I am delighted to note that BRAC Business School (BBS) of BRAC University is organizing the first International Conference on Business and Management (ICBM 2017) which is scheduled on September 21-22, 2017.

I believe that the ICBM 2017 will encourage the participants from academics, research and industries in the field of business and management. Our aim is to discover and promote visionaries, ones who dream and are looking to propel themselves in the direction of excellence and success in the world of academics.

It is scheduled to be a two-day program in order to accumulate the large number of participants from different parts of the globe, particularly Singapore, Malaysia, Thailand, China, India, Pakistan, USA, and so on. I believe that international exposure is something that is still developing in Bangladesh for the academic enthusiasts’ present and this platform is only the beginning for a lot of the respective participants, who will go on to achieve great things in their bright futures.

The keynote speakers of this conference, Prof. Dr. Mark Goh (Singapore), Prof. Dr. Premkumar Rajagopal (Malaysia), Dr. Pairach Piboonrungroj (Thailand), are highly appreciable. I am proud to be able to confidently announce that the papers we receive in this conference will be a massive opportunity for us to gather valuable research information that will no doubt contribute to the world of business for years to come.

I would also like to extend my gratitude to the organizers who have worked so hard in putting together an international conference of such a high magnitude and would like to give them my best wishes and hope that they can achieve a successful conference.
Greetings!

On behalf of the ICBM 2017 Organizing Committee, we welcome you to the 1st International Conference on Business and Management (ICBM 2017) at The Westin on Sept. 21-22 in Dhaka, Bangladesh.

ICBM 2017 intends to provide a platform for academics, researchers, scientists, scholars and students from the universities all around the world and the industry to present new research, exchange new ideas and experiences, and discuss current issues related to business and management. All the conference papers will be published in the Conference Proceedings which has ISBN No 978-984-34-2360-3. Furthermore, we expect selected papers to be published in international peer-reviewed and Scopus-listed journals.

We would like to thank the reviewers and members of the international technical committee and the organizing committee for their assistance. We are very grateful to all the authors and session chairs for contributing actively to this conference. We also acknowledge the members of the student committee, the student tutors and the student volunteers for their assistance.

We are extremely thankful to our platinum sponsor - BRAC Bank; Gold Sponsors - First Security Islamic Bank; Silver Sponsors - United Commercial Bank, BBS-Cables, Abdul Monem Ltd. and others supporting sponsors: Islami Bank Bangladesh Ltd., Dhaka Bank, IDLC Finance Ltd., Aarong, Bkash, for extending financial support to ICBM 2017.

Hope you have a wonderful conference experience, sharing new ideas and enhancing prospects of furthering your research goals.

With best wishes,

Prof. Dr. Syed SaadAndaleeb
Honorary General Chair, ICBM 2017

Prof. Dr. Iftekhar Ghani Chowdhury
General Chair, ICBM 2017

Assoc. Prof. Dr. Md. Mamun Habib
Program Chair, ICBM 2017
Emerging Technologies, Global Contemporary Practices in Business, and Supply Chain Management: What Do They Have in Common?

We will look at a few new developments in this decade. First, there is the domain of emerging technologies which will clearly influence the conduct of business and the supply chain on a global scale. In this regard, we will visit the platform of deep / machine learning in which the new breakthroughs in artificial intelligence especially those of convolutional neural networks will pave the way for driverless but safe trucking on the notorious highways in Asia. The prevalent use of computer vision systems that can capture digitized images reliably and analyze them quickly through deep learning will move supply chain management into a brand new knowledge driven and technology intensive game. At the same time, artificial photosynthesis through metabolically engineered bacteria can be used to power up the engines of transport equipment for business and the supply chain. Once this development reaches commercial scale, it will modify the way firms report their current sustainability practices and transform the interpretation of green supply chain management, in particular when it is coupled with the new fuel cell catalysts, hopefully creating smart vehicles that exhaust no carbon. Third, the use of smart sensors and real-data analytics (e.g. Musang) to rapidly make sense of terabyte data bits can serve to make better precision and prediction of customer demand and identify accurately the hotspots in industry and the business environment. Next, we explore how the gig economy or sharing economy will alter the business landscape for better or for worse. Through the sharing economy and e-Commerce, the economics of business practices will be such that the assets (transporters, equipments, offices) and services (warehousing, invoicing, goods returns) will be shared between individuals either pro bono or for a small sum. These activities will increasingly be conducted through the high speed internet medium. As for the gig economy, business professionals and logisticians may soon see themselves replaced with service robots and autonomous machines, with the growing prevalence of B2C e-Commerce, the harsh reality may be that short term contracts and freelance work will become the new normal moving forward. This essentially points to more frequent last minute scheduling of the workforce and of logistics orders from a business perspective, and of greater spikes in customer demand.
Keynote Presentations

Thu- 21 September, 11:00 am to 11:45 am

Prof. Dr. Premkumar Rajagopal
Vice Chancellor
Malaysia University of Science & Technology (MUST), Malaysia

Industry 4.0 and Supply Chain Responsiveness

The 4th industrial revolution - characterized by the increasing digitization and integration of products, supply chains and business models - has arrived in the industrial sector and offers attractive business opportunities. Industry 4.0 not only comprises the digitization of horizontal and vertical value chains but will also revolutionize company product and service portfolios that lead to the implementation of new, often innovative business models. This industrial wave includes technologies like virtual and augmented reality, the Internet of Things, the cloud, 3-D printing, autonomous robotics, cyber security, advanced materials, big data and AI. What companies need now to stay competitive is comprehensive understanding of the Industry 4.0 with deliberate speed, so that they don’t lose the first-mover advantage to competitors. Next building flexibility and scalability that digital technologies can enable is important for the business. With industry 4.0 driven strategy companies unlock their supply chain to be an engine for growth, enabling quick movement into new geographies, supporting new value-delivery approaches, and creating new products and services.
Globalization or Deglobalization? : A Supply Chain Perspective

Globalization was a hot topic after the World War II and Washington consensus. From that period, the world order is centered around the global issues such as free trade, multinational enterprises and privatization. The world economy enjoyed the economic growth and wealth generated. To gain the most benefits of globalization, supply chain management techniques like global sourcing and supply chain strategies were popularized. Such renaissance has seen the peak and seems to be inclined recently. Economic recessions and fluctuations cause trouble for as many countries as of those who used to enjoy the bright side globalization. When it turns out to have the dark side of the full moon, so called globalization, some nations cannot survive and had suffer from the economic down fall.

