>
<th>Independent variables (determinants of job performance)</th>
<th>Job performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation coefficient</td>
<td>Sign(two-tailed)</td>
</tr>
<tr>
<td>Pay</td>
<td>.349</td>
</tr>
<tr>
<td>Promotion</td>
<td>.273</td>
</tr>
<tr>
<td>Job security</td>
<td>.381</td>
</tr>
<tr>
<td>Working condition</td>
<td>.281</td>
</tr>
<tr>
<td>Job Autonomy</td>
<td>.516</td>
</tr>
<tr>
<td>Relation with co-workers</td>
<td>.266</td>
</tr>
<tr>
<td>Relationship with supervisors</td>
<td>.553</td>
</tr>
<tr>
<td>Nature of work</td>
<td>.334</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Correlation is significant at 0.05 level (2-tailed)

As shown in the table 6 the Pearson-correlation coefficient (r=.629) for relationship with nature of work indicates the strongest relation with the job performance and followed by, but the Pearson correlation coefficient(r=.314) indicates the weakest relation between relationship with pay and job performance. Moreover, all the predictor variables have positive relation with job performance.

Sources: Authors Compilation

Correlation is significant at 0.05 level (2-tailed)

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>t</th>
<th>Sign.(2-tailed)</th>
<th>R</th>
<th>R²</th>
<th>AdjustedR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay</td>
<td>.131</td>
<td>.821</td>
<td>.414</td>
<td>.584</td>
<td>.341</td>
<td>.276</td>
</tr>
<tr>
<td>Promotion</td>
<td>.079</td>
<td>.725</td>
<td>.470</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job security</td>
<td>.008</td>
<td>.064</td>
<td>.950</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working condition</td>
<td>.042</td>
<td>.379</td>
<td>.705</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Autonomy</td>
<td>.179</td>
<td>1.361</td>
<td>.177</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relation with co-workers</td>
<td>.120</td>
<td>.626</td>
<td>.533</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship with supervisors</td>
<td>.728</td>
<td>2.804</td>
<td>.006</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature of work</td>
<td>.171</td>
<td>.848</td>
<td>.399</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sources: Authors Compilation

As shown in the above table 7 the Adjusted$R^2 = .276$ which indicate that the independent variables (predictors) mentioned in this study determine (27.6%) variance on the level of job satisfaction and the remaining other determents not included in this study determine (62.4%) of variance in the job satisfaction. From the table to determine the influence of specific independent variable on dependent variable we have to identify the highest $\beta$ value. From the independent variable relationship with supervisors as computed $\beta=.228, P>.05$ have the strongly influence the dependent variable which is job satisfaction. This shows that the relationship with supervisors increase by one percent increases the job satisfaction by 22.8%. This indicates relation with superiors have strongest influence on job satisfaction from the given determinants of job satisfaction.

Table 8:

<table>
<thead>
<tr>
<th>Variables (predictors)</th>
<th>$\beta$</th>
<th>T</th>
<th>Sign.(2-tailed)</th>
<th>R</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay</td>
<td>.204</td>
<td>1.152</td>
<td>.729</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td>.081</td>
<td>.666</td>
<td>.253</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job security</td>
<td>.487</td>
<td>3.293</td>
<td>.507</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working condition</td>
<td>.104</td>
<td>.852</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Autonomy</td>
<td>.132</td>
<td>.905</td>
<td>.397</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relation with co-workers</td>
<td>.332</td>
<td>1.559</td>
<td>.368</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship with supervisors</td>
<td>.016</td>
<td>.177</td>
<td>.123</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature of work</td>
<td>.834</td>
<td>3.716</td>
<td>.860</td>
<td>.736</td>
<td>.541</td>
<td>.496</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

As shown in the above table the Adjusted$R^2 = .496$ which indicate that the independent variables (predictors) mentioned in this study determine (49.6%) variance on the level of job performance and the remaining other determents not included in this study determine (51.4%) of variance in the job performance. From the table to determine the influence of specific independent variable on dependent variable we have to identify the highest $\beta$ value. From the independent variables nature of work with $\beta=.834, P>.05$ have the strongly influence the dependent variable which is job performance. This shows that the conduciveness of nature of work increase by one percent increases the job performance by 83.4%. This indicates the favourableness of the nature of job have strongest influence on job performance from the given determinants of job performance.

CONCLUSIONS

Finally the overall job satisfaction and performance are in good condition among the health professionals. Pearson-correlation coefficient ($r=.553$) for relationship with supervisors indicates the strongest relation with the job satisfaction and followed by job autonomy with Pearson correlation coefficient($r=.516$), but the pearson correlation coefficient ($r=.266$) indicates the weakest relation between relationship with co-workers and job satisfaction. Pearson-correlation coefficient ($r=.632$) for relationship with nature of work indicates the strongest relation with the job performance and followed by nature of work with Pearson correlation coefficient($r=.629$), but the pearson correlation coefficient($r=.314$) indicates the weakest relation between relationship with pay and job performance. From the independent variables nature of work with $\beta=.834, P>.05$ have the strongly influence the dependent variable which is job performance. From the independent variable relationship with supervisors as computed $\beta=.228, P>.05$ have the strongly effluence the dependent variable which is job performance.

Findings:

The analysis indicate that the health professionals pay system was not appropriate with what they have been doing in the organization and the analysis indicates that the promotion system among the health professionals was well designed.

The analysis indicates that the current trend about safety and security of the organization is in good position and the working condition in the organization was suitable for health professionals, from the analysis the relationship between co-workers is harmonious and likewise with supervisors.

All the predictor variables(independent variables) have positive relation with job satisfaction and job performance. This indicates relation with superiors have strongest influence on job satisfaction from the given determinants of job satisfaction.

This indicates the favorableness of the nature of job have strongest influence on job performance from the given determinants of job performance.

This study put forward some essential recommendations. The organization should design health professionals pay system which is attractive to retain and to increase their commitment to the organization and other incentives such as overtime, top-up, transportation allowance, house allowance, and free medical service for them and family. The organization should provide the necessary tools and training to the health professionals and job related training to make the working condition more attractive to the health professionals.

The organization should continue by strengthening the autonomy on job to increase the level of satisfaction and encourage the health professionals to sustain their relationship among each other by resolving any conflict arise among them.
The organization should increase the support to health professionals and quick responses should be given to improve the quality of service and the satisfaction of the employees.

The organization should facilitate the nature of work to make the health professionals effective and efficient.

The organization should facilitate the conditions to enhance the level of overall satisfaction; as the satisfied health professionals can serve the customers more effectively and efficiently.

REFERENCES

[12]Peters et al. Human Resources for Health 2010,
Consumer Intention towards Online Shopping

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Paper ID: ICBM-19-1125

I. INTRODUCTION

Online retail based business has developed almost to US$840 billion of every 2014 outperforming the offers of US$695 billion in year 2013 and it was assessed to increment to US$1506 billion out of 2018 (Lim, 2016). The task and accomplishment of powerhouse such as, Amazon, Alibaba, Tencent, Groupon and so forth have set a case for corporates to move the model of their business from brick and mortar to brick and click. Of internet users, 48.9 percent made online purchases in 2001, with three-quarters of purchasers indicating that they make 1-10 purchases per year (Zhang, 2002). All these findings and statics have helped earlier to discover what influences consumer intention to e-commerce by explaining logistical supports of e-stores, product quality, technological support, etc. but now people as well as number of online stores has increased tremendously. Thus, an understanding of factors that influence consumers’ intention ought to be useful for online store owners to design and deliver their offers in a right way manner. Therefore, this study will answer what explains consumer intention towards online shopping.

For this research study, we have used the technology acceptance model because it explains consumer intention towards online shopping by evaluating factors such as, usefulness of using online shopping, its ease of use and the perceived control of using e-commerce sites. This model also suggests consumers’ attitude towards online shopping which leads to the consumers’ behavioral intention. Thus, in this model perceived usefulness, perceived ease of use, perceived control and attitude are the independent variable and behavioral intention is the dependent variable.

II. METHODOLOGY

Secondary sources were explored to explain the variables in the model which describes the intention of consumers in online shopping industry. Apart from this primary research method was used to collect data from the population who are online shoppers.

1) Measurement: The questionnaire was provided for collecting consumer responses on their intention towards online shopping -its purpose was to evaluate their last or a few last experiences with online shopping. The questionnaire included perceptual measures that were rated on five points Likert scales. This was consistent with the prior studies on the similar topic. Each scale item started with number 1 with a verbal statement “Strongly Disagree” and ended at number 5 with the verbal statement “Strongly Agree”. We collected demographic data from the respondents and we focused only on the perceptual measures which helped keeping the analyses simple.