Whilst the old economic power like the United States of America and the European Union are in the trouble, the new economic power like the BRICS (Brazil, Russia, India, China and South Africa) seems to enjoy the globalization. Then it comes the new clash of globalization fan and those who against it. Evidences are revealed in the election of a few but influential nations like the United Kingdom and the US. Hence the world order seems to be shuffled in an ambiguity way. The big question for governments (public sector) and companies (private sector) is that “Should we go for globalization or Should we go for deglobalization or be a protectionist?”. This keynote aims to discuss the cause of this debates and arguments from the lens of supply chain.
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<table>
<thead>
<tr>
<th>SERIAL</th>
<th>ID</th>
<th>TITLE</th>
<th>AUTHOR</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>431</td>
<td>4Es: A Normative Model for Growth of Social Enterprise</td>
<td>Syed S. Andaleeb, Balram Bhushan, Sadhana Shukla</td>
<td>1-8</td>
</tr>
<tr>
<td>2</td>
<td>400</td>
<td>Analysis of the Total Economy of Bangladesh in the Context of GDP</td>
<td>Mohammad Rafiqul Islam and Rafiur Rahman Bhuiyan</td>
<td>9-14</td>
</tr>
<tr>
<td>5</td>
<td>335</td>
<td>Factors Affecting Customer Satisfaction of Islamic and Conventional Banking: A Case Study of Bangladesh</td>
<td>Bohi Shajahan and Suborna Khandoker</td>
<td>24-29</td>
</tr>
<tr>
<td>6</td>
<td>265</td>
<td>Women Development Through Traditional and Islamic Microfinance : A Comparative Review</td>
<td>Bohi Shajahan and Shamsunnahar Khanam</td>
<td>30-36</td>
</tr>
<tr>
<td>7</td>
<td>178</td>
<td>Determinants of Problem Loan and its Effect on the Financial Health: Evidence from Private Commercial Banks of Bangladesh</td>
<td>Afroza Parvin</td>
<td>37-41</td>
</tr>
<tr>
<td>9</td>
<td>397</td>
<td>The Trends of Export and its Consequences to the GDP of Bangladesh</td>
<td>Mohammad Rafiqul Islam and Mohaiminul Haque</td>
<td>47-52</td>
</tr>
<tr>
<td>10</td>
<td>419</td>
<td>The Trends of Import and its Contribution to the Economy of Bangladesh</td>
<td>Mohammad Rafiqul Islam, Daniel Mahbub and Shahida Najnin Proma</td>
<td>53-57</td>
</tr>
<tr>
<td>11</td>
<td>197</td>
<td>Context of Tobacco Packaging in Bangladesh: Regulatory and Consumer perspective</td>
<td>SyedaTahrima Yesmin and Md. Tamzidul Islam</td>
<td>58-66</td>
</tr>
<tr>
<td>12</td>
<td>262</td>
<td>Necessity and Potentiality of a Deep Sea Port in Bangladesh</td>
<td>MD Akramuzzaman Shaikh, MD Khodadad Islam and Md. Mamun Habib</td>
<td>67-73</td>
</tr>
<tr>
<td>13</td>
<td>258</td>
<td>Unique Promotional Strategy for Sustainability of Community Based Tourism (CBT)</td>
<td>Joydeep Mukherjee and Sharmistha Banerjee</td>
<td>74-78</td>
</tr>
<tr>
<td>14</td>
<td>344</td>
<td>An Inter Services Comparative Study on Job Satisfaction in Bangladesh: Application of Discriminant Function Analysis and Structural Equation Modeling</td>
<td>S. Nigar, M. M. Hasan and M. Tauhidul</td>
<td>79-84</td>
</tr>
<tr>
<td>15</td>
<td>477</td>
<td>Family Problem Leading to Absenteeism in the Workplace in Bangladesh</td>
<td>Rifayat Rahman and Zaheed Husein and Mohammad Al-Din</td>
<td>85-88</td>
</tr>
<tr>
<td>16</td>
<td>395</td>
<td>Vegetables Spoilage Rate in Bangladesh: How Actors of Supply Chain Affect it</td>
<td>Md. Hasan Maksud Chowdhury</td>
<td>89-94</td>
</tr>
<tr>
<td>17</td>
<td>299</td>
<td>Ergonomic to Design Safe and Comfort Work Stations for Garment Workers: Bangladesh Perspective</td>
<td>Faruk Ahmed</td>
<td>95-100</td>
</tr>
<tr>
<td>18</td>
<td>285</td>
<td>Factors Influencing Audit Workplace Behavior: Bangladesh Perspective</td>
<td>S. P. Chowdhury, A. Haque and A. Chakravarty</td>
<td>101-106</td>
</tr>
<tr>
<td>19</td>
<td>300</td>
<td>Recruitment Process Outsourcing from Bangladesh: A Case Study</td>
<td>J. Acharyya and R. Ahmed</td>
<td>107-111</td>
</tr>
<tr>
<td>21</td>
<td>330</td>
<td>The Paradigm of Green Microfinance: Implications of Triple Bottom Line Concept in a Developing Country</td>
<td>Tashina Khan and Shamsunnahar khanam</td>
<td>118-122</td>
</tr>
<tr>
<td>22</td>
<td>333</td>
<td>Factors Influencing Empowerment of Employed Women: A Case Study on RMG Sector of Bangladesh.</td>
<td>Samia Shabnaz and Bohi Shajahan</td>
<td>123-128</td>
</tr>
<tr>
<td>23</td>
<td>371</td>
<td>Perceptions of University Students on Building Brand Loyalty through CSR Engagement</td>
<td>S.M.M. Hasan and I.R. Khan</td>
<td>129-137</td>
</tr>
<tr>
<td>24</td>
<td>386</td>
<td>Consumer Acceptance of Squid in Bangladesh Market</td>
<td>J. Acharyya and R. Ahmed</td>
<td>138-142</td>
</tr>
<tr>
<td>Page</td>
<td>Title</td>
<td>Authors</td>
<td>Page Numbers</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Web Usability: A Study on Websites of Private Universities of Bangladesh</td>
<td>T. Tahsin and N. H. Chowdhury</td>
<td>143-149</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Using Data Mining Technologies in Increasing Efficiency of Garments Manufacturing Processes in Bangladesh</td>
<td>T. Tahsin and Mohammad N. H. Chowdhury</td>
<td>150-157</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Application of Knowledge Management in Garments Manufacturing Industry in Bangladesh</td>
<td>T. Tahsin and Mohammad N. H. Chowdhury</td>
<td>158-168</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Smart Health Management System for Rural Area of Bangladesh Utilizing Smartphone and NID</td>
<td>Nazia Hassan, Humayun Rashid and Remon Das</td>
<td>191-194</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Inter-Professional Collaboration in Healthcare Management: Inter-Professional Teamwork Constructs</td>
<td>Naffisah Mohd Hassan, Sharifah Naziha, Syed Kholed and Siti Noorsuriani Ma'on</td>
<td>195-200</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Causes of Occupational Stress Among Faculty Members: Case Study of a University in Bangladesh</td>
<td>Faabih Khan and Humaira Naznin</td>
<td>207-211</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>My Knowledge is not Enough: An Investigation on the Impact of Threat of Professional Obsolescence on Turn Away Intention Among IT Professionals in Bangladesh</td>
<td>Shohel Arman, Imran Mahmud, T. Ramayah, Tapushe Rabaya and Shahrriar Rawshon</td>
<td>212-215</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Place Placement Plays Vital Role in Tourism of Bangladesh</td>
<td>R. Akhter and M. Syeeduzzam</td>
<td>216-220</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>SCM And Sustainability: Adjourning Incorporation in Majority Study</td>
<td>Mahadi Hasan Miraz, Shamim Ahmed and A H M Yeaseen Chowdhury</td>
<td>221-226</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>The Capital Asset Pricing Model: A Theoretical Exploration</td>
<td>Debasish Dey, SyedaTahrimsa Yesmin and Riyashah Ahmed</td>
<td>227-230</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Understanding the Consumer Behavior and Shopping Preferences in Relation to Superstores in Bangladesh</td>
<td>Nazia Choudhury and Tazrian Shainam Shahid</td>
<td>236-239</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Trade Preferences For Bangladesh in the EU And U.S.A: A Drive towards Leverage of International Labor Standards Compliance in the Supply Chain of Ready-Made Garments Sector</td>
<td>Z. Akter</td>
<td>240-244</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Local Community Attitude and Support towards Tourism Development at Cox's Bazaar, Bangladesh</td>
<td>Shariful Alam, Dr. Md. Abdul Hai and Mohammad Masudur Rahman</td>
<td>245-254</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Persuade of Marketing Mix in Choosing Biological Products by Specialist Doctors in Bangladesh</td>
<td>Md. Abu Zafor Sadek and Syed Ferhat Anwar</td>
<td>255-260</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>MOTOR HOSPICE: A Guideline for Entrepreneurs to Invest at Motor Market of Bangladesh</td>
<td>M. S. Hossain and R.J. Hoque</td>
<td>261-265</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Prospect and Sustainability of Social Business in Bangladesh Context</td>
<td>Mohammad Faizul Haque</td>
<td>266-270</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Design and Implementation of an Automated Customer Relationship Management System</td>
<td>Soikat Dey, Muhammad Kamrul Hossain Patwary, Md. Harun Ur Rashid, Sheikh Mohammed Imran and Azmat Ullah</td>
<td>271-276</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>The Role of Bangladeshi Ports in Developing Integrated Intermodal Freight Transportation System in South Asia</td>
<td>Razon Chandra Saha</td>
<td>287-296</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Assessing SCM: A Procedure Based on a Theoretical Model</td>
<td>Mahadi Hasan Miraz, Ferdoush Saleheen and Md Mamun Habib</td>
<td>297-301</td>
<td></td>
</tr>
<tr>
<td>Page</td>
<td>Title</td>
<td>Authors</td>
<td>Start Line</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Performance Framework for Driving Results: How Seattle IT is Improving Performance using the Framework Approach</td>
<td>Aleya R. Ikbal</td>
<td>349</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Potential of Using Recycled Tires as High Valued Products for Economic Gains Considering SDG: Perspective from Bangladesh</td>
<td>S M Ferdouse Anower and Mr. Mushtaque Ahmed</td>
<td>455</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Why are They So Addicted?: Modeling Online Games Addiction Behavior Among University Students</td>
<td>T. Ramayah, T. Rabaya, S. Saparya, I. Mahmood and S. Rawshon</td>
<td>471</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>A Case Study on the Product Development of a New Beauty Bathing Soap Brand of ACI Limited</td>
<td>R. Akhter and N. Ishrat</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Factors Influencing Investment Decision and Portfolio Construction: A Dhaka Stock Exchange Perspective</td>
<td>D. Dey and R. Ahmed</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>A Study on the Impact of Risk and Competition on Bank Profitability in Bangladesh</td>
<td>AKM Mohsin</td>
<td>466</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>A Study on Bangladeshi Consumers’ Understanding of Returnable, Recyclable and Reusable (3R) Food Packaging</td>
<td>M. Faruquee, S. Jahan</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Why SMEs in Developing Countries should go International?: A Perspective of Affinity International Ltd.</td>
<td>M. F. Rifath, M. A. Ashif and M. S. S. A. Neeloy</td>
<td>363</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Exploring the Adoption Behavior of Technology Driven Services by the Rural Consumers in Bangladesh.</td>
<td>Md. Khaled Amin, Jinghua Li, Jahid Mollah, Md. Monjurul Islam and Mubasshir Tahmidul Karim</td>
<td>167</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Insights into Plastic Litter Collection and Recycling Practices in Bangladesh: A Qualitative Study</td>
<td>Mohammad Hanif and Mohammad Abdul Momen</td>
<td>495</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>The Effects of Liquidity Risk Management on Islamic Banks and Conventional Banks in Bangladesh: A Comparative Study</td>
<td>F. R Shampa</td>
<td>434</td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>Role of Non-medical Personnel in Customer Satisfaction: In Tertiary Healthcare Service in Bangladesh</td>
<td>Ghulam Shawkat Hossain and Mr. Mushtaque Ahmed</td>
<td>476</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>Corporate Image and Product Brand Identity Mix: Study on FMCG Companies in Bangladesh</td>
<td>Md. Moniruzzaman Khan, and Syed Ferhat Anwar</td>
<td>465</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Report on Environmental Accounting and Corporate Social Responsibility</td>
<td>A. Naoshin</td>
<td>269</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Study on Occupational Health Hazards of Selected Tea Gardens Workers in Sylhet, Bangladesh</td>
<td>Mohammad Iqbal, M.A. Karim and Md. Abdullah Abu Sayeed</td>
<td>166</td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>Present and Future Applications of Computer Technology for Learning and Education</td>
<td>Shahrin Iqbal, M. Iqbal</td>
<td>297</td>
<td></td>
</tr>
<tr>
<td>Page</td>
<td>Title</td>
<td>Authors</td>
<td>Pages</td>
<td></td>
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<td>------</td>
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<td></td>
</tr>
<tr>
<td>75</td>
<td>Considering Pros and Cons of Initial Public Offering (IPO): An Empirical Study on the IPOs of Dhaka Stock Exchange</td>
<td>S. S. Gomes, P. F. Quarishi, R. Ahmed</td>
<td>469-474</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>HER Project: Lessons From a Case Study</td>
<td>Mohammad Alam Tareque</td>
<td>475-479</td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>Determinants of CEO Remuneration in the Banking Sector of Bangladesh</td>
<td>S. P. Chowdhury, M. R. Ahmed</td>
<td>485-490</td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>Academia to Workplace: Soft Skills for Employability</td>
<td>M. S. Haque, S. Tohura</td>
<td>491-496</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>Drivers of Intellectual Capital Disclosure among listed Banks in Bangladesh</td>
<td>N. Mohammad, R. Hasan, M. F. Alam</td>
<td>512-517</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>Inclination of Profitable Organizations toward Corporate Social Responsibility (CSR) in Commercial Banking in Bangladesh</td>
<td>M. Anwar, S. Mallick</td>
<td>518-527</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Understanding the Major Determinants of Investment Behaviors of Small Investors in Bangladesh: A Survey of Dhaka Stock Exchange</td>
<td>Mahtab Faruqui, Mahmudul Haq</td>
<td>528-537</td>
<td></td>
</tr>
<tr>
<td>86</td>
<td>An Overview of Patterns and Trends of Graduation: A Case Study</td>
<td>Nazmus Sabeka</td>
<td>538-542</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>Factors Influencing a Woman to Maintain Work/Life Balance: An Empirical Study on Banking Industry in Bangladesh</td>
<td>Farhana Afroz</td>
<td>543-546</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>Optimal Inventory Control in Hybrid Manufacturing/Remanufacturing Systems with Deterioration, Defective and Disposal Items</td>
<td>M. A. Baten</td>
<td>547-556</td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>The Effects of Relationship Marketing on Firm Performance: Small and Medium Enterprises (SMEs) in Bangladesh</td>
<td>ASM. M. Hoque, Z. Bin Awang, Sumona S.</td>
<td>557-562</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>A Practical Study on Implementing Green Supply Chain in Printing Industry</td>
<td>S. B. Islam, M. N. Adnan, M. M. Habib</td>
<td>563-567</td>
<td></td>
</tr>
<tr>
<td>91</td>
<td>Factors Affecting the Adaptation of Online Shopping: A Study on Young Consumers in Dhaka City</td>
<td>H. Evan, R. Nanjiba, M. A. Ahad, S. S. Sanah</td>
<td>572-579</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>Investigating the Impact of Valuing Intangible Assets on Valuation Multiples</td>
<td>S. M. Fuad, J. A. Gomes</td>
<td>580-584</td>
<td></td>
</tr>
<tr>
<td>93</td>
<td>Big Data Analytic Applications in Tourism: A Bibliometric Study</td>
<td>Y. Tan, P. Piboonrungroj</td>
<td>585-590</td>
<td></td>
</tr>
<tr>
<td>94</td>
<td>Promoting Pedagogical Approaches in Business Education</td>
<td>M. Mamoon</td>
<td>591-594</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>The Use of RFID in an Academic Library: A Case Study of BRAC University</td>
<td>M. N. Uddin</td>
<td>595-599</td>
<td></td>
</tr>
<tr>
<td>96</td>
<td>Considering Pros and Cons of Initial Public Offering (IPO): An Empirical Study on the IPOs of Dhaka Stock Exchange</td>
<td>S. S. Gomes, P. F. Quarishi, R. Ahmed</td>
<td>600-605</td>
<td></td>
</tr>
<tr>
<td>97</td>
<td>Deficit Financing Leads to Crowding Out: Bangladesh Perspective</td>
<td>Fahim Abid Bin Ismail</td>
<td>606-609</td>
<td></td>
</tr>
<tr>
<td>Page</td>
<td>Start</td>
<td>Title</td>
<td>Author(s)</td>
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<td>------</td>
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<td>-------</td>
</tr>
<tr>
<td>98</td>
<td>498</td>
<td>Mutual Fund Valuation: Fair Value Pricing Practice in the Context of Bangladesh</td>
<td>Golam Shahria</td>
<td>610-617</td>
</tr>
<tr>
<td>99</td>
<td>260</td>
<td>Knowledge Management in the Hotel Sector: A Review of Knowledge Management Practice in General and in the Hotel Sector Specifically</td>
<td>C. Voegeli</td>
<td>618-630</td>
</tr>
<tr>
<td>100</td>
<td>247</td>
<td>The Roles of Religiosity, Health Consciousness, Attitude and Subjective Norms in Determining the Intention to Consume Halal Nutraceutical Products</td>
<td>E.S. Kassim, R. Hakimi, I. Osman</td>
<td>631-635</td>
</tr>
<tr>
<td>101</td>
<td>248</td>
<td>The Value of Ecosystem Services - a Review Highlighting the Coastal Systems of Bangladesh</td>
<td>M. N. Islam, M. M. Rahman</td>
<td>636-642</td>
</tr>
<tr>
<td>SERIAL ID</td>
<td>TITLE</td>
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<td>------</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Experts' review of Management Accounting curriculum at undergraduate level in Bangladesh</td>
<td>S. Hossain, I. H. Haque, R. R. Iqbal</td>
<td>643</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Developing a Logistics and Supply Chain Diagnostic Tool for Small and Medium Tourism Enterprises</td>
<td>P. Piboonrungroj</td>
<td>644</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Mediating Effect of Work Engagement on Perceived Organizational Support and Knowledge Sharing Behavior of Banking Employees in Bangladesh</td>
<td>S. Hasan</td>
<td>644</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>A study on the measuring the Impact of Special Industrial Zones (EPZs and SEZs) in Creating Employment</td>
<td>E. Ashraf, A. A. Choudhury</td>
<td>645</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Service Failure and Implications for Customer Propensity to Return</td>
<td>S. S. Andaleeb</td>
<td>645</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Investigating the Purchase Intention of Green Product Among Bangladeshi Consumers Based on Extended Theory of Planned Behavior</td>
<td>T. Khan, T. Dutta</td>
<td>646</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Role of Supply Chain Management in Power Solution Provided Industry in Bangladesh</td>
<td>R. Das</td>
<td>647</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Developing Organizational Citizenship Behavior: Impact of Employee Engagement and Demographic Attributes</td>
<td>A. A. Ahad, E. Ashraf</td>
<td>647</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Consumer Behavior While Purchasing Smartphone in Bangladesh Context</td>
<td>T. Akter, M. Syeeduzzam, M. Jahir</td>
<td>648</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Social Media as Emerging Shopping Platform</td>
<td>M. T. Akter, S. H. Mahdee, R. T. Audhora, A. N. Tori</td>
<td>649</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Graduate Supply Chain Management in Education: to Enhance Digital Education in Bangladesh</td>
<td>M. H. Miraz, S. Ahmed, M. H. Khan</td>
<td>649</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Improvement of Service Quality at Automobile Workshop in Bangladesh</td>
<td>M. S. Hossain, A. Zahid, R. J. Hoque</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Motivational Factors Affecting Female Entrepreneurs in Urban and Rural Context</td>
<td>S. I. Abedin, I. Akhter</td>
<td>652</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Know and Love Thyself First Then Think About Organization and Its Balance Sheet</td>
<td>M. K. Ojha</td>
<td>652</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Utility of Human Resource Outsourcing to the Corporate Sector in Bangladesh</td>
<td>Zaheed Husein Mohammad Al-Din, Effat Jahan Mumu, Syeda Samora Bakht</td>
<td>653</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Measuring Festival Quality Affecting Visitors' Satisfaction: A Case of Chiang Mai Flower Festival 2017</td>
<td>N. Somrit, P. Piboonrungroj</td>
<td>653</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Attendees' Satisfaction on Convention: A Case of Convention in Thailand</td>
<td>P. Chawalit, P. Piboonrungroj</td>
<td>654</td>
<td></td>
</tr>
<tr>
<td>Page</td>
<td>Number</td>
<td>Title</td>
<td>Authors</td>
<td>Page</td>
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<tr>
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<td>--------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>24</td>
<td>134</td>
<td>Exploring Impacts of Visitor Experience in the Special Event: A Confirmatory Factor Analysis model of the Chiang Mai Flower Festival</td>
<td>T. Khamhom, P. Piboonrungroj</td>
<td>654</td>
</tr>
<tr>
<td>25</td>
<td>181</td>
<td>The Growing clout of Rural Consumers of Bangladesh</td>
<td>S. Nuzhat</td>
<td>655</td>
</tr>
<tr>
<td>26</td>
<td>199</td>
<td>Participation in Decision Making on Building Relationship Quality: A Retail Industry Perspective</td>
<td>M. T. Aziz</td>
<td>656</td>
</tr>
<tr>
<td>27</td>
<td>362</td>
<td>The Necessity of a Rock Music Based FM Station in Bangladesh: A Case Study</td>
<td>K. N. Anwar, R. Ahmed</td>
<td>656</td>
</tr>
<tr>
<td>28</td>
<td>282</td>
<td>Impact of Corporate Social responsibility on Organization Performance in Bangladesh</td>
<td>A. Shaha, A. Chakravartty</td>
<td>657</td>
</tr>
<tr>
<td>30</td>
<td>246</td>
<td>Driving Social Commerce Values: The Roles of Business and Marketing Strategy, Technology Capability and Ethical Conducts</td>
<td>Y. Yahya, E. S. Kassim</td>
<td>658</td>
</tr>
<tr>
<td>31</td>
<td>374</td>
<td>Facebook Page vs. Websites: A Dilemma For E-Commerce Industry of Bangladesh</td>
<td>M. H. Nahid</td>
<td>658</td>
</tr>
<tr>
<td>33</td>
<td>411</td>
<td>Impact of Retail Store Location on Consumption Behavior: A Literature Review</td>
<td>M. M. Rahman, M. N. H. Chowdhury</td>
<td>659</td>
</tr>
<tr>
<td>34</td>
<td>416</td>
<td>Factors Effecting the Online Shopping Adaptation in Dhaka, Bangladesh</td>
<td>R. Nanjiba, I. Hasan, M. A. Ahad, S. S. Sanah</td>
<td>660</td>
</tr>
<tr>
<td>35</td>
<td>429</td>
<td>An Exploratory Study on Adaptability with the Major Shift in Consumer Behavior in Food and Beverage Industry</td>
<td>R. K. Zaman, M. I. Amin</td>
<td>660</td>
</tr>
<tr>
<td>36</td>
<td>388</td>
<td>Go Beyond! Factors Causing Volatility in Share Prices</td>
<td>A. Naoshin</td>
<td>661</td>
</tr>
<tr>
<td>37</td>
<td>407</td>
<td>New Interest Rate Model for Entrepreneurs</td>
<td>K. M. N. I.Tanvir, R. Ahmed</td>
<td>661</td>
</tr>
<tr>
<td>38</td>
<td>245</td>
<td>Investigating the Acceptance of Technological Features of Health-Related Websites in Malaysia Scenario</td>
<td>N. M. Hassan, S. N. Maon, E. S. Kassim, S. A. A. Seman</td>
<td>662</td>
</tr>
<tr>
<td>39</td>
<td>303</td>
<td>ICT Application in Supply Chain on Numerous Grounds’ in Education and Industries Assimilation</td>
<td>S. A. M. M. H. Khan, M. M. Habib, E. M. Nazri</td>
<td>662</td>
</tr>
<tr>
<td>40</td>
<td>436</td>
<td>Constructing Perceived intention to Use Social Network Platforms: Perspectives from BoP Consumers</td>
<td>M. H. Zaman, M. S. Rahman, Z. T. Khalil, S. M. Jahan</td>
<td>663</td>
</tr>
<tr>
<td>41</td>
<td>150</td>
<td>Harassment and Discrimination Issues at Higher Education Institutions: Issues and Solutions</td>
<td>K. Khan, K. Iohana</td>
<td>663</td>
</tr>
<tr>
<td>42</td>
<td>268</td>
<td>Factors Affecting Women’s Higher Education in MBA in Bangladesh</td>
<td>L. A. Labonno, M. F. Mohiuddin</td>
<td>664</td>
</tr>
<tr>
<td>43</td>
<td>164</td>
<td>Scarcity of Resources And Challenges of Pre-advising</td>
<td>S. Arifuzzaman</td>
<td>664</td>
</tr>
<tr>
<td>44</td>
<td>275</td>
<td>Reviewing Parents Influence Over Women’s Area of Study at the Undergraduate Level in Bangladesh</td>
<td>S. Hossain, S. Sultan, R. Islam</td>
<td>665</td>
</tr>
<tr>
<td>46</td>
<td>307</td>
<td>Islamic Banking in Bangladesh and Malaysia: A Comparative Study</td>
<td>S. R. Kabir, S. Yasmin</td>
<td>666</td>
</tr>
<tr>
<td>47</td>
<td>331</td>
<td>Systematic Literature Review on Green IT Practice and Executorial Factors</td>
<td>S. F. A. K. Jailani, L. M. Abdullah</td>
<td>666</td>
</tr>
<tr>
<td>48</td>
<td>385</td>
<td>Crowd Sourcing</td>
<td>I. Mahfuz</td>
<td>667</td>
</tr>
<tr>
<td>49</td>
<td>410</td>
<td>Implication of Green Procurement in Private Universities – A Case Study</td>
<td>M. Morshed</td>
<td>667</td>
</tr>
<tr>
<td>50</td>
<td>289</td>
<td>Deliberate Dropouts at English-medium Schools in Bangladesh and Their Performances in Tertiary Education</td>
<td>S. Hossain, S. A. Al-Mumen</td>
<td>668</td>
</tr>
<tr>
<td>51</td>
<td>346</td>
<td>Health Literacy and Healthcare Utilization among the Elderly Outpatient in Malaysia</td>
<td>M.Y. Noor’ain, A.M. Noor Hazilah, O. Azura, J. Nurita, O. Mohd Azhadi, S. Mohmad</td>
<td>668</td>
</tr>
<tr>
<td>Page</td>
<td>Start Line</td>
<td>Title</td>
<td>Authors</td>
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</tr>
<tr>
<td>52</td>
<td>169</td>
<td>Potentialities of Tea Tourism Destinations: A study on Tea Estates in Chittagong</td>
<td>S. Sultana, Rehnuma S. K.</td>
<td>669</td>
</tr>
<tr>
<td>53</td>
<td>311</td>
<td>Full steam ahead: Real challenges in the world of API production</td>
<td>A.H. Saadi, K.S. Farhad, D.M. Gomes, H. Mahmood, A. Ahmed</td>
<td>669</td>
</tr>
<tr>
<td>54</td>
<td>315</td>
<td>Aftermath of Rana-plaza Incident in RMG Sector of Bangladesh</td>
<td>M. Mim², S. Khanum, F. Antu, M. Moniruzzaman</td>
<td>670</td>
</tr>
<tr>
<td>55</td>
<td>499</td>
<td>A Study on Financial Performance of Pharmaceutical Sector in Bangladesh</td>
<td>S. S. Sanah, I. H. Evan</td>
<td>670</td>
</tr>
<tr>
<td>56</td>
<td>456</td>
<td>FDI and Impact on Economic Growth of Bangladesh</td>
<td>M Ismail Majumder</td>
<td>671</td>
</tr>
<tr>
<td>57</td>
<td>257</td>
<td>An Empirical Study on the Fruit Value Chain in Bangladesh</td>
<td>MM Alam</td>
<td>671</td>
</tr>
<tr>
<td>58</td>
<td>323</td>
<td>Economic Benefits of Universal Health Coverage for the Climate Induced Disease in Southwest Coastal Region of Bangladesh: Application of Choice Experiment Method</td>
<td>Md. Hafiz Iqbal</td>
<td>672</td>
</tr>
<tr>
<td>59</td>
<td>438</td>
<td>Lifestyle of Auto Rickshaw Drivers in Cox’s Bazar, Bangladesh</td>
<td>Tasdidaa Shamsi, Zaheed H M Al-Din</td>
<td>672</td>
</tr>
<tr>
<td>60</td>
<td>428</td>
<td>Prospect of Equity Financing Products for Shariah Based Banking in Bangladesh</td>
<td>Humaira Parveen</td>
<td>673</td>
</tr>
</tbody>
</table>
4Es: A Normative Model for Growth of Social Enterprise