2) Sampling: Researchers like (Davis, Monsuw, Dellaert, Ruyter, Stoel) explored that the youth are the main buyers who use the internet to buy the products online. So, as the universe of this study, the researchers considered people in Dhaka who used the internet for different purposes and who are above the age of 18 years. The current study utilizes a non-probability sampling techniques that is convenience sampling. In this study, the researchers collected the primary data through distribution of survey questionnaires. The researchers developed a self-structured questionnaire to collect the required primary data. The principal component analysis was conducted with 119 respondents. The collected data was analyzed with the help of Statistical Package for Social Science (SPSS). Factor analysis is the basic tool that has been considered for data analysis. The data for the study was gathered through a structured questionnaire.

Keywords – Online shopping, E-commerce, Consumer behavior, Bangladesh

Abstract – Online shopping has become a new trend of shopping at present and it is quickly becoming an important part of our lifestyle. Due to widespread internet access to people of every corner, online shopping has been a massive growth in recent years. Young people have been the majority of online shoppers and thus this study finds out consumer intention towards online shopping. The study was conducted among Bangladeshi people aged eighteen years and above. The results of the study highlighted that there is a significant relationship between online shopping with consumer perceived ease of use, perceived usefulness, and perceived control. Similarly, the study also highlighted that there is a significant relationship of online shopping with consumer attitude and their behavior intention.
III. RESULTS

Regression analysis was used to test the model for customer intention. The full model was found to be F-statistic (P≤.05). The four factors had a significant effect on the customer intention towards online shopping. These include PEEE that is Perceived Ease of use (b=0.348; P<0.00), PUUU that is Perceived Usefulness (b=0.40; P<0.00), BIII that is Behavioral Intention (b=0.304; P<0.00), PCCC that is Perceived Control (b=0.054; P<0.00) that was not significant. The result explains that our modified model quite well explains the customer intention toward the online shopping.

A. KMO AND BARTLETT’S TEST

It is a statistical test for the presence of correlations among variables. This test provides statistical significance that the correlation matrix has significant correlations. A statistically significant Bartlett test of Sphericity is less than .05. As our study shows the KMO and Bartlett’s test’s significance is 0.000 thus it provides statistical significance that the variables has significant correlations among other variables.

Table 1: KMO and Bartlett’s Test

<table>
<thead>
<tr>
<th>Kaisser-Meyer-Oklin</th>
<th>Measure of Sampling Adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.846</td>
<td></td>
</tr>
</tbody>
</table>

B. Cumulative

In the cumulative percentage of variance explained should be more than 60%, which explains a good correlation among the factors. In this research study we have find cumulative as 59.766%, by using Varimax rotation technique.

Table 2: Total Variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Total N. of Variables</th>
<th>N. of Variables</th>
<th>Variance Explained</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>1</td>
<td>4.06</td>
<td>4.06</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2.01</td>
<td>2.01</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>1</td>
<td>1.65</td>
<td>1.65</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>1</td>
<td>1.06</td>
<td>1.06</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>1</td>
<td>0.81</td>
<td>0.81</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>1</td>
<td>0.51</td>
<td>0.51</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>1</td>
<td>0.44</td>
<td>0.44</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>1</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td>9</td>
<td>5</td>
<td>1</td>
<td>0.29</td>
<td>0.29</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>1</td>
<td>0.26</td>
<td>0.26</td>
</tr>
</tbody>
</table>

C. ROTATED COMPONENT MATRIX

Here, we have added the items of the same variable in one column together. Such as, items of Behavioral Intention (BI) variable is in column one, items of Perceived Ease of Use (PE) is in column two and items of Perceived Usefulness (PU), Perceived Control (PC) and Attitude (A) is in column three, four and five, respectively.

Table 3: Rotated Component Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEE1</td>
<td>.942</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE3</td>
<td>.797</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE4</td>
<td>.699</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC1</td>
<td>.994</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>.954</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI3</td>
<td>.922</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B14</td>
<td>.927</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. Regression Analysis

1) When dependent variable is Attitude (AAAA) and independent variables are Perceived Usefulness (PUUU), Perceived Ease of Use (PEEE) and Perceived Control (PCCC):

Here R Square shows (Table 4) that total variability of the dependent variable (Attitude, AAAA) is explained 18.2% by the independent variables (Perceived Usefulness, PUUU, Perceived Ease of Use, PEEE and Perceived Control, PCCC).

Table 4: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.427</td>
<td>.182</td>
<td>.161</td>
<td>.84772</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a) Predictors: (Constant), PCCC, PUUU, PEEE
b) Dependent Variable: AAAA

It Shows (Table 5) whether the whole model is significant or not. The F-statistic is significant at 95% confidence interval. If sig ≤ .05, then it implies that the whole model is significant. Thus, our research model is significant.

Table 5: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>168.199</td>
<td>3</td>
<td>56.066</td>
<td>3.74</td>
<td>.05</td>
</tr>
</tbody>
</table>

a) Dependent Variable AAAA
b) Predictors (Constant), PCCC, PUUU, PEEE

Beta shows (Table 6) the strength of the relationship between dependent and independent variable. It provides whether the relationship between dependent and independent variable is significant at 95% confidence interval. In short, sig ≤ .05. Here, in our research study, Perceived Ease of Use (PEEE) variable has more strength with Attitude (AAAA) more than other two independent variables.

Also, t-statistics (95% confidence interval, sig ≤ .05) explains whether the variable is statistically supported or not for the research model. Thus, Perceived Usefulness (PUUU) and Perceived Control (PCCC) are not statistically supported (which means, Hypotheses 1 and 3 is statistically not supported to the research model) but Perceived Easefulness (PEEE) is statistically supported.
(which means, Hypotheses 2 is statistically supported to the research model).

<table>
<thead>
<tr>
<th>Table 6: Coefficients</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>-790</td>
<td></td>
<td>.502</td>
<td>1.315</td>
<td>.134</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEEE</td>
<td></td>
<td></td>
<td>.231</td>
<td>.240</td>
<td>.947</td>
<td>.006</td>
<td></td>
</tr>
<tr>
<td>PCCC</td>
<td></td>
<td></td>
<td>.140</td>
<td>.140</td>
<td>.955</td>
<td>.173</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 7: Model Summary</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.304</td>
<td>.092</td>
<td>.084</td>
<td>1.02269</td>
</tr>
</tbody>
</table>

a. Predictors (Constant), AAA
b. Dependent Variable: BIII

2) When dependent variable is Behavioral Intention (BIII) and independent variable is Attitude (AAAA): Here R Square (Table 7) shows that total variability of the dependent variable (Behavioral Intention, BIII) is explained 9.2% by the independent variable Attitude (AAAA).

Our research model is significant as F-statistic is significant at 95% confidence interval (sig ≤ .05) (Table 8).

<table>
<thead>
<tr>
<th>Table 8: ANOVA</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1</td>
<td>43.516</td>
<td>11.771</td>
<td>.001</td>
</tr>
<tr>
<td>Residual</td>
<td>195</td>
<td>2.087</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>196</td>
<td>45.603</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 9: Coefficients</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>.246</td>
<td>.001</td>
<td>.246</td>
<td>.041</td>
<td>.947</td>
<td>.301</td>
<td></td>
</tr>
<tr>
<td>BIII</td>
<td>.140</td>
<td>.240</td>
<td>.140</td>
<td>.240</td>
<td>.947</td>
<td>.301</td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: AAA

In our research study, the strength between Behavioral Intention and Attitude is very high. Also, Attitude (AAAA) is statistically supported (which means, Hypotheses 4 is statistically supported to the research model) (Table 9).

IV. DISCUSSION

The result suggests that, our model satisfactorily explains consumer intention towards online shopping and the seller should focus on four major elements – perceived usefulness, perceived ease of use, perceived control, behavioral intention. If the consumer intention is to be treated as a strategic and variable the buyer needs to focus on these four variables. From the result it can be determined that, PEEE (Perceived Ease of Use) dimension was the most important for the customer. This variable encompasses the flexible shopping from online, the information that the customers need is quite easy from doing online shopping. The element of perceived ease of use are the easy system, process, effortless to become skillful. In the online shopping the perceived ease of use plays an important role because the consumer will buy from online only if it provides the effortless and quick desirable products and service to the customers. However, if anyone buy the product from online, they can save their time also they buy the product efficiently. From a technical perspective it can be said that, if the buyers want to gather a large amount of consumer then they should focus on the perceived ease of use. The online sites should be designed in a way that people find it easier to use and shop from this website. The instructions and the process of shopping in online should be easier and be very precise that the consumer can easily want to shop from online.