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Abstract - Social entrepreneurship literature talks abundantly about virtues and creation of Social Entrepreneurship Organization (SE). After creation of an enterprise the next logical step is to scale up/grow. Unlike a commercial enterprise, SE is driven with a mission to create social value; not sharing it strategies, innovations and mechanisms of growth is thus counterproductive to its mission. In other words, it is imperative for a SE to grow and extend its impact either through replication or model scale-up.

In case of SE, it is often challenging to measure impact, especially most of the interventions are context-dependent. This limits the ability of SE to scale-up and hence the search for replication. However, there are many successful SEs that have defied this notion and achieved significant scale: Building Resources Across Committees (BRAC) and Grameen Bank of Bangladesh, Teach for America, Aflatoun and Goonj are a few notable examples. Despite the aforementioned successes in favor of growth of SE, little attention has been paid towards understanding their growth and even little so towards understanding various factors affecting the growth of a SE.

Revisiting the extant literature of social entrepreneurship and inferences drawn from related disciplines, this paper attempts to understand and demystify explanation of the growth of SEs. In this pursuit it identifies four major categories: the 4E's (Entrepreneurial types, Environment, Enablers, Empowerment) of SE Growth. Our conceptualization concludes that the entrepreneurial qualities of dominant players operates within the environmental constrains. Enablers and empowering agents shape SE growth within existing constrains. It is the complex interplay of these factors (4Es) that shape the growth of a SE. This paper elaborates upon this theme and explains how various factors work in tandem to facilitate successful growth of SEs.

Keywords - Social Enterprise, Growth, 4E, Entrepreneurial Type, Environment, Enablers, Empowerment.

I. INTRODUCTION

Social welfare is of major concern to both academicians, as well as practitioners as the true intent of capitalism is to enhance social welfare [1]. Yet, there is a distinct set of entities that exist solely for the purpose of social welfare. These entities, called social enterprises, are distinct both from classical business entities and traditional non-profit entities [2]. Social Enterprise incorporates positives of both i.e., financial performance standards, innovation and market-orientation of businesses combined with elements of social purpose of non-profit organization [3].

Although, social enterprises have dual motives, their primary motives remain the same-- social welfare enhancement with integration of business [4]. For example, in case of a social enterprise, ‘profit’ of the business world is replaced by ‘surplus’ and the purpose of this surplus is not accumulation of wealth but for financial sustenance and to expand enterprise activities to ensure growth [5]. There are two possibilities for any such expansion: activity expansion and geographical expansion. In the first case, social enterprises expand the variety of activities of the organization to create greater social value; in the second case they take their activities and reach out to different geographical areas. Typically, the first is the case of economies of scope and the second is the case of economies of scale. In either case, there is growth of the organization. In real-world situations, such a distinction is hard to make. Hence, the purpose of this paper is to synthesize growth model of social enterprise based on extant literature.

II. REVIEW OF LITERATURE

Identifying the potential of creating a just society, growth of social enterprise is one avenue that can advance the cause in both the developed and the developing world [6]. Some effort has been paid in the literature to understand the growth of social enterprise. For instance, Dees (1998) talks about new emerging forms of organizations where making a distinction between for-profit and non-profit is neither relevant nor necessary. According to him, increasing competition among various entities working to create social value is the key behind the emergence of new organizational forms, called hybrid organization. Alternatively another view is to look at legitimacy aspects as key driving forces for social enterprises. According to this view moral legitimacy defines the trajectory of social enterprises. Moral legitimacy places emphasis on the normative domain of an entity imposed by socio-political environment over self-interest [8]. Another attempt was made to address the same question by using PCDO (People, Context, Deal and Opportunity). They concluded that there are complex bi-directional relationships among these four aspects of an organization and by establishing better alignment they can widen social impact with external forces and define boundaries so as to ensure proper utilization of resources [9].
In order to achieve the purpose of to serve social needs, social enterprises look for two strategies, scaling up and/or replication [10]. As social needs are very context specific hence the growth challenges of social enterprises should be looked as maximization within context specific constraint. Accepting this, positive externalities is considered as growth criteria for social enterprises [11]. Alternatively social value creation is another competing and widely accepted criteria of ensuring social impact [12]. Although, the extant literature touched upon growth aspects of social enterprises, there is no systematic attempt made so as to understand the growth pattern of the social enterprises [13, 14]. More specifically, the aforementioned work looked at growth of social enterprises but from different lenses. This makes their positions contest the positions of others, which can hinder theoretical development of the field. Hence, there is a need to integrate these diverse perspectives to develop a framework and make it relevant to researchers, as well as practitioners.

There are two key challenges while responding to these intriguing issues. The first challenge is identifying the concepts and second is analyzing the concepts. The existing literature also faced these challenges even if it has predominantly been using the case study method. Specifically, the literature particularly struggled because it is not easy to define ‘who is a social entrepreneur’ or ‘what is social entrepreneurship’ or even what are the qualifying criteria for calling any organization a ‘social enterprise’.

For this paper, ‘social enterprises’ are those organizations that are practicing the phenomenon of social entrepreneurship. This definition is a boon in disguise. It is disguised because the definition is not conclusive; it is dependent on the definition of another term, ‘social entrepreneurship’. It is a boon because, social entrepreneurship is an essentially contested concept and covers five different sub-concepts, including ‘social entrepreneurship organization’ (SE, equivalent to ‘social enterprise’), ‘social innovation’, ‘social value creation’, ‘social entrepreneur’ and ‘market orientation’.

A critical examination of the literature reveals that this field has two dominant narratives. The first narrative is about the organization and second narrative is about the process. When, this paper talks about narratives of the organization, it is about ‘social enterprise’, and when it talks about process, it is about ‘social entrepreneurship’.

Hence, the purpose of this paper is to present a systematic review of both narratives with a view to developing a holistic picture of growth of social enterprises. Specifically, this paper contributes to the extant literature in three ways. First, the paper integrates two different schools of thought and examines their complementary role in advancing the field. Second, the paper presents the growth model of social enterprises, which is represented by 4Es (Entrepreneurial types, Environment, Enablers and Empowerment).

III. METHODOLOGY

In order to achieve the objectives, researchers have used a systematic review of the literature considering two key phrases, ‘social entrepreneurship’ and ‘social enterprise’. Researchers started working with Google Scholar, which gave the opportunity to filter papers having these two key phrases in the titles of the papers/books/book chapters. For ‘social entrepreneurship’ there were 4510 hits and for ‘social enterprise’ 3550 hits. As the very first work on social entrepreneurship appeared in 1991 and the definition of ‘social enterprise’ espoused here is derived from an understanding of ‘social entrepreneurship’ hence the search is limited from 1991 to present. This reduced the above numbers to 4330 and 3390, respectively. This insignificant reduction confirms the assumption that the definition of social enterprise is dependent on social entrepreneurship.

Then researchers used the EBSCO host database to limit our search to peer-reviewed journals. EBSCO host reported 622 papers with the title of ‘social entrepreneurship’ and 884 for ‘social enterprise’. Out of these papers, 555 and 761 on these titles respectively are published in the English language. The title of each of these papers was scanned so as to identify whether the paper is dealing with growth or not. In case of any confusion all such papers are retained for next steps. Further, the list included conference proceedings as well as research reports were not considered. After getting the list of all such scholarly reviewed works, researchers went through the abstract of over 600 papers. This effort was necessary to select the papers, which are relevant for addressing the objectives mentioned earlier. In the event, some concepts or claims relevant to social enterprise growth, if found found then such papers were selected else discarded.

For instance, if a paper talks about performance measure, scaling, financial sustainability, replication and similar concepts then they were retained. In case the papers discussed theoretical challenges and definitional issues or individual characteristics of founders then they were discarded. This was a conscious decision as this paper is focused on expanding effort to analyze scholarly work based on empirical findings instead of immersing ourselves in rhetoric.

Finally, there were 120 papers having ‘social entrepreneurship’ in their title and the number for the phrase ‘social enterprise’ was 100. This systematic literature review is thus based on a total of 220 peer-reviewed scholarly researches, which contributed to the field through empirical findings. Researchers also added some of the work, which are not peer-reviewed but which significantly contributed to development of the field. For example, Dees (1998) has written one of the most prominent works in the field of social entrepreneurship but it does not fall in the peer-reviewed category. In honor of researchers who truly guided the field and contributed in establishing the same as a field relevant for research, such papers are included. Yet, the number of such papers
are very few and insignificant (although their contribution is not). Additionally report of leading organizations who keep monitoring in the field were analyzed as well.

After generating this list of 220 papers, researchers studied the findings and conclusion part of each of these articles. Analogy from grounded theory methodology was drawn so as to develop our model. Here, themes were developed, followed by second order codes, axial coding and finally selective coding. This helped us to develop categories, define them, connect them through logical and data driven evidences and finally develop the growth model of social entrepreneurship.

The growth of social enterprise has many ramifications: employment, innovation, social stability and much more. In this paper, based on our methodology, this paper proposes a normative model of factors that contribute to growth of social enterprises.

![Figure 1: A Normative Model of Social Enterprise Growth](image)

IV. DISCUSSION

4.1 Social Entrepreneurial Types

In development of a normative model for scaling social enterprises, the characteristics of the entrepreneur are probably the most important factor, which ultimately decides the fate of the organization. A lot has been discussed about social entrepreneurs and their characteristics in general. This paper attempts to identify specific traits of entrepreneurs who successfully scale their organizations, which were identified by going through several case studies. It is to be noted here that these traits are neither universal nor limited to the extent of this paper.

Social entrepreneurs, who have successfully scaled their organization, on the surface, do not exhibit any particular commonality in their backgrounds: they are men and women coming from rich and poor families, with different educational and regional backgrounds. Social entrepreneurs who attempt and achieve successful scaling up of their social enterprises usually display most of the characteristics of successful entrepreneurs in general; in fact they go a step beyond since scaling up a commercial enterprise is limited to increasing profitability, while scaling up of a social enterprise is trickier as it has to maintain and expand social value creation, as well as overall impact. Having said that, one can identify certain traits that an entrepreneur and his organization exhibit, in cases where they are most likely to scale up successfully and vice versa.

In cases of sustainable scale-up, the leader is a social entrepreneur and a social engineer, who can catalyze social change beyond the initial limits of the problem and is able to visualize a larger and wider impact of the change process. They are able to produce small changes in the short term that are later engineered using existing resources to create larger impacts and changes. They are able to create and allocate value [15]. Social enterprise like BRAC, Gram Vikas and SEWA who were successfully able to scale up their ventures, rely heavily on assets available locally, they rely on capabilities of local actors, all the while harnessing and developing local human resource and capital for growth. These organizations also able to attract enough support from outside as well.

In order to scale up, a social enterprise and the social entrepreneur and her/his team continuously goes through the process of learning, innovation and improvement, innovatively fixing problems as they arise [16, 17]. Scaling up is usually seen as iterative learning, innovating and then scaling [18]. These organizations harness and nurture talents to ensure succession of the leader in order to ensure organizational sustainability.

High impact social entrepreneurs and organizations operate in association with all the key stakeholders, for effective scaling up of an organization, social entrepreneurs should be able to work in tandem with all key stakeholders. Ability to work and progress along with the stakeholders become even more crucial in the event of scaling up as the process involves dissemination, affiliation and branching [19]. This process by its very nature leads to a loss of the entrepreneur’s control over the organization and there is a tradeoff between scale and control [20]. Effective partnership with stakeholders leads to smoother and more efficient scaling up of an origination. Ability of social entrepreneurs to effectively deal with various stakeholders also eliminates various contextual challenges, which arise during dealing with various constituencies [21].

In many cases of successful scaling up of social enterprise
it has been seen that the entrepreneurs have prior experience and skill, which helped them in bridging gaps; also in many cases these entrepreneurs had relevant experience which helped them in building effective linkages which were crucial for scaling up. Organizations like BRAC and Grameen Bank were led by individuals with linkages to relevant stakeholders.

Like any commercial organization the leader in a social enterprise should also be able to successfully delegate work, prioritize their levels of participation, exhibit situational leadership while protecting the mission; these characteristics are important in successfully developing a productive work force and ensuring continuity of the organization, especially in an event of a succession. Also these characteristics of successful social entrepreneurs save them from getting overwhelmed and burnout in the process of scaling up [22].

4.2 Environmental Factors
The second E in the 4E model refers to Environmental factors. In the process of scaling up of a social enterprise, numerous external as well as internal factors play an important role, which include socio-political setup, organizational context, demographics, prevalent economic structure and educational and cultural backdrop of the area in which the social enterprise is operating. The pattern of distribution of practices of social entrepreneurship across the world is also insightful. Looking at this pattern one can draw conclusions about what type of socio-political and cultural set up is most conducive for social enterprises to thrive and scale up. Since USA, Australia, Western Europe, UK and Ireland have the highest level of economic welfare and institutional development, they have the highest ratio of post start-up operational institutions, which are most likely to scale up, as these regions also have well-developed financial, government and other such institutional support for social enterprises [23, 24].

While operating social enterprises are many in sub-Saharan Africa, these areas tend to be populated by small-scale entrepreneurial set ups with few employees. Though operational, these setups are less likely to scale up beyond a certain level. (24)

By extrapolating findings of the report one can also argue that higher educational levels of entrepreneurs in USA and Australia also increased probability of sustenance and scalability of organizations. This argument can also be supported by reviewing the profiles of Ashoka and Schwab fellows; both organizations recognize and facilitate social entrepreneurs who have scaled up their organizations and impact beyond regional levels and have created far greater social value through the cascading effects of their work. A cursory look at their profiles will reveal that most of the entrepreneurs are well educated, with degrees from the best of institutions. GEM report also elaborates on demographic aspects of social enterprises globally. It states that gender gap in social entrepreneurial activity around the world is significantly less than in commercial activity. Also younger people (18-34) are more likely to start and grow a social enterprise. Although it does not specify the role of gender and age in scaling a social enterprise, most of the report hints at uniformity of these two factors in various stages of a social enterprise.

The cultural context in which a social enterprise operates also determines its growth strategy as well as prospects, as suggested by the GEM report. Cultures that value post materialism and have suitable institutions and workforce such as Western Europe and US are more likely to have social enterprises in operation stage, as well as scale-up or post-scale up phase [23, 24].

4.3 Enablers
This category comprises players who are providing resource-based support to the entrepreneurial organization along with capacity building activities. This does not mean that such support is for facilitation and enhancement, and that these players are motivated to contribute to the process of social value creation [25]. In the extant literature there are three types of enablers. The first category of enablers involves those who acts as recipients as well. It means the recipients play the role of resource provider. This is the typical nature of community-based enterprises [26, 27, 28, 29]. Here, the role of the focal organization is to reach out to the recipients and design services and products in such a way that the community feels motivated to add whatever resources they have. The key notion of such initiatives is to add millions of drops of water so that it will make a difference in the ocean. This mechanism of enabling is followed by all grassroots organizations, which basically focus on involvement of communities in their action. Social bricoleurs are a perfect fit here [15].

The second category is of those organizations, which are motivated either through their philanthropic conceptualization or through legal compliances [30, 31, 32, 33, 34]. For example, CSR activities are used as marketing activities [35]. Investment in the social sector also improves the image of the corporate world. Additionally, association with well-trusted social entrepreneurship organization is a source of competitive advantage for the funding agency [36]. Apart from creating credibility, it also creates a market base for those corporates, which are acting as funding agencies [37]. Another motive of corporates to fund such initiatives is to facilitate the true nature of capitalism through giving back to society. Additionally, such players are bound by their moral obligation to compensate for the resources they utilize which is typically owned by the society at a large, but they obtained their legitimate right to use them via the government and other legitimate processes.

In the present context two funding agencies are predominant in the field of social enterprise in terms of
financial resources. The first category belongs to angel investors who provide financial resources through crowd funding. Here, a large number of entities provide relatively small contributions to the social enterprises [38, 39, 40, and 41]. The second source of financial funding comes through government resources. Government provides financial funding through subsidies and grants [1, 42, 43, and 44]. Basically, government here attempts to facilitate role of other institutions that are apparently sharing the work usually done by government [45]. This is the fundamental conception behind the emergence of the third sector. Organizations in the third sector contribute to the development of society [46]. In this process, the role of the government is non-negotiable because of widespread capacity of government and obligations imposed on the government as well. This obligation gets reflected in terms of grounded realities in terms of implementation of the programs undertaken by the organization [47]. Many a times, the government plays a range of roles from facilitating to dictating the processes followed by social enterprises. This takes us to other dominant player of this category, the government. There are three types of governments in today’s world as far as growth of social entrepreneurship organization is concerned. The first type follows a welfare state policy and is predominantly found in the European continent. Here, the government takes prime responsibility to work in promoting the disadvantaged section of the population. The second category involves countries that are striving for a welfare state policy, but unavailability of resources limits their ability to facilitate this process. India is an example of one such country [48]. Presently, such governments are taking proactive measures to mobilize resources. For instance, the government of India passed a law in the legislature which mandates investment of 2% of corporate profits for corporate social responsibility. The third category of government is one that creates opportunities via laws, tax reform etc. instead of directly adding resources in the kitty of social entrepreneurial organizations. United States is an example of such countries.

4.4 Empowerment

A large number of papers talk about the situational variables that foster growth of social entrepreneurial organizations. These are the forces, which add to the functionality of social entrepreneurship organization, along with supplying much needed resources. All such entities, providing resources to the process, are classified under ‘enablers’. But in this section, the focus will be on how social enterprises are empowered and strengthened to carry on with their work of social value-addition. This involves capability building of social entrepreneurial organizations as well as providing them with a sense of control that is further embellished by recognizing and rewarding for the work they do. There is a discussion about two types of institutions, which play a critical role in the growth of social enterprise or social entrepreneurial organizations. The first category belongs to those institutions that take potential candidates of this process and introduce them to the world of social entrepreneurship. Primarily these institutions emphasize social value creation among motivated individuals so that they can start a venture with the motive of social value creation. The second category belongs to those institutions, which help to establish a legitimate claim of being a social entrepreneurship organization. This category of institutions is either supported by governmental or philanthropic private players. In both the cases, these institutions provide support to already established institutions, which have the potential to grow and contribute to social value creation. They impart training, help generate resources, create a system of network, and even provide extended handholding to budding social entrepreneurs. Many a times, the set benchmarks of these institutions are considered as the key criteria for social value creation or social entrepreneurship organization. The first category is primarily composed of academic institutions— often business schools offering different courses related to ‘social entrepreneurship’ [49, 50, and 51]. Although ‘social work’ institutions are spread out across the world and are contributing for many decades, the real boost in this endeavor has been noticed after the entry of business schools in this field as far as growth is concerned [52]. This is because of the fact that businesses rely on either economy of scale or economy of scope. Each of these are related to growth in terms of organizational reach and idea expansion, respectively. In case of growth of social entrepreneurship, idea expansion is promising because opportunities in this field are highly context dependent. Economies of scale are largely related to ‘social engineers’ and to some extent ‘social constructionists’ and economies of scope is in the domain of social bricoleurs. Because the nature of intervention of all these forms is different, they need different types of capacity building interventions. For example, social engineers creatively destroy existing order and replace the same with more efficient order, which is possible only through disruptive innovation. In such cases, empowering needs technology-based intervention. Contrary to that, in case of social bricoleurs, understanding local issues and the resources available at local level are the key to success. In the context of social enterprise growth, the focus is the growth of ideas, not the organization because the problems at hand, as well as resources vary from context to context and place to place. Hence, in such cases empowering is communication of ideas and help in customizing the idea successfully implemented at one place to another place [15]. It means empowerment is about communication, awareness building and mobilization. These roles are performed through promoting narratives of organizations through various channels like online webpages, news reports, organizing seminars and conferences and even through promoting research publications. This reflect the vital role of academics in the growth of social entrepreneurship organizations. Now, academia is moving beyond just
offering a few courses in social entrepreneurship and recently started treating social entrepreneurship as an independent discipline for study. For example, Tata Institute of Social Sciences, offers a two-year Master degree in social entrepreneurship. After this two years of class plus field exposure, the aspirants start their own venture and the organization supports them. Organization also helps them to find the funding agencies as well as input support from well-established social entrepreneurs.

Apart from academia, there are other institutions like Ashoka, Schwab, Skoll, Ecoing Green, UnLtd, etc. [53]. In fact Ashoka coined the word social entrepreneurship. All of these organizations developed their own metric to identify socially entrepreneurial activity and shape their growth [54]. The idea of these organizations is to facilitate growth of potentially viable social entrepreneurial organizations so as to ensure scaling-up. At the same time, these organizations also promote replication of an idea. For the same, they have developed a wide network of awardees and organize different events for information sharing. These organizations have well-designed support program and intervention patterns so as to provide integrated system of empowerment. The idea to extend support is to make them self-sufficient and independent. Furthermore, those organization acts as repositories of ideas where budding leaders of social entrepreneurs who are struggling, can go and see the idea most suitable for their situation.

Empowerment is also about one’s control over resources and the extent to which they can deploy these resources strategically. Both control and deployment must be facilitated to the extent that social enterprises are able to grow at their own pace. Internal and external agents can and often do inhibit both, thus limiting or even stunting the social entrepreneur’s sense of empowerment. Sometimes laws or regulations may be interpreted in ways that limit the social entrepreneur’s willingness and ability to forge ahead. Matters of power and control within the organization can lead to forces of dissipation that inhibit growth. Unless the social entrepreneur is trusted to lead in innovative ways that often requires going beyond certain boundaries, growth with be stymied.