Moreover, when it is about the behavioral intention as a dependent, they have a positive effect towards the attitude have a positive correlation with the behavioral intention. From the data analyze it can be observed that, the significant rate is 0.304 that means that the attitude has a positive relation with the consumer intention toward online shopping. It is the second important factor that leads the consumer intention toward online shopping. From our survey it can be seen that, our consumer indicated if anyone have the habit of behave in a same way the attitude will also take the same direction. If anyone continuously behave like a same way then the person will also have a positive attitude towards the work.

Based on the standardized regression coefficient the Perceived Usefulness (PUUU) was determined to be the next important factor in influencing consumer attitude toward online shopping. The standardized coefficient beta is positive (.140) that means that the perceived usefulness is positively effects to the consumer attitude toward online shopping. According to Davis (1989) claims that, when a person considers using a particular system can enhance their job performance it is called the perceived usefulness. If the perceived usefulness of a product is high then the consumer’s attitude towards online shopping will be increased. There are several factors that can regulate the consumer attitude towards online shopping. The result of our regression also supports the statement. If an online shop does not provide the usefulness feature to their products and services the customers will not further buy their product. So, here there is a positive effect of perceived usefulness toward the online shopping. The seller should keep it in their mind if they do not provide any exclusive and better product and service to the consumer in future the consumer will not buy from them. In addition, based on the standardized regression coefficient the Perceived Control (PCCC) was determined to be the last factor influencing attitude toward online shopping.

From the above discussion it can be said that, if anyone needs to satisfy and wants consumer retention then he needs to simultaneously provide the perceived ease of use, perceived usefulness, behavioral intention and perceived control. The sellers need to provide the easy way of transaction and easy way of ordering products the consumer will be more enthusiastic to shop from online. Moreover, the product should be useful and have a desire output that consumers can again and again take their services. The sellers also have to maintain the products quality and their design so that consumer will never dissatisfied towards their products.
V. CONCLUSION

Due to digitalization and extensive use of internet people are getting attracted towards online shopping. In our research we have tried to find out consumer intention towards online shopping. For our study we have considered three independent variables (perceived usefulness, perceived ease of use, perceived control) and two independent variable (attitude, behavior intention). We choose our research topic after extensive research on existing research paper where researchers have heavily emphasis on consumer attitude towards online shopping. The giants online shopping sites can do further research on this topic to get more authentic and accurate information about their consumer. The information which we have gather through our studies can also be used for online marketing and targeting new customers. Lastly, it can be said that our study will help a big time the industry people and the people who wanted do further research on this topic.

The present study is based on limited number of variables which affects the consumer intention towards online shopping. Therefore, researchers can use different variables such as, website design, reliability, internet traits, attitudinal traits, perceived risk, perceived securities etc. to explore consumer intention towards online shopping. Further, studies can be conducted by taking into account larger geographical area i.e. respondents from different cities of Bangladesh. Further researchers can also conduct research to examine behavior to shop online with special reference to product categories and brands. By considering these aspects, it may be possible to provide deeper insight into the factors that online shopping business and managers need to stress in their total offering.

REFERENCES

Embedding Digital Supply Chain in Academic Institutions: A literature review

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Paper ID: ICBM-19-1141

Abstract – Digitization has reached all industries and all sectors of society. Companies and industries are currently facing important transition processes. The future seems to be less predictable for others, which endangers existing competition. Meanwhile, digitalization opens a series of new opportunities, such as the relocation of companies and organizations to relocate businesses and operations. The digitalization of incumbents and new digital companies face some strategic challenges in terms of digital transformation and digital innovation in education industries. In this study, we focus on these strategic challenges. We extract, present and discuss a set of common strategic challenges related to digital transformation and innovation processes in academic institutions. One of the main strategic challenges of digitalization is the development of digital academic supply chain for education industry. This research also empowers the digitalization and supports these academic sectors in the digital transformation.

I. INTRODUCTION

One of the most recent research topics is digitization in industry and education section. Many research projects focus on different perspectives [15]. The days when digitization or the business effects of ICTs only increased efficiency [13]. In contrast, the domino effect of digital development can now feel broader and deeper than ever. All the consequences of digitization are business and value creation, and ways to make companies more efficient and sustainable. However, adapting to new needs and taking advantage of many opportunities is not always easy. The management of digitalization and the transformation of the business are always new challenges. The novelty and complexity of the digital era have led to a greater scientific interest in calling digital transformation in academic industry. We examine digitization in education industry research. We believe that this digitization is a tool for a better education management in education industry.

I. DIGITALIZATION – DIVERSE VIEWPOINTS

The role of digital technology in business and society is rapidly changing from the driving force behind marginal efficiency to the promotion of basic innovation and disruption in many industrial sectors, such as the media, information industries and communication, and much more. The economic, social and commercial effects of digitization are debated and raise serious doubts about the broader impact of digital transformation. Digitization affects all private and public operations, as well as the internal and external operation of any operation. Digitization is the overwhelming driving force behind large-scale transformations in a multitude of industries. The transformation of digital academic supply chain is one of the modern education management system for academic sector [19]; [20].

II. THE NEW DIGITAL CUSTOMER

Digitization has resulted in an academic user-centered system. The changing behavior of the consumer / digital customer is analyzed here in relation to the new forms [16]. The client and the stakeholders are very much relay on the modern tech for the education management. Apart form that the individual consumer is a product for the education and graduate management for academic industry [18].

III. COMMERCIAL MODELS

The models of companies’ and industries are changing day by day and they need to adapt this innovation. Given that digitization leads to the convergence of previously connected markets, the academic and the digitization organization are analyzed in a regular and dynamic context. This section draws attention to business models [14].

IV. VALUE CREATION IN PROFESSIONAL SERVICES

The concept of value creation is often used to describe what an organization produces for the society. In addition, the professional service section also improves graduate management system [1]. Although it is often described as a value that the client may consider valuable [2], the creation of value is not limited to the client. Rather, companies also create value: for example, for current employees, potential employees, potential customers, graduates and academia. Therefore, the creation of value be the objective of creating perceived value among the stakeholders of the academic and use their resources in the most efficient and profitable way. The creation of value of professional services companies is related to personalized services and the resolution of problems based on professional experience [12]. The
business model underlying the provision of services has changed very little in the last century and is based on graduate output [3]. The role of professional services academic institutions has also been linked to other stakeholders, since this type of company has been described as a generator of knowledge that has acquired considerable knowledge among many actors in society [4].

V. CONCEPTUAL FRAMEWORK

In this section we demonstrate the digital supply chain transformation in academic industry.

![Digital supply chain diagram]

VI. DISCUSSION

A. Managing Digitalization and Service Transformation: Shifting from Product To Service-Based Business Models

In many sectors, digitization is linked to the transition from product delivery to service. According to [5] a supplier resorts to the dominant logic. This has become one of the main challenges of the digitalization processes, which often require new organizational principles, structures and processes related to customers. Business models change from transaction to relationship-oriented, which means developing new capabilities, such as organizational structures, metrics etc. The following examples show three possible service innovations:

Nobina, moves towards “mobility as a service” for urban and rural education industries. These innovations represent a range of knowledge areas, new technologies and digital platforms and actors from multiple industries in new partnerships [17]. These innovations in digital services can be novelties in the connection of each service (interconnected or separated). The role of the different actors (including users), the organization and distribution of services (as well as the price and the price), the pay). We have seen and informed [6] how the relationships between graduate and institutions change when different areas of knowledge and industries are involved in such digital service innovations. The transition from product to service-based business models in digital transformation means recognizing uncertainty and complexity [16]. In addition, the value of a new digital service for a user is difficult to detect and appreciate during the conversion.

VII. SHAPING NEW CO-OPERATIVE BUSINESS MODELS

Digitization opens interdependencies of cross-border networks. A company of this type in this context cannot independently develop and implement sustainable digital transformation, including changing the business model [7]; [8]; [9]. This means that different models of private and public actors may prefer the model. There is a need to resolve conflicts between actors with different business models. There are a number of uncertainties in the innovation of digital services of this magnitude that challenge traditional roles and positions. These are the challenges faced by young digitizers and established companies when they work together to continue the processes of digital transformation. However, cooperation between institutions allows universities to accelerate innovation and create more competitive graduates. Therefore, this academic supply chain integrated digitization and the creation of new partnerships and new digital academic supply chain models [21]; [22].

VIII. CONCEPT OF DIGITALIZATION

The concept of digitalization is often used to describe what an organization produces and the outcome for the society. It achieves and provides the best possible value with the least possible use of resources [1]. Although it is often described as a value that the client may consider valuable [2], the creation of value is not limited to the client. Therefore, the digitalization can be seen as the objective of creating perceived value among the stakeholders of the education industry and use their resources in the most efficient and profitable way. The role of professional services companies has also been linked to other stakeholders, since this type of educational institution has been described as a generator...
of knowledge that has acquired considerable knowledge among many actors in society [4].

IX. METHODOLOGY

The interviews were recorded, transcribed and analyzed in several steps. The data collected was analyzed using analytical methods and an inductive approach [10]. First, we used an inductive approach to develop appropriate first-class categories, which, however, resembled the existing theory. However, these categories are grouped into larger subsidiaries and the main dimensions of the business model framework. The exploratory categorization was based on the memories of Word. Then, we chose a more deductive approach to recoding the data compared to the different basic dimensions of the business models [11], with special reference to the innovation models of the professional services companies [3]. We use most universities student and staff data bank. Finally, we come up with formation of the result of digital integration in academic industry [23].

X. HYPOTHESIS

A positive relation in digital integration in academic supply chain. If the digital platform works properly then the graduate management and staff performance increase.

XI. CONCLUSION

As already mentioned, the challenges of digitalization do not come alone. In this study we have developed a broad question: What are the general, strategic and managerial challenges of digitization? The different general paths of digital transformation are presented on the basis of our vision of the fifteen areas of digital transformation.

REFERENCE


Compliance Issues and Insights of RMG Sector

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Paper ID: ICBM-19-1157

Abstract – The purpose of this research is to investigate the reasons behind the failure of bringing foreign orders for RMG sector of Bangladesh, even though being more experienced and having cheap labor facilities than the other competitor counties in the neighborhood. More specifically the objective is finding the underlying gaps between the foreign buyers and local company regarding the compliance issues. RMG is one of the biggest and largest earning sector in Bangladesh. With the help of this research companies belonging to RMG sector can improve the areas of disruption which will develop their company strength and internal infrastructure. Eventually, this report can help improve the underlying issues of overall RMG sector of this country.

Keywords – Compliance issues, Social issues, Technical issues, Environmental issues, Labor rules and laws, Workers’ safety and right.

I. INTRODUCTION
The Ready Made Garment (RMG) industry has been making essential contribution to rebuilding of Bangladesh and its economy. Now it is one of the biggest export earner for Bangladesh as we have found promising opportunities in this sector. This particular sector accounts for 82% of total export earnings of the country (EPB: Export Promotion Bureau, 2017). After the degradation of our only major export earner “jute industry”, RMG sector replaced it and gradually overtaken it. Bangladesh’s export earnings from the RMG industry, have seen only a 0.20% rise in the concluding FY’17, which is the lowest recorded in the last one and a half decades (“RMG sector needs long-term consistent policy measures to grow further”(2018), TextileToday). If this situation continues to carry on with the same pace then the vision of achieving the $50 billion export target by 2021 will be left remaining as a dream only. (“Bangladesh sets export target of $50bn by 2021”(2014), FashionUnited)

II. METHODOLOGY

PRIMARY RESEARCH:
The elements of my primary research were interviewing related people, arranging FGD (Focus Group Discussion) and personal observations. All these things helped to understand the existing underlying compliance issues and find the loopholes.

SECONDARY RESEARCH:
For the secondary research phrase help of related journals, books, and articles has been used in order to get in depth idea regarding compliance issues. Researches of previous scholars have also widened the knowledge regarding the topic. Furthermore, news and article from the digital media have also been used in several areas of this report. However, this report can be beneficial for the organization itself, other companies in the RMG sector and also for the potential investors of RMG sector.

III. REVIEW OF RELATED LITERATURE
  i) Word to word meaning of Compliance:
The word “Compliance” came from “comply”. From Oxford Dictionary, “compliance” means the action or fact of complying with a wish or command. Oran Young (1979) mentioned: “Compliance can be said to occur when the actual behavior of a given subject conforms to prescribed behavior, and non-compliance or violation occurs when actual behavior departs significantly from prescribed behavior.” This definition defines that “compliance” means the proper implementation and adaptation of domestic rules and regulations. In addition, whenever the prescribed behavior has not been followed, it has resulted in violation of compliance or non-compliance incidents.

  ii) Confusion regarding compliance:
Though compliance means complying with the suggested behavior, rules and regulations, some confuse it with the replication of international rules at local territory. In reality it is not always something like that. Beth A. Simmons said in his COMPLIANCE WITH INTERNATIONAL AGREEMENTS that replication of international rules at the domestic level is no guarantee of their potency. Where international law is easily absorbed into the domestic system of rules one can wonder if behavior would have been much different in its absence; where international rules do not comport well with indigenous legal culture, expectations for compliance should not be high (Simmons , 1998). So, it refers that compliance is basically prepared to make existing situation better by following the suggested rules and regulations of the concerned authority.

  iii) When Compliance became important for Bangladesh?
Compliance was always there and its implications were there too. Earlier, as being an under-developed country, very few companies of Bangladesh followed the compliance and its regulations. Now, recently we have
stepped on to the list of developing nations and with that our list of responsibilities has also extended thereby. However, the main reason of becoming compliance so important raised after the unfortunate devastating incident of Rana Plaza collapse in 2013, where death toll raised up to 134. According to news headlines more than a thousand of 2.5 thousands workers were severely injured due to this horrific collapse of Rana Plaza (Manik & Yardley, 2013). As a result of this life taking incident, all the European and American buyers of Bangladesh became very much conscious about our booming but barely regulated garment industry.

For a while, all the foreign buyers of Bangladesh textile sector stopped ordering anymore. After a lot of negotiation, foreign buyers agreed to continue their orders on conditions. The main condition was regarding the safety of workers and working conditions. American buyers asked for ACCORD agreement. Both of these agreements are actually created to provide fire and building safety to the workers which eventually refers to the compliance. After this, foreign buyers come to only those factories who have been abide by the agreements and became compliance factories.

iv) Purpose of Compliance:  
The actual purpose of compliance is to create a safe working environment which also saves the Mother Nature and its green environment. Though at first the glance, it looks like compliance is beneficial for the workers only but the reality is it is adds long term brand value and profits for the owners too. Initially, an owner might find it as a source of extra liability and expenses but at the end of the day it is for the betterment of the entire company. For an instance, buying sprinklers for fire safety is costly for an factory which is large in size because more sprinklers will be needed but if we count the value of the property is will save in time of fire occurrences then we can actually understand the long term value of compliance agreement.

IV. RESULT  
Mainly there are four types of compliance issues that are needed to be followed up properly and they are: 1) Social Issues, 2) HR Issues, 3) Environmental Issues and 4) Technical Issues. Basically this four types of issues are checked during the audit of any garments factory depending on their types of working. In MNS Garments Printing all these types of compliance audit take place excluding the technical one and they are broadly described below.

1) SOCIAL ISSUES  
One of the important branch of compliance issues is social issues. Under social issues there are some sub-points and they are:
Legal Licenses: Legal documents refer to the licenses which give the permission to do a business or any particular work. For garments sector some sort of legal licenses are must to be collected from /approved by and they are:

- Fire License from Bangladesh Fire Service and Civil Defense.
- Trade License from the City Corporation or the Union Parishad.
- Environmental Clearance Certificate from Department of Environment (DOE).
- Drinking Water Test Report from Institute of Public Health Bangladesh.
- Wastage Water Test Report from Department of Environment.

Registers:
- Leave Register: How many workers are having leave of absence, for how long and for what reasons all these details are recorder in the leave register
- Maternity Register: This register records all the details about the pregnant woman workers. This register is a must to cross check that every pregnant woman worker in the factory is getting the prescribed maternity benefits appropriately. According to Bangladesh Labor Law 2006, a pregnant woman worker gets in total of 112 days of maternity leave with benefits; 56 days of leave before the expected date of delivery and the rest 56 days is given after the delivery. The condition is if the woman has less than two alive children then she will get this maternity leave with benefits but if she has two or more alive children she will be able to get only the leave not the benefits. (Bangladesh Labor Law 2006, chapter: 04, section: 45-50)
- Fire Drill Register: According to the Bangladesh Labor Rules, fire drill program should be arranged twice in every year. (Bangladesh Labor Rules, Rules: 55, sub-rule: 14) Whereas, big buyers like H&M, C&A suggest to arrange fire drill program (day) once every month and night fire drill program thrice every year.
- Accident Register: While working in a factory, various types of minor – major accidents can take place. Accidents register all the accidents that occur in the factory and also keeps record of initiatives taken further.
- Training Awareness Register: Awareness training are given to teach the rules and regulations of the company so that the rate of absenteeism decreases, each and every worker works with the expected harmony.

Production Records
- Broken Needle Records
- Daily Cutting & Finishing Records
- Basic Information
  - Today’s Attendance
  - Total Attendance
  - Number of Toilets
  - Number of Fire Extinguisher
  - Number of First Aid Kits
- Yearly Holiday and Notice List File
- Factory Profile
- Workers Handbook
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- Fire Fighting Team and First Aid Trained Persons’ List

2. HR ISSUES

HR issues involves some specific HR related topics which provide an overall idea about the administration, management, manpower and also the working environment of the factory.