V. CONCLUSION

The 4E model of social enterprise growth attempts to provide a comprehensive perspective on the factors that can propel such growth. While this paper looks at the main effect only, future work will certainly be embellished as the paper delves deeper into interaction effects. For example, entrepreneurial types capable of social enterprise creation but lacking in enablers will experience a dampening effect that needs to be better understood and circumvented. How that might be done is a challenge for academics and researchers to grapple with and address. To advance the study of social enterprise growth from a research perspective, it will also be important to deal with definitions and measurement. How the relevant concepts are defined and measured will pose additional but interesting challenges. It is expected that this initial framework will be thoroughly parsed and extended further as new insight is shed on the rich arena of social enterprise growth.

VI. ACKNOWLEDGMENT

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Analysis of the Total Economy of Bangladesh in the Context of GDP

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Abstract - Bangladesh currently ranks as the 46th largest economy in terms of nominal GDP and has the potential to become the world's 23rd largest economy by 2050. The overall GDP of Bangladesh has grown at the rate of 6.13% at constant price (base year 2005-06) from the fiscal year 2006 to 2016. The GDP has experienced the highest growth rate of 7.11% in fiscal year 2016 since independence. It has also been observed over the years that the growth rate of the industrial sector is greater than the rates at which the agricultural and service sectors have grown. In depth analysis of the agricultural sector has shown that the growth of the agricultural sector has been diminishing over the years and that the sector has not been able to keep up with the industry and service sectors. Thus the agricultural sector’s contribution to the total GDP every year has been declining. Besides that, out of the 15 sub-sectors, the highest growth rate of 9.01% per year was recorded to have been achieved by the manufacturing sector.

Keywords- Agriculture GDP, Growth rate, Industry Service

I. INTRODUCTION

The Gross Domestic Product or GDP in short, is simply defined as the total monetary value of all the goods and services produced within a country’s geographic borders within a certain period of time. GDP is broadly used as a quantitative means to measure the overall economic health and activity of a nation and how the economy is therefore performing. GDP is usually calculated yearly or every quarter. According to Samuelson and Nordhaus (Economics, 15th Edition) GDP, much like a satellite in space, can survey the weather across an entire continent and therefore can provide an overall picture of the state of the economy. The GDP and the data related to it are like beacons that help policymakers motivate the economy in a manner that facilitates the accomplishment of key economic objectives.

From 2000, the economy has been growing at 6 percent on average every year and that growth has lifted millions out of poverty. According to the International Monetary Fund (IMF), Bangladesh’s nominal GDP, as of 2017, stands at $246.166 billion while Bangladesh’s GDP in terms of Purchasing Power Parity (PPP) stands at $686.162 billion; thereby, Bangladesh currently ranks as the 46th largest economy in terms of nominal GDP and also as the 34th largest economy in terms of its GDP with respect to PPP. 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).

The GDP of Bangladesh used to largely depend on the agricultural sector but over the years the scenario has changed. Although agriculture still contributes a significant amount to the GDP, the manufacturing sector is growing faster than the agriculture sector due to the expeditious growth of the ready-made garments (RMG) industry. Therefore, it is very important to analyze all the different sectors that contribute to the whole of the GDP and then compare their growth rates. In this paper, the GDP of Bangladesh will be analyzed from different perspectives and the growth rates of the different sectors observed over the last 10 years will be compared.

Background

Since 1972, the Bangladesh Bureau of Statistics (BBS) has been compiling GDP data and other basic aggregates of national accounts of Bangladesh in collaboration with the Planning Commission. BBS has developed two interrelated systems of accounts for the country; one of these methods essentially calculates the GDP by way of the production approach and the other calculates the GDP by utilizing the expenditure method. In keeping with the budgetary and accounting practices of the Government, GDP estimates are made on a split year basis i.e. a July-June period is maintained and not a calendar year basis. The GDP of Bangladesh is composed of mainly three broad sectors, namely:

- Agriculture
- Industry and
- Service

Moreover, the GDP of Bangladesh has been divided into 15 sub-sectors of which two sub-sectors belong to
agriculture; four sub-sectors to Industry; and the rest of the 9 sub-sectors exist in the service sector; the major sectors and their respective subsectors are shown below in table I.

<table>
<thead>
<tr>
<th>Broad sectors</th>
<th>Sub-sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>1. Agriculture and Forestry, 2. Fishing</td>
</tr>
<tr>
<td>Industry</td>
<td>3. Mining and Quarrying, 4. Manufacturing</td>
</tr>
<tr>
<td></td>
<td>5. Electricity, Gas and Water Supply, 6. Construction</td>
</tr>
</tbody>
</table>

In this paper, the overall GDP of Bangladesh will be analyzed with respect to the broad sectors and the respective sub-sectors that it is composed of.

Methodology

In our analysis, we will mainly focus on the growth rates of each sector, subsector and GDP. There are many methods to calculate the growth rates. The following two methods will be used to calculate the growth rates: The arithmetic growth rate will be used to calculate the year to year or annual (one year) growth rate; and for the overall or average growth rate over the years, the least-squares regression (log-linear) growth rates will be applied.

Arithmetic growth rates:

In order to compute the growth rate of one year, the 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:

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

Where:

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

Least-squares Regression (log-linear) growth rates:

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 Treasury, 2002). It is also known as the log-linear least squares regression method as the equation used to identify the time trend is obtained through a logarithmic transformation of the compound growth equation:

\[ Y_t = Y_0(1 + r)^t \]

Where \( Y_0 \) is the value of the variable \( Y \) at time 0 (beginning year); \( Y_t \) is the value of the variable \( Y \) at time \( t \) and \( t \) is the time at which the variable has been last recorded, taking values such as 0.1, 2, …n; and \( r \) is average growth rate over the n-period time series.

By taking natural logs on both sides and letting \( \alpha = \ln Y_0 \) and \( \beta = \ln(1 + r) \) and then adding a disturbance term \( \varepsilon \), the equation is now transformed into the following equation:

\[ \ln Y_t = \alpha + \beta t + \varepsilon \]

Then by utilizing the Ordinary Least Squares (OLS) method, we obtain an estimate of the slope coefficient \( \hat{\beta} \) and as a result, the compound rate of growth by regression method is obtained as follows:

\[ r = e^{\hat{\beta}} - 1 \]

Or, \( r = \exp(\hat{\beta}) - 1 \)

To get the percentage growth rate, the value obtained needs to be multiplied by 100.

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 (Kakwani, 1997; Mawson, 2002; OCED, 1997 and The World Bank, 2015).
Results

Analysis the GDP of Bangladesh

In the paper, the gross domestic product (GDP) of Bangladesh has been analyzed from the year 2005-06 (1 July 2005 to 30 June 2006) to 2015-16 (1 July 2015 to 30 June 2016) which is from the fiscal year 2006 to 2016. To get the real picture of the overall economy of Bangladesh, it is necessary to consider the gross domestic product (GDP) of Bangladesh at the constant market price, taking the year 2005-06 that is the fiscal 2006 as the base year, be analyzed. By using the least square regression method, it is found that the overall GDP of Bangladesh has grown at the annual rate of 6.13% over the last 10 years from the fiscal year 2006 to 2016. To know the growth rate in more detail, the growth rate of the overall GDP from year to year must be analyzed. The year to year growth rates (the GDP at the current year compared to the GDP achieved in the previous year) of the GDP at constant price is shown in Fig.1

![GDP yearly growth(%)](image)

**Fig.1:** Yearly growth rate of GDP at constant price for the fiscal year 2006 to 2016.

From fig.1, it is visible that the growth rate of GDP at constant price on a year to year (one year) basis is almost stable. Most of the years the annual growth rates of GDP were around 6%. The highest rate of yearly growth was achieved in fiscal year 2016 and was 7.12% and the second highest growth of 7.06% was in the fiscal year 2007. On the other hand the lowest annual growth rate of GDP was 5.05% in the fiscal year 2009; the second lowest annual growth rate of GDP of 5.07% was observed in the fiscal year 2010.

**Broad sectors of GDP**

The whole GDP of Bangladesh is comprised mainly of three broad sectors: agriculture, industry and service. The summary of the growth rates of these broad sectors along with their contributions to the GDP at the constant market price are shown in table-II.

<table>
<thead>
<tr>
<th>Broad sectors</th>
<th>Real Growth (%)</th>
<th>Share to GDP (%) 2006</th>
<th>Share to GDP (%) 2016</th>
<th>Growth of share to GDP (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>4.04</td>
<td>19.01</td>
<td>15.35</td>
<td>-2.11</td>
</tr>
<tr>
<td>Industry</td>
<td>8.56</td>
<td>25.4</td>
<td>31.54</td>
<td>2.24</td>
</tr>
<tr>
<td>Service</td>
<td>5.84</td>
<td>55.59</td>
<td>53.11</td>
<td>-0.42</td>
</tr>
<tr>
<td>GDP at constant producer prices</td>
<td>6.28</td>
<td>100</td>
<td>100</td>
<td>-</td>
</tr>
</tbody>
</table>

From table II, it can be seen that over the last 10 years, the sector of industry grew at a rate of 8.56% per year which is above the overall GDP growth rate (6.28%) at the constant producer price. On the other hand, the other two sectors of GDP: the agriculture sector and the service sector grew at the rates of 4.04% and 5.84% respectively, and both of these rates are below the overall GDP growth rate. A comparison of the growth rates of the different sectors and the overall growth rate of Bangladesh’s GDP is shown in fig.2.

![Real Growth (%)](image)

**Fig.2:** Average annual growth rates of the three broad sectors and GDP at the constant price
The shares that the different sectors contribute to the total GDP has shifted due to the different growth rates that these sectors have individually experienced over the last 10 years from the fiscal year 2006 to 2016. Upon studying the table, it is evident that the contribution of the agricultural sector to the GDP on an average has fallen to -2.11% per year during the year 2006 to 2016; On the other hand, the industrial sector’s contribution to the total GDP has risen at the rate of 2.24% per year during the same period of time. The changes of shares of the three broad sector of the economy of Bangladesh from the fiscal year 2006 to 2016 are shown in fig.2.

Fig.2: Shares of the three broad sectors in GDP in the fiscal year 2006 and 2016.

If the year to year growth rates of the three individual sectors of GDP is analyzed during the fiscal year 2006 to 2016, it is found that the agricultural sector has less growth rate than the industrial and service sectors. The yearly growths of each of these sectors is visualized in fig.3 below:

Fig.3: Year to year growth rates of the three major sectors from the fiscal year 2007 to 2016.

From fig.3 it can be seen that the industrial sector has achieved a greater amount of growth than the agricultural sector and the service sector have. Upon further analysis, the diminishing of the amount of growth achieved by the agricultural sector over the years and thus lagging behind the industrial sector and service sector in terms of growth can be quickly discerned. As a result, it can be concluded that the agricultural sector’s contribution to the total GDP has been shrinking with every year and still continues to do so.