Personal File (Different departments): Personal file of an employee is a very important set of documents which contains the record of employment relationship from the very begin with employment application to the termination details and evidences. It is a main duty of the HR team of the company to update the personal files of the employees regularly. In this regard, an auditor checks whether there is every important documents of an employee is being recorded or not. He also looks for the most updated information. Sometimes auditor looks for the leave forms of the employees. It is also very important to add competency certificate of the required employees such factory doctor, electrician, driver etc.

Service Book: A service book is a vital document for an employee. It must be maintained properly for every permanent employee. Service book contains data related with service of employees such as joining of employee, their promotion, transfer, salary, leave etc. The HR team of the factory is in charge to open service book and duplicate it immediately after the joining of an employee. Service book also records yearly increment of salaries, earned leave benefit details and also details of disciplinary action if ever taken against. (Bangladesh Labor Rules2015, Rules 20 & Bangladesh Labor Law2006, section-06)

Time Record (Last 12 months): Here, time record refers to the Job Card of the worker which gives a brief record of working hour, overtime, time of entrance, time of leave, date of absence and date of leave etc. Through this record an auditor will understand the level of pressure the factory is imposing on their workers. He will also get an idea of over time limit. Because according to the Bangladesh Labor Law a worker cannot work more than 2 hours daily as overtime after his 8 hours duty and will get OT at the rate of twice of average of his basic wages. (Bangladesh Labor Law 2006, section-100, 108)

Payroll Record (Last 12 months): Payroll is a list of company’s employees where the total amount of wages they are being paid is clearly recorded. Payroll records employees’ salaries, wages, bonuses, benefits etc. However, an auditor checks whether the company is paying min wage or not, whether workers are grade wise designated, whether the salary is being paid within the 1st 7 working days of the month or not etc.

3. ENVIRONMENTAL ISSUES

Organogram of the organization: This literally means the structural chart of the organization which shows the relationships between different ranks and positions. An organogram of the company must be designed based on the organizational culture, priorities, structure and working procedure. A proper organogram can help making the planning and forecasting procedure easier than usual. MNS Garments Printing’s organogram is mentioned on page no. 04 of this report.

Organogram of EMS committee: EMS stands for Environmental Management System. The duty of this committee is to increase the efficiency and effectiveness of the factory by saving the energy (such as gas, diesel, electricity etc.) consumption through round the clock surveillance. This committee is consisted of two team; one is advisory team and another is implementation team. The advisory team works on the planning how can the energy consumption can be reduced effectively which does not affect the production system of the company.

Supplier List: This simply means the list of suppliers from whom the factory bring their raw materials and other necessary goods. The important fact here is that the company must check whether their preferred suppliers are legally registered or not because sometimes things can go wrong as a result of suppliers’ mistakes at that moment if the suppliers are not registered cannot be sued for their mistakes. However, disclosing the preferred suppliers’ details makes things more transparent and creditable. This also ensures that the product is being produced in a manner that follows the environmental and labor standards.

Environment Clearance Certificate (from DOE): This is the same certificate mentioned in the legal license section. This certificate is asked both in social and environmental audit.

Energy Consumption Record for last 12 months (Electricity, Gas, Diesel etc.): This is the record of energy consumption that has been consumed by the factory in any possible ways in given period of time.

Water Consumption Record for last 12 months: This is the record of water consumption that has been consumed by the factory production unit, for any domestic use such as drinking, washing, cleaning etc. in a certain period of time. MNS garments printing’s last year’s water consumption record is given below in brief:

ETP Capacity: ETP stands for EFFLUENT TREATMENT PLAN which is a waste water purifying system that purifies industrial harmful waste water. This water treatment plan purifies waste water in a way that the purified water becomes worth to reuse and safe for the environment. This is very important for the safety of the environment because if we release harmful waste water to the environment then the natural water reservoirs will be destroyed.

In House Lab for testing waste water: In House Lab of the factory tests the waste water after being recycled to analyze whether the water has been purified with the perfect PH balance or not so that it can be released to the environment by ensuring that the water is safe.
4. TECHNICAL ISSUES
There are a lot of issues under technical issues which vary depending on the type of the factory and its production working procedure. As MNS Garments Printing is a printing factory only these technical issues are checked according to the buyer’s COC.

Pest Control: This refers to regularly killing insects by using proper insecticides which do not leave any harmful chemical for human being and save the garment products from the insects.

Idle Machine: A factory uses number of machines to produce garment items. In this procedure some machines are used on daily basis, some are weekly and some remain idle for months. So, the factory must maintain a proper register book for all the idle machines which are not being used and those idle machines must be kept only in the designated area.

Cut Fabrics: Cut fabrics are the excess amount of fabrics that are thrown away after cutting the garment in shape. These cut fabrics should be maintained in the counting area under the supervision of appointed supervisors and in time of need those fabrics can be taken to the printing section with the permission of the supervisors. Lastly, the amount of cut fabrics going for the printing section should be recorded.

Metal Detection: Metal detector machine is used to detect any metal particle to keep garment product safe for human being. This is not mandatory for a printing factory like MNS because they do not use needle in any step of their working procedure.

Sharp Tools: Scissors, pen knife or any other sharp tools should be kept in a safe place so that no one gets hurt while working. A register should be maintained for sharp tools as sharp tools maintenance register under a supervisor. An auditor carefully checks whether the register book for sharp tools maintenance is properly maintained or not.

V. DISCUSSION
After doing this research few issues came forward which is can be improved for further betterment to strictly follow the compliance rules and regulations. Here are some of those lacking which were seen at MNS garments, so other RMG companies can also learn from these areas of improvement.

Congestion:
Having a good working environment is a part of compliance’s environmental issues. Though MNS Garments Printing has land area of 60422.55sft in total, around 38 printing tables and 4 automatic printing machines create congested working environment. In addition to that around 800 workers (including staff) work in this territory which actually explains the reason of congestion.
If it is possible to extend the existing land, then it is high time to extend the area of the factory for the betterment of the entire company. In case of not being possible to extend the existing area, then the company can actually prepare for shifting the factory to a better and larger place in near future.

Lack of Dining Capacity: MNS Garments Printing has a dining hall which can hold 160 workers at a time. Whereas, around 800 workers (including staff) are currently working in this company. Therefore, this imbalanced proportion surely indicated the need for a better spacious dining hall.
However, according to the company most of the workers are actually from the local area who have their homes nearby and at the lunch break they eventually go to their own places to have their lunch and a short period rest too.

Lack of Proper Drainage: During rainy season water logging is a very common scenario for the capital Dhaka city. As a result of unplanned poor drainage system water clogs severely and creates overflow of drain water which is very unhealthy.

Being a leading printing garments company, MNS garments should plan for a better and safe drainage system which will help the clogged water run fast even in the situation of over flowing.

Lack of Education: Garment sector has blessed our country with the light of employment and removed the darkness of unemployment of uneducated people. But in this journey, this industry has seen immense losses due to this creation of employment for little educated or even for uneducated people. A human being without basic knowledge or primary education can hardly understand any difference between right and wrong decision. As a result, these uneducated workers unintentionally do mistake while working and those silly mistake actually lead to hundreds of rejected garment products.
In this circumstances, the best option can be training the existing workers about being more careful and educating them about their daily work through arranging proper training sessions. Another option can be, recruiting literate workers who have primary education at least.

Lack of Daily Usage Register of Chemical: Having proper register of chemical and regularly updating it is a part of social and environmental issues of compliance. Though MNS Garments have monthly register of chemical usage, they do not have daily register for chemical. As it can create a problem any time, it is better to solve the issue before even being raised ever.

Lack of Worker Awareness: Probably readymade garment industry is the only section which witnesses the highest rate of workers’ migration. Even in MNS garments around 5-10 workers leave their job every month. This is surely the result of lack of awareness about the service benefits. If a worker knew about getting service benefits would probably not have left the job after working for 4 years. However, the only option to reduce the migration rate of the workers is raising awareness through regular training programs.

VI. CONCLUSION
This research is intended to find the underlying issues and gaps between foreign buyers and local companies in RMG sector of Bangladesh regarding compliance. After
doing this research we can surely understand the need of compliance factories in our country for the overall development of RMG sector and its economy which clearly depends of it. Compliance factories do not only safe guard the thousands of textile workers but also can uphold our economy as well. There are only four main criterion in compliance; social, environmental, HR and technical which are intended to provide overall safety to the workers and the factory. Now the owners of the non-compliance factories must understand the value of compliance factory before it is too late. Though there are numbers of factories available in our country who possess cheap experienced labor and efficiency, cannot be counted as a resource to our country as long as they do not shift to compliance factory. If the owner and directors of non-compliance factories try to understand the long term value of being compliance factory, then that day is not so far when we can get back our glory days of RMG industry.

**Contribution:** This research will be beneficial to roughly three parties. Firstly, MNS Garments Printing, the organization where I am currently working. With the help of this research they can actually find out where they are lacking. In addition, they can also point out the ways to improve the areas of disruption for better internal infrastructure. Secondly, other garments and companies who are serving the RMG (Ready Made Garments) sector of our country can also benefit from this research. Because this report has been prepared in a way which can help improve the underlying issues of overall RMG sector. Lastly, students who want to join or do research about this sector in future can get a better idea.

**REFERENCES**


Can “Liking” Behavior Lead Usage Intention of Facebook? Uses and Gratification Theory Perspective

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Abstract – Facebook’s “like” has emerged as a commonly used paralinguistic tool for communicating and its importance as a positive feeling towards others posts is likely to increase. However, there is still a need for comprehensive research into why and how users are motivated toward “like” and whether “like” generates an intention to continue using Facebook. This study combines the uses and gratification theory and subjective norm perspective to create an integrated model that predicts liking behavior and usage intention of Facebook. The proposed model is supported by a structural model analysis using empirical data collected from 267 Facebook users.

The most salient user motivations for the liking behavior are enjoyment, information seeking, social interaction, and subjective norm. In addition, the study revealed that liking behavior and subjective norm collectively contributed to project the usage intention. The findings would enhance the current state of knowledge of social networking site developers, managers, and organizations to improve the acceptance of their services or products, development of customer support, advertising or product development.

Keyword – Uses and gratification, Subjective norm, Liking behavior, Usage intention, Facebook.
Why Microfinance in Rich Developed Countries?

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Abstract – This research deals with the influence of microfinance/microcredits on business development analyzing how micro finances affect establishment of small enterprises in Sweden. For the analysis, the following research questions were addressed: How do small enterprises get access to microfinances and what kind of businesses are established through microfinances? Microcredit means giving entrepreneurs access to financial resources to borrow a small amount of money to invest in income generating business activities context related. A model of microcredit was developed to lend money to the poor for business entrepreneurship. Access to microfinance can facilitate poverty reduction and incorporate economic and social development. Relationship based lending is affected by cultural and social context. Multiple case studies were applied for data collection from two small enterprises in Gothenburg, Sweden and a microfinance institution in Sweden. Qualitative data was collected in form of semi-structured interviews. Direct observation and documents were also used as data source. The study shows that microfinance contributes to development of sustainable enterprises and generates employment for people. The research shows that microfinance leads to sharing risk and financing projects in social enterprises, cooperative businesses and associations. It provides people with social networks, enhances their independence, empowers them and improves the quality of their life by generating incomes. It is important for the microfinance institutions to get recognition as important actors in the financial sector to succeed. The research contributes to the literature and theories of microfinances by developing a model about microfinances in developed countries. The limitation of the study is that we had studied only two small enterprises in a developed country. We suggest comparative studies on the influence of microfinance on business development and women empowerment between emerging economies and developed countries or between developed countries.

Keywords – Social enterprises, microfinances, microcredits, empowerment, Micro Fund, Sweden.

REFERENCES

Antecedents of Customer Satisfaction in the Restaurant Industry

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Paper ID: ICBM-19-0320

Abstract – The report has been based on the current customer satisfaction level in restaurants in Dhaka after conducting proper research on the respective topic. One of the objectives of the research is to realize any potential shortcomings in the restaurants service in relation to customer expectations and offer possible solutions and recommendations towards servicing their customers better. The focal points of the research are studying the quality levels of the restaurants food quality, responsiveness, price and ambiance, and how they all affect customer satisfaction. The study will also be useful for the customers in order to get an overall understanding of the service quality of the restaurants in Dhaka. This is chosen as the research topic, since the number of restaurants are increasing in Dhaka, this research can point out shortcomings if any, which further can help the restaurant authority to understand their lacking and also help customers know about the quality of service they possibly will be getting in the restaurants in Dhaka. This research paper and its findings will prove beneficial to all stakeholders, as well as their customers, and any other restaurant in the country.
Regional Maritime Connectivity of Bangladesh: A Discussion of the Barriers

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Abstract – In the globalized world, connectivity is the crucial determinant for competitiveness, inclusive and cohesive trade facilitation. Connectivity can be obtained by sea, inland waterways, rail, road, pipeline or air. Maritime connectivity or maritime transportation is very important for international trade as because 90% of the total world trade is being fulfilled by sea. The main reason for increasing the transportation of goods by water is cheaper rate, great volume in a single move, safe and secure transportation. Geographically Bangladesh is a maritime nation. The location of Bay of Bengal makes it more attractive for the international traders. Bangladesh has a total length of 24000 km inland waterways which also has a greater connectivity with the neighboring country. So, it has a great opportunity to establish a maritime connectivity network within our regions and neighboring states. A well-established maritime connectivity network may increase the trade facilitation of Bangladesh with neighboring states in South Asia especially with India. The regional trade in South Asia among the poorest compare to the other regional countries. Among other connectivity is certainly one of the crucial bottleneck hindering the trade among South Asian countries. The main objectives of this paper are to review the existing maritime regional connectivity of and identify the barriers to set up effective and efficient maritime connectivity within this region with a particular focus on Bangladesh. In doing so an extensive review of the literature has been conducted along with personal interviews of key personnel of different government agencies and stakeholders. The significance of this study is to understand the bottlenecks of building a strong maritime regional connectivity with the neighboring states of Bangladesh as well as with the south Asian countries. The stakeholders will understand the area of developments to facilitate a established maritime connectivity that would foster our bilateral trade with neighboring states and in national economy. This study conceptualizes the major barriers for regional maritime connectivity of Bangladesh. Identified barriers are shortage of national flag vessel, lack of co-ordination among the policy makers, selection of appropriate mode of transportation and trade deficit with India.

Keywords – Regional Connectivity, Maritime Connectivity, Barriers
An Overview of the ‘Port Reception Facilities’ in the Ports of Bangladesh

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Abstract – Environment has become the most important issue for today’s world. Ocean is one of the most important elements, and it is necessary to keep the environment healthy for us and also for our future generation. Ship is considered as the source of ocean pollution. To make the sea safe and clean, IMO adopted MARPOL 73/78 and under this convention it’s mandatory to establish ‘shore reception facilities’ for all its parties. Because of low freight, environment friendly and safety, mass capacity, maritime transport is the most popular mode. Large percentage of export-import is transported by sea. Being a ‘MARPOL’ ratified country, Bangladesh is obliged to provide adequate reception facilities at her port. The purpose of this study is to understand the status of the reception facilities of the ports of Bangladesh. As Chottagram port is the largest sea port of Bangladesh, where 92% of total export-import is transported, the study was conducted on this port. The overall cargo throughput of the port is increasing exponentially leading towards an increase in the number of call of ships. Around 3000 ships every year call the port which is obviously generating huge amount of waste. The competency of the facilities offered by the port in the aspect of an environment friendly and global standard have been examine in this paper. In doing so an in depth review of the existing literatures have been conducted. Moreover, discussion with the port officials involved in the operation of the reception activities have also been done to understand the present situation of the reception facilities there as well as how far we are lacking behind in comparison to global standard. The significance of the study is very much related with the health of the Bay of Bangle.

Keywords – Port reception facilities, MARPOL, Environment, Waste Management.
A Study on Training Need Assessment

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Abstract – Training Need Assessment is crucial factor for professionals. In our professional lives we need more knowledge and skills in addition to academic degrees. Academic qualification and backgrounds is not enough for today’s fast changing business environment. Moreover continuous development in terms of training, exposure visits and experiential learning are needed for professionals to be successful today. If an organization attempts to design suitable training for the professional of today; they need to understand what type of training is required by the industries and sectors dominant in the economy. Therefore Training Needs Assessment is the first stage of any training design process. This study illustrates training need assessment based on the primary and secondary data. Training can be described as “the acquisition of skills, concepts or attitudes that result in improved performance within the job environment”. Training needs analysis looks at each aspect of an operational domain so that the initial skills, concepts and attitudes of the human elements of a system can be effectively identified and appropriate training can be specified. Training helps to improve employee performance, consistency, employee satisfaction, increased productivity and adherence to quality standards, increased innovation for new strategies and products, enhances company reputation and personal profile. It helps to reduces gaps between professional skills and the skills required by the job and department. Therefore the purpose of this study to identify training programs which are most suitable for professionals in advance academic courses like Masters, MBA, EMBA etc. The data for this research work will be gathered from primary sources to elicit information from professional respondents. The primary data will be collected through a well-structured questionnaire filled in by at least one hundred respondents. Secondary data will be composed from different research paper. This paper will focus on various aspects of Training Need Assessment like what type of professionals need training, in which sectors and functions professionals need more training, preferred duration, cost, time and location of professional training and also seek suggestions from them to better design training interventions for the prospective trainees. From this primary survey we would explore a proper idea about training needs for the various types of professionals.
Acceptance of ERP & SAP Technology to Improve Internal Control System of a Bangladeshi Organization

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Abstract – In today’s frequently changing environment, the need for robust operational processes, regulatory compliance and effective risk management keeps increasing rapidly. This paper tries to investigate the use of Enterprise Resource Planning (ERP) and Systems Applications and Products (SAP) technologies that provide efficient and effective internal control systems of an organization. This study draws upon mostly on secondary sources including authorized websites, published letters, online reviews and interviews from organizations that are already using the ERP & SAP technologies. This paper utilized qualitative method to know the user experience and the usefulness of ERP & SAP and quantitative method is used for the statistical analysis of data. The findings of this paper demonstrate how ERP and SAP can improve quality and efficiency of the business. By keeping a company’s internal business processes running effortlessly, ERP and SAP being unified management of core business process habitually in real time can lead to better outputs that may benefit the company, such as in customer service and manufacturing and compliance with Sarbanes-Oxley Act.