Analysis of the Sub-sectors in GDP

The GDP of Bangladesh is made up of 15 sub-sectors in total. The highest growth rate was seemed to have been achieved by the manufacturing sector; the growth rate was 9.01% on an average and on a per year basis during the fiscal years- 2006 to 2016. This growth rate was made possible mainly due to the meteoric expansion of Readymade Garments (RMG), including Knit Wear & Hosiery products. The sub-sectors dedicated to Agriculture and Forestry both grew at the rate of 3.49% per year whereas the Fishing sector achieved a growth rate of 6.04% per year during the years- 2006 to 2016; the Real estate and Community, Social and Personal services...
sub-sectors, on the other hand, have had to bear low growth rates of 4% and 3.024% respectively during the same period of time. The growth rates of the sub-sectors are shown and compared against each other in fig.4

![Real Growth (%)](image)

**Fig.4:** Annual growth rates of the sub-sectors of Bangladesh’s GDP from the fiscal year 2006 to 2016.

It has been noticed that the sub-sectors which have growth rates below the overall growth rate of the GDP, which is 6.11% as of now, have all witnessed a drop in the amount that they contribute to the GDP; a few such sub-sectors are Agriculture and Forestry (-2.48%); Fishing (-0.09%); Real Estate (-2.01%); Health and Social Work (-0.87%); Community, Social and Personal Services (-2.72%); and Import Duty (-2.99%).

**Conclusion**

By using the least square regression method, it has been found that the overall GDP of Bangladesh has grown at the annual rate of 6.13% over the last 10 years from the fiscal year 2006 to 2016 taking the fiscal year 2006 as base year. The year to year (one year) growth rate of GDP at constant price is almost stable. Most of the years the annual growth rates of GDP were around 6%. The highest rate of yearly growth was in fiscal year 2016 was 7.12% and the second highest growth was in the fiscal year 2007 which was 7.06%.

By analyzing the GDP by broad sector it is sorted out that over the last 10 year the industry sector grew at the rate of 8.56% per year, the agricultural sector and the service sector grew at the rate of 4.04% and 5.84% respectively.

Due to having the higher growth rate, the industrial sector has gained an increase in the share that it contributes to the total GDP, at a rate of 2.24% per year during the fiscal years- 2006 to 2016; thereby, the industrial sector has been able to raise its contribution to the GDP to 31.4% in 2016 from 25.4% in 2006. On the other hand, the agricultural sector’s contribution to the GDP has undergone a decline at a rate of -2.11% per year; as a result, the contribution of the agricultural sector to GDP has fallen to 15.35% in 2016 from 19.01% in 2006. Therefore, it has also been deduced that the growth of the agricultural sector is diminishing with every year and it has been surmised that this sector is having much difficulty in keeping up with the pace at which the industrial and service sectors are growing. Ultimately, it can be gathered and also seen that the agricultural sector is losing its contribution to the total GDP every year.

The GDP of Bangladesh is composed of 15 sub-sectors. Out of these 15 sub-sectors, the highest growth rate of 9.01% per year was recorded to have been achieved by the manufacturing sector during the fiscal years- 2006 to 2016. It is also observed that the growth rates of the sub-sectors which are below the overall growth rate of the GDP (6.11%) have noted a decrease in the total amount that they contribute to the total GDP individually; some examples of such sub-sectors would be the Agriculture and Forestry sub-sector (-2.48%); the Fishing sub-sector (-0.09%); the Real estate sub-sector (-2.01%); the sub-sector focusing on Health and Social work (-0.87%); the sub-sector of Community, Social and Personal Services (-2.72%); and the Import duty sub-sector (-2.99%).

**References**


Analysis of Customer Orientation Approach among Business Students: Evidence from Private Universities of Dhaka, Bangladesh

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Abstract - Emerging market driven economy has influenced the higher education sector where university students are considerably treated as customers. Moreover, the surge of neoliberal policies in this sector has been claimed as one of the crucial reasons of marketization and Bangladesh is not an exception. Thus, it necessitates exploring the extent to which students in private universities perceive themselves as customers in their respective institutions. This study focuses on this issue by conducting a survey of 210 randomly selected business students from 06 different private universities of Dhaka. The instrument has been adopted based on a validated model developed by Koris & Nokelainen (2015) where 11 different educational experience categories have been considered to evaluate the level of Bangladeshi students’ expectation from their HEIs. The results indicate that students expect to be treated as customers in some, but not all categories of educational experience that a HEI generally offers.

Keywords - Marketization, student-customer orientation, business students, educational experience.

I. INTRODUCTION

The purpose of this study is to provide a reliable research based evidence of the extent to which the students of private universities of Bangladesh perceive themselves as the customer and possess a customer orientation approach while pursuing higher education degree. It is expected that the findings of this study will guide the private higher education institutions to modify their practices as a service provider in the growing market of higher education provider in this South Asian country.

II. LITERATURE REVIEW

On the basis of the material relationship between students and universities, the concept of student as customer has taken different form in different contexts. As in USA students are expected to pay substantial amounts of tuition fees and take out student loans, the customer conceptualization has a relatively long history there [12]. Besides, students in the UK are increasingly expected to pay for a larger percentage of their postsecondary education [1]. However, the degree of student-customer orientation will vary in relation to different aspects of overall educational experience [23]. Other studies show that students expect an HEI to be customer oriented in some but not all aspects of their educational experience as they also need to contribute if they are to earn a good degree. While treating student as a customer, one should keep in mind the basic difference of mainstream customer and student as a customer. In the first type, the customer does not need to perform or contribute actively to have a good service apart from the monetary exchange rewarded. Nevertheless, in case of student as a customer, they need to contribute and take responsibility actively along with the service provider to achieve the best service. Only spending money will not ensure a quality service in this particular case of student as customer and higher education institutions as the service provider. Thus literatures suggest this kind of service as interpersonal service [29]. In most of the cases, the increase in competition would strengthen the demand for better quality education [17]. However, in case of Bangladesh, it does not work in that way as the demand supply mechanism works in a different way. Presently, there are more students than the available seats at tertiary level [28].

Literatures from the field of marketing depict the fact that customer orientation helps the organization to enhance their performance regardless the type and size of the firm [9] [26]. Literatures also rationalize the concept of considering higher education sector to be business-like and should therefore adopt the customer orientation approach within the marketing concept if they want to succeed in their endeavor [13] [8]. Thus, a greatly competitive and dynamic environment has been developed called the education market [3] [20]. They raised concern stating when HEIs face falling demand, they should focus on the customer referring students and remarket the product (i.e. education) [4] [20] [24]. Studies have also identified the subsequent outcomes of customer orientation among students in terms of increasing accountability, efficiency, relevance and practicality of higher education institutions [5] [22].

Thus, this study makes an effort to explore Bangladeshi student's expectations as a customer of higher education institutions by following self-assessment approach. For this purpose, the validated model and questionnaire of educational experiences developed by Koris and Nokelainen (2015) have been employed [21].
III. METHODOLOGY

A. Research Model

The study is conducted based on a validated model of educational experiences developed by Koris & Nokelainen in 2015 which suggests students’ experience can be measured from eleven experience categories; (1) student feedback, (2) graduation, (3) curriculum design, (4) communication with service staff, (5) rigor, (6) grading, (7) classroom behavior, (8) classroom studies, (9) individual studies, (10) teaching methods, and (11) course design. The following figure 1 portrays the model in detail.

![Research Model Diagram]

Fig 1: Research Model

B. Model Variables

a. Student feedback (SF): it refers to the importance of collecting and acting on students’ feedback on a regular basis through the administration procedure of the HEI.

b. Graduation (GR): it refers to the level of strictness or lenience regarding graduation requirements which students expect a HEI to employ during graduation.

c. Curriculum design (CD): it refers to the level of expectations towards curriculum design in terms of the administrative body and the nature of the curriculum – how practical or theoretical the curriculum is.

d. Communication with service staff (CSS): it refers to the expectations of students towards the non-academic service staffs or study consultants and other bodies responsible for the smooth flow of study-related activities; except classroom activities.

e. Rigor (RG): it refers to the level of strictness or lenience with which students expect the HEI to follow the established rules and regulations related to academic and non-academic submission deadlines.

f. Grading (GD): it refers to the level of strictness or lenience with which students expect the teacher to approach the evaluation of various assignments in terms of justification of obtained grades.

g. Classroom Behavior (CB): it refers to the level of strictness or lenience with which students expect the teacher to approach students’ (mis) behavior in class relating to unfair or unethical conducts.

h. Classroom Studies (CS): it refers to the convenience and ease of accessing study materials in the classroom for smooth studies.

i. Individual Studies (IS): it refers to the students’ willingness to make academic efforts apart from class hours relating to self-studies and home tasks.

j. Teaching Methods (TM): it refers to the students’ level of expectations concerning teaching methods relating to the use of various teaching aids or supporting materials.

k. Course Design (CRD): it refers to the level of expectations towards course design whether the course should be practical or theoretical.

C. Research Method, Sampling, Statistical Treatment of Data

The study considered full-time business students of private universities of Dhaka at undergraduate and graduate level. It mainly followed descriptive research approach as it attempted to measure and describe the students’ perceptions regarding their customer orientation toward the institutions.

In order to find out the finest outcome of the study, 300 validated questionnaires were distributed to the respondents and among them 210 completed questionnaires were selected finally as the rest carried missing values. Data were collected from the business students of six different private universities in Dhaka city from June to August 2016. These universities are Northern University Bangladesh (NUB), Daffodil International University (DIU), Stamford University (SU), University of Liberal Arts (ULAB), United International University (UIU) and East-West University (EWU). Only the full-time, final year, regular students of Masters and Bachelor of Business Administration were considered eligible for the study as their longer experience of studentship guaranteed information richness among them. 30 students were taken for pilot study to test and identify unexpected problems regarding the question wording, proper instructions, answering categories, etc.
The questionnaire has been divided into two main sections; respondent profile and student perception. All the measures and items were mainly adopted from the research model stated. Some question wordings were changed in order to match the research context.

Each individual respondent was asked to indicate the extent of agreement with statements about their educational experiences, using a six-point scale stating (1) Strongly Disagree, (2) Disagree, (3) Moderately Disagree, (4) Moderately Agree, (5) Agree, and (6) Strongly Agree for each factor. An even-numbered, forced scale has been employed to scale the data as students are assumed to be known and habituated about all the categories asked. Therefore, no point of neutral opinion has been taken into consideration.

The collected data were coded into SPSS for descriptive statistical analyses, such as item mean, item variance, mean inter-item covariance, mean inter-item correlations, frequency, and percentage.

III. DATA ANALYSIS

The data obtained from 210 respondents from private universities were first processed in SPSS. Data were coded and mean values and standard deviations were calculated by statements and by each educational experience categories. The confidence level was calculated at 95%.

a. Educational Experience Category Analysis

The results of the survey are shown in table 1. According to table 1, all categories hold a high mean value indicating respondents’ agreement towards each educational experience.

According to Pallant (2001), mean inter-item correlation values ranging from 0.2 to 0.4 are optimum [19]. All correlation values seem optimum as in portrayed in table 2, thus indicating the reliability among the items.

b. Respondent Analysis

In order to get a richer understanding of the data surveyed and used in this study, a respondent analysis has been conducted.

According to table 3, most of the respondents (51.9%) belong to the age group of 24-26 years which indicates that the sample reflects to the overall population as the senior students of a university generally belong to this age group.

According to table 4, it can be seen that majority of the respondents are male (73.8%) as it has been observed that participation of male students are more evident than that of female students in the discipline of business studies in Bangladesh.

According to table 5, it can be seen that majority of the respondents were masters students (60%). As the researchers assumed that the more the respondents would calculated if the number of items in the scale is less than ten [19]. As in this study the maximum number of statements in each category is five, the researchers relied on Pallant. The mean inter-item correlations are portrayed in table 2.