Keywords – Internal Control System, Sarbanes-Oxley Act, ERP, SAP
Tourism and Energy Nexus in South Asia: A Panel Study

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Abstract – The aim of the paper is to analyze the relationship between tourism and energy for the South Asian countries using the standard econometric methodology by incorporating a panel data set covering from 1995-2015. Panel unit root test confirms that all concerned variables are stationary at first differenced form. For long-run analysis, we have used Johansen-Fisher Cointegration test which confirms the existence of a long-run relationship among our variables of interest. Dumitrescu-Hurlin (2012) panel causality test results show that a unidirectional causality is running from tourism to energy consumption in the long run which then ultimately affects the economic growth as well. As South Asian countries are growing at a rapid pace, our results would help policymakers to build up proper combinations of policies to achieve the overall development of the nations for upcoming decades.

Keywords – Energy, Economic Prosperity, Panel Cointegration, Panel Causality, Tourism
Crony Group: An Unstoppable Journey for Success in RMG Sector

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Abstract – Despite the recent setback after the Rana Plaza collapse and Tazreen Garments fire, the textile and garments industry in Bangladesh has regained its strong footing. Starting with only a single buyer in 1978, the industry has since transformed into a multi-billion dollar business employing over 4 million people. Aided by cheap labor and conducive government policies, Bangladesh exported over $24B worth of garments in 2015 and the value is expected to increase this year too. This case covers the growth of one such factory – the Crony Group – which now exports over $100M worth garments annually and employs 12,000 people. While the future of the industry is bright, business owners are now looking at investments abroad to allow an entry into wider markets and grow their businesses. The case also covers the condition of the garments industry in USA and China, and their prospects in light of trade and government regulations.
Comparative Analysis on the Effectiveness of Public Private Partnership (PPP) Framework in Bangladesh

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Abstract — The objective of the report is to understand the effectiveness of the Bangladesh’s PPP framework in terms of project implementation, formulation of policy related to projects, how exactly PPP contributing towards the vision 2021 Bangladesh and contribution towards the countrymen comparing to the other developing country like Philippines. Setting out a number of guidelines, policy, SRO’s and a very healthy project pipeline for the country how it is really helping the country to reach its goal by the mentioned time to become a developed country set out by the government of Bangladesh. Following that, PPP has already achieved the heart of the stakeholders as well as captured the local people mind within a very low amount of time and become the leading support to the ministries to implement their project for the country. This paper has given a background which describes the overall content of the research. After that a short overview of PPP Authority, Bangladesh that includes the historical background, vision, mission etc. of PPP Authority, Bangladesh. Later on the project part will commence. In that part we tried to showcase the general activities of PPP Authority, Bangladesh as well as Philippines.

Keywords — Framework, PPP Bangladesh, PPP Projects PPP Philippines, Sustainable Development Goal, PPP, Public-Private Partnership
Securitization Market Development of Bangladesh

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Abstract – Securitization of non-performing loans is a special form of asset securitization and is the securitization of the non-performing loans that have had or are likely to have problems with their liquidity and earnings Yin (2005). Some emerging market is planning to develop this financial instrument and initiate a securitization market. It is assumed that the NPL securitization will remove the bad loans from the Balance Sheet and improve the liquidity of banks. This research work focus on the development of securitization market in Bangladesh by issuing the securities based on NPL. The study also focuses on global securitization market development in case of NPL securitization. Moreover, the study proposes a model of NPL securitization and proposes some theoretical points to consider for the development of NPL securitization market in Bangladesh. Finally, the paper discusses on some policy reformation to develop the securitization market in Bangladesh.

Keywords – Bangladesh Securitization Market, Chinese Securitization Market, NPL Securitization, NPL Securitization market development, ABS
Consumer Behavior Analysis of Pharmaceutical Products and the Underlying Factors that Influence It

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Abstract – This paper is based on the consumer behavior of people who visit and purchase products from pharmacies and the results of said behavior. These findings can help us further understand the mind of the consumer and also help deliver products targeted towards these consumers and therefore improve sales and customer satisfaction. The affected individual usually visits the pharmacy or if the condition is severe then friends or family members are the ones to come. The income range of consumers is indefinite as all people need medicine. Generally, people like to go to the pharmacy to get medical advice on minor ailments and diseases rather than going to doctors and specialists. They tend to take the medicine given to them from the people at the pharmacy. There are many cases where they do not follow the proper dosage and even stop consuming the medicine if they start feeling a little better or if they feel it is a financial hassle. Customers even have preferences when going to buy certain products and behave differently based on their current situation. But these preferences are mainly shaped by the influence of the physicians that they visit. They advise and persuade their patients to purchase from renowned brands and avoid others because there may be quality differences or the physicians may have been endorsed by those companies. Therefore, these insights can help us to gain further information on the habits of these consumers and help us understand their needs.
Volunteer Education Program for Underprivileged Children

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Paper ID: ICBM-19-1073

Abstract – The future of every nation are the children and every child should have the right to proper education. But when it comes to the children in our country, not everyone gets their fair share of learning. Social issues starting from child labor and financial issues to the sheer lack of availability of resources and institutions have lead the underprivileged children to illiteracy. The aim of our project is to combat these social issues and provide every child with the gift of learning. The project begins with rallying enthusiastic tutors from all over the country, mainly university students and specifying learning centers in their respective universities. The students will be volunteers and will teach free of cost and will teach like home tutors. Representative students as well as faculty members and authorities from the participating universities will form a committee and help monitor and govern all activities. By providing such meaningful services, we hope to drastically reduce illiteracy and provide quality education to these children and ensure a bright future for our people and our nation.
Development and Accounting Significance of Enterprise Resource Planning Systems in Business Growth

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Abstract – In this competitive corporate environment, businesses are becoming more efficient in data management and processing. Greater understanding within the stakeholders are helping the organizations attain higher growth and eventually their accountability is becoming more transparent. Therefore, it is high time for organizations to thoroughly develop their ERP systems. Enterprise Resource Planning (ERP) systems have been a very crucial player in the advancement of business and making the work flow more efficient every day. To develop a suitable ERP model for an individual company there are factors like firm size, industry category, ownership criteria and time span that could highly contribute in shaping the ERP model. Steps like – organizational goals determination, business flow design, demo creation and follow up are very basic in formulating an ERP model. In Accounting the significance of ERP systems has been very influential for documentation and decision making. An overview of this ERP system development and its accounting implication have been reflected in this paper.
Sustenance Wellbeing and Hygiene of Private University Students
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Paper ID: ICBM-19-1113

Abstract – Ensuring hygienic nourishment in an affordable price in the private university surroundings for the students. Absence of sustenance cleanliness can prompt food-borne illnesses. In our study, we guarantee the wellbeing of sustenance in an affordable rate for the students. We chose private universities because the government does not dictate their sustenance spending plan; so, the authority can guarantee clean nourishment for their students with minimal cost. We selected descriptive data method to collect information. We designed a questionnaire with 20 questions and derive our data from five private universities. The practice of consuming unhygienic street food increases due to cheaper price which causes of many fatal food diseases. The study provided sufficient information for a better understanding of the importance of student hygiene while also increasing awareness about the awful impacts of unhygienic nourishments.
The Impact on WhatsApp Acquisitions by Facebook

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Paper ID: ICBM-19-1117

Abstract – This study covers the research on the topic of mergers and acquisitions. In this report, the impact after an acquisition of WhatsApp by Facebook is our object for this research. Our method to collect the data is from secondary data which is sources from online article and journals to obtain the information and data needed to complete this report. The social network has experienced a huge growth in recent years. Social network offers a lot of space for freedom, allowing users to instantly share personal and multimedia information to their friends on social networks. Social network services are changing the way we communicate with friends, the nature of entertainment, and the actual activities. Social networking is one of the main reasons why many people are passionate about the Internet, and until the advent of social networking, people finally can find interest on the Internet. Facebook is one of the most visited sites in the world with over 500 million users so far. Since the beginning of the popularity of smartphones, many messaging services have been introduced, WhatsApp also has been introduced. WhatsApp is becoming more popular and famous because of free charge of use and ads-free. In February 2014, Facebook acquired WhatsApp for $19 billion. When critics and investor have doubts about the price paid, Facebook saw tremendous value in this deal. So the purpose of this report is to further explore the challenge and explain the VRIO framework of acquiring WhatsApp from Facebook, studying the motives behind this M&A and define the impact of Facebook acquiring WhatsApp. So, we can more deepen our understanding of the topic which is merger and acquisitions regarding this big deal. In addition, this report also included our conclusion on this topic and the suggestion to the future development of Facebook.

Keywords – Mergers and Acquisitions, Social network, Smartphones, Facebook, WhatsApp, Challenge, VRIO framework, Motives, Impact.
Changing Reforms - Increasing Productivity with Employee Engagement in Banking Sector

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Paper ID: ICBM-19-1153

Abstract – Country does not mean land but people. Since ages business means to attain profits from factors of production function in which labor is evaluated quantitatively in terms of profitability only. The liberalization, privatization and globalization has resulted in a highly competitive business world which has identified two important components of business called the employee and the customer. The metric of measuring the success of any organization has transformed from profits to how many committed employees are there and what is the customer base which ends in sustainable, productive growth of an organization. This paper highlights the element of employee engagement in banking sector which has shown drastic improvement in increasing the profitability. The study is based on secondary and primary data. Secondary data aided for understanding productivity.

Employees perceptions are collected through questionnaires from 35 public sector banks where in 125 completed responses of employees. Further the data has been analyzed using SPSS software. Paired t-test is applied to bring out the comparison between pre and post reform periods to analyze the productivity component. For analyzing employee perceptions weighted scores and average scores are calculated which are further ranked to understand the employee engagement. The findings of the study showed that though the number employees decreased but attained high level of productivity and profitability along with increased levels of satisfaction of employees in the banking sector.

Lake Fashion Castle: A Walk to Rejuvenation

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Paper ID: ICBM-19-1161

Abstract – Lake Fashion Castle is a leading clothing garment factory which is located in Chittagong and was established in 1990. In the beginning, they had a very good startup and they were the market leaders. But in 2006-2007, they lost their business position due to controlling problems. The factory’s production and profit started to plummet day by day. The owner and the CEO planned to discover the problems sector-wise and found that skilled workers had not been recruited by the recruiting personnel. They also discovered that confidential information had been leaked out by some of their employees. They sacked those employees who were involved in the scam. They planned to recruit experienced supervisors and operators with minimum experience of 5-6 years with HSC certificate. They gave fresh graduates opportunities to show their talents by introducing new ideas and techniques and thus boosting the production and profit. The authority also introduced new rules and regulations and ensured strict observance. They maintained backup employees for uninterrupted operation while some employees were on leave. Moreover, entry level employees should put thumbprints while entering and leaving the office. They also kept drugs and alcohol away from the factory. After proper monitoring and controlling they overcame their failure and became successful.
Environmental Sustainability Practices of Palm Oil Millers

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Abstract – Considering the global production level, palm oil can be identified as the second largest oil which can be categorized as vegetable oil. Palm oil is a natural resource that is favourable for the climate in Malaysia. In 2017, Malaysia had a total of 454 palm oil mills with a production capacity of approximately 112 million tonnes of fresh fruit bunches (FFB). A sustainable environment denotes high income, value addition, and zero waste. Nonetheless, palm oil mills are being associated with the discharge of untreated effluent water stream pollution, solid wastes, and air pollution etc. The important objective of this study is to measure the level of sustainable environmental practices parameters and awareness of millers. The primary data were collected through questionnaire survey and interviews from 71 millers in Malaysia. This study used Confirmatory Factor Analysis (CFA) to describe the relationships between the environmental parameters for measuring environment sustainability. This study found that most of the millers employ positive practices for environmental sustainability and the highest environment parameter is disposal of solid wastes. However, this study can be implemented in Malaysian palm oil mills (POMs) for identifying the lowest parameters. This study suggested to the industries that the new national sustainable policies for palm oil mills especially for small and medium players may enhance the environmental parameters.
Thunderstorm Removes AOD/T in Atmosphere

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Paper ID: ICBM-19-0254

Abstract – The study of aerosol and after a Thunderstorm (TD) event over Bangladesh there is no AOD/T (Aerosol Optical Depth/Thickness). Especially the dark target/carbon particle/red area is missing after a TD event. The TD is removing AOD/T from Atmosphere because after rain and wind storm AOD/T remain same. Also particle in atmosphere is increasing for regular urban activities, communication, fuel & many. This is like depositing everyday with more aerosol. Now after TD events the surveillance (Satellite Instruments- MODIS, OLI) confirming AOD/T removes from atmosphere over Bangladesh.
Teen Entrepreneurship: Successfully Implementation can be the change maker of the youth employment & productivity in Bangladesh.

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Paper ID: ICBM-19-1049

Abstract – This report examines the foreseeable impact on youth employment and productivity regarding teen entrepreneurship. The enhancement of the economy can be done by executing the teenagers as an entrepreneur. Bolton and Thompson (2000) defined an entrepreneur as “a person who habitually creates and innovates to build something of recognized value around perceived opportunities”. Teenagers are full of optimism and resilient. If we create a pathway of learning for teens as entrepreneurs, they will bolster the nation’s prosperity in the socio economy. Becoming an entrepreneur at an early age is a challenge. But several example proved its possibilities as the teenage entrepreneurs like Noa Mintz (Founder of Nannies by Noa), George Matus (Founder of TEAL), Mozia Bridges (Mo’s Bow), Rachel Zietz (Founder of Gladiator Lacrosse) and many others. They tried to make them as a business owner while still being in school. Contending with exams, social anxieties and the inflexibilities of adolescence are all challenging enough, but creating, developing and managed a viable company on top of it. Different countries across the world, like the USA, Denmark, Norway, the UK as well as Australia, have the rising number of teen entrepreneurs. In Bangladesh, family pressure, situational influence, cultural barriers are the main challenges of being a teen entrepreneur. But, if we see the potential outcome of being an entrepreneur from teenage as like self-financing, being busy with productive work that might help them to abstain themselves from antisocial activities. In this country moreover 30\% of the total population is teenagers, and if we raise these teenagers as entrepreneurs, per capita income as well as the employment rate will touch the potential level. The study was employed from web research as well as from consultation with professors from home and abroad. The ultimate benefit is not only the youth employment and per capita income of the country but also the rising prestige and self-esteem of the teenagers.
Abstract – Regardless of being one of the best equal paying countries in terms of gender it is truly perplexing how Bangladesh stands in line with Pakistan, Nigeria for being one of the largest financial inclusion gaps among men and women in the world. Even though the digital finance services have hit roof only 18% (UNCDF, Gender Centrality of MFS in Bangladesh- Consumer Behavior Research, 2018) their registered users are women, the rural percentage being much lower than the urban. This is undoubtedly a blow to our overall economic growth given Bangladesh has long been a success story of women’s financial inclusion. Investing in financial innovations that work with existing informal networks in ways that enhance their benefits and reduce risk can help millions of women attain greater financial security and access other financial services including insurance, mobile banking services, and others.
Abstract – If you have ever paid something with your phone, transferred money using app or checked your bank statement online, then you are already part of FinTech. Today technology has changed the financial industry and FinTech is simply a combination of the words “financial” and “technology” which is making easier the use of technology to deliver financial services and products to consumers. The rise of FinTech in recent years has rapidly changed the way companies do business, insurance, banking, investing – anything that relates to finance. It points out everything from robe-advisors, to virtual currencies, to cashless payments, to cloud funding platforms. Transferring money to someone using bKash is an example of FinTech. Companies are trying to change disrupt banking and finance industries by changing the way we borrow and pay money. Customers are adopting FinTech so fast. The potential market for the user of FinTech service is very broad and mainly all of the adult community of planet. Our country has a large younger population who can adopt technology faster and potentially become avid users of FinTech. The mobile subscription density of the country is at an all-time high, thereby reducing the last mile connectivity challenge. Macroeconomic growth factors are also favorable to catalyze the joining of more people into the formal financial services network. With encouragements from the regulators, the financial services institutions of Bangladesh should embrace and adopt FinTech in their transformation journey.
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