### Table 2

<table>
<thead>
<tr>
<th>Educational Experience Category</th>
<th>Mean Inter-item Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional</td>
<td>Student feedback</td>
</tr>
<tr>
<td>Network</td>
<td>Graduation</td>
</tr>
<tr>
<td>Network</td>
<td>Curriculum design</td>
</tr>
<tr>
<td>Network</td>
<td>Communication with service staff</td>
</tr>
<tr>
<td>Network</td>
<td>Rigor</td>
</tr>
<tr>
<td>Learning</td>
<td>Grading</td>
</tr>
<tr>
<td>Situation</td>
<td>Classroom behavior</td>
</tr>
<tr>
<td>Network</td>
<td>Classroom studies</td>
</tr>
<tr>
<td>Network</td>
<td>Individual studies</td>
</tr>
<tr>
<td>Network</td>
<td>Teaching methods</td>
</tr>
<tr>
<td>Network</td>
<td>Course design</td>
</tr>
</tbody>
</table>

### Table 3

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-23 years</td>
<td>71</td>
<td>33.8</td>
</tr>
<tr>
<td>24-26 years</td>
<td>109</td>
<td>51.9</td>
</tr>
<tr>
<td>26-28 years</td>
<td>20</td>
<td>9.5</td>
</tr>
<tr>
<td>above 28 years</td>
<td>10</td>
<td>4.8</td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### Table 4

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>55</td>
<td>26.2</td>
</tr>
<tr>
<td>Male</td>
<td>155</td>
<td>73.8</td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 1 confirms that the students’ expectation is high from their HEI in getting services as the mean value is high in each category.

According to Pallant (2001), the mean inter-item correlations instead of Cronbach’s alpha should be calculated if the number of items in the scale is less than ten [19]. As in this study the maximum number of statements in each category is five, the researchers relied on Pallant. The mean inter-item correlations are portrayed in table 2.
be senior in terms of taking educational service from a higher education institution, the more s/he would be able to have better understanding about the service and provide thoughtful data regarding his/her educational experiences.

### TABLE 5
LEVEL OF EDUCATION

<table>
<thead>
<tr>
<th>Enrolled Program</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBA</td>
<td>84</td>
<td>40.0</td>
</tr>
<tr>
<td>MBA</td>
<td>126</td>
<td>60.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>210</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 6 shows the sources from where the primary data has been collected for this study. Data have been collected from each of the institutions by employing the faculty members of that particular university. These universities have been selected based on researchers’ convenience.

### TABLE 6
HIGHER EDUCATION INSTITUTIONS

<table>
<thead>
<tr>
<th>HEI</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUB</td>
<td>70</td>
<td>33.33</td>
</tr>
<tr>
<td>DIU</td>
<td>58</td>
<td>27.62</td>
</tr>
<tr>
<td>SU</td>
<td>18</td>
<td>8.57</td>
</tr>
<tr>
<td>ULAB</td>
<td>26</td>
<td>12.38</td>
</tr>
<tr>
<td>UIU</td>
<td>24</td>
<td>11.43</td>
</tr>
<tr>
<td>EWU</td>
<td>14</td>
<td>6.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>210</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

IV. DISCUSSION

This paper aims to examine to which aspects and what extent students of higher education institutions of Bangladesh expect to get customer-oriented services from their respective universities. The interpretation of the findings has been presented in this section.

The first category of educational experience is – **Student feedback** – which is a widely used criterion for evaluating educational experience. This variable has been widely and repeatedly used to measure the students’ expectation, satisfaction by a number of scholars [2], [14], [18], [15], [16]. The result of this survey data analysis confirms that students think it is important to collect their feedback and act on it on a regular basis by their HEI (item mean=5.030, SD=0.7) and also suggests that students expect HEI to reflect on students’ feedback in case of any situation that demands any institutional change.

The second category is – **Graduation** – and the result confirms that students like to feel that they have worked hard to achieve the degree and expect strictness from their HEI (item mean=5.021, SD=0.7). However, this finding is similar to [22] but contradicts [14] and [10] as they have examined in their studies, students are less likely to work hard to achieve a good grade and it is not the students’ but the educators’ responsibility to ensure a better grade of the students.

The third category is – **Curriculum design** – in which the result confirms that students expect HEI to consider other stakeholders’ (such as – alumni and employers) opinion, not only the expertise of HEI itself, while designing the curriculum (item mean=4.892, SD=0.1) as the students want the curriculum to have more practical orientations. However, the finding of the survey is quite similar to [18], [22] while at the same time quite contradictory to the findings of [27].

The fourth category is – **Communication with service staff.** With a similarity to the findings of [22], the result of this study confirms that students expect to be treated as customers as they wants the staffs to communicate with them regarding reminding their deadlines, solving problems with a teacher, and effective accommodation of individual problem solving (item mean=5.080, SD=0.8).

The fifth category is – **Rigor** – in which the result reveals that students expect the HEI to be uncompromising in following its rules and regulations (item mean=5.010, SD=0.7) which is similar to the findings of [22].

The sixth category is – **Grading** – in which the result supports that the students agreed upon the facts that they want to be evaluated with proper rationalization (item mean=4.773, SD=1.1) of their grades. Though previous studies of [2], [11], [6], [7] claim that students feel that the assessment should be generous and easy, this study result contradicts the claim.

The seventh category is – **Classroom behavior.** Though the literature review shows that students want the HEI to reduce their academic standards, and be lenient with them as they pay tuition fees [11], [7], [10], [15], the result of this study reveals that the students want the teachers role should be strict enough in terms of cheating, missing deadlines and plagiarism (item mean=4.817, SD=1.1). However, students also expect that teachers should establish certain rules and regulations for them so that they may not be able to engage in anything unethical related to their studies. However, the result matches with the findings of [22].

The eighth category is – **Classroom studies** – in which the result supports the previous study findings of [10] that students want to get pre-processed, concise, readily available study materials particularly in power-point form and online availability (item mean=5.102, SD=0.7).

The ninth category – **Individual studies** – describes the students’ willingness toward academic effort apart from classroom environment. The result reveals that students want their study to be finished at class and remain quite indifferent in completing home tasks (item mean=3.818, SD=1.1). Although they do believe that working with home assignments may be a key to obtain
good grades, but they do not want to put effort for that and did not wish to be punished for not getting preparation at home. The result is as similar as the existing studies of [2],[11],[14],[25].

The tenth category is – Teaching methods – in which the result is quite similar to the existing literatures [6],[14],[16],[22] as it reveals that students want their teachers to employ entertaining, inspiring and participatory materials to facilitate the learning environment (item mean=5.212, SD=0.6).

The eleventh category is – Course design – in which the result shows that students want to get practical orientation in their course by showing agreement about having corporate personnel to teach them as they are likely to have practical experiences (item mean=4.941, SD=0.8). The result is quite similar to [18] in which students opined that academicians should act like practitioners and theorists while designing course contents.

V. SCOPE AND LIMITATIONS OF THE STUDY

This study is limited to students of private universities of Dhaka city only which might not be the true representation of the original student population of higher education in Bangladesh. Furthermore, the study has focused only on the students from business studies discipline. However, the study can be further extended considering students from other disciplines and also other stakeholders of higher education – such as parents, corporate personnel, alumni students, etc.

VI. CONCLUSION

Taking everything into account, it can be concluded that students perceive them as customers of HEI in certain categories; such as acting regularly on student feedback, graduation requirements, participation of different stakeholders in curriculum designing, systematic and consistent communication with service staff for free-flow academic and non-academic activities, teachers’ proper justification of grades, strict rules and regulations regarding unethical conducts, getting pre-processed study materials on time, expectation of different techniques to be employed in the class to make the study enjoyable to them, and expectation of being taught by both practical and theoretical orientations throughout the course. However, students’ intention to involve in individual study is found to be low – meaning they are less likely to work at home and want their study to be accomplished within the classroom.

ACKNOWLEDGEMENT

We would like to express our heartfelt gratitude to the faculty members of different private universities who have helped us to complete this paper by devoting their effort and time to conduct the survey at their respective universities.

REFERENCES


Abstract - The present study empirically examines the relevance of Capital Asset Pricing Model (CAPM) to describe the risk and return relationship on Miscellaneous Industry of Dhaka Stock Exchange in Bangladesh during the period from January 2012 to December 2016. The model provides an equilibrium linear relationship between required rate of return and risk of an asset. The objective of the study is to analyze the performance of the companies in Miscellaneous Industry of Dhaka Stock Exchange. This paper analyzes 09 companies of that particular industry.

Keywords - Capital Asset Pricing Model, Company Risk, Dhaka Stock Exchange, Market Risk, Miscellaneous Industry.

I. INTRODUCTION

This paper employs required rate of return and the expected return from the companies. By collecting risk-free rate from Bangladesh Bank's website and using CAPM model, the required rate of return is calculated. It also describes the total risk through standard deviation (σ). The total risk of a portfolio can be bifurcated into market risk and company risk. Moreover, it analyzes the market risk (β) by using regression analysis. Similar analysis has been done before on Dhaka Stock Exchange. However, no analysis has been conducted on Miscellaneous Industry. As this industry contains some major companies like Berger Paints Bangladesh Limited, BEXIMCO Limited and so on, that is why this particular industry has been chosen for our research.

II. LITERATURE REVIEW

There have been previous researches on the risk and return relationship. Mixed evidence was observed and mixed results have been found. According to the study of Jacob (1970), on 593 stocks traded in the New York Exchange for the period 1946-1965, there is no positive relationship between risk and return.

On the other hand, Fama and Mac Beth (1973) found a positive and linear relationship between return and beta based on all stocks listed in NYSE. Again, Sharpe and Cooper (1972) examined the risk-return relationship of stock traded in the NYSE for the period of 1931-1967 and reached that there is no relationship between them.

However, Foster (1978) conducted a study on monthly data of NYSE for the period of 1931-1974 and found a positive relationship between risk and return.

Similarly, Yalawar (1985) observed that there is a positive relationship between risk and return based on his research on Indian Capital Market.

According to the research of Nikolaos (2009) based on British Stock Exchange; there is a contradictory result. Moreover, according to the study of Hasan, Kamil, Mustafa, and Baten (2011) based on Dhaka Stock Exchange; they have not found any positive relationship between risk and return.

Lastly, Rani (2015) conducted a study on Indian Stock Market and found a positive relationship between risk and return.

III. DATA AND METHODOLOGY

The purpose of this study is to test whether there is a relationship between risk and return or not by using capital assets pricing model (CAPM). The return generation process of CAPM is given below:

\[ K_e = R_f + [R_m - R_f] \times \beta \]

Here, \( K_e \) is the required rate of return on asset, \( R_f \) is the risk-free rate of return. \( R_m \) is the market return and \( \beta \) is the market risk.

The total risk of every individual company is represented by the standard deviation (σ).

Here, the nine companies of Miscellaneous Industry of Dhaka Stock Exchange which are focused for this analysis are: Aramit Limited, Berger Paints Bangladesh Limited, BEXIMCO Limited, Bangladesh Export Import Company Limited, Bangladesh Shipping Corporation, GQ Ball Pen Industries Limited, Miracle Industries Limited, Savar Refractories Limited, Sinobangla Industries Limited and Usmania Glass Sheet Factory Limited.

For every company, their monthly returns for five consecutive years starting from 2012 are considered. From Dhaka Stock Exchange's Trade Information the daily returns have been collected. For the month of January, the return of 1st January and 31st January has been taken. By applying the formula of holding period return (HPR) \[ \frac{new-old}{old} \times 100 \] the percentage of monthly return has been found where the return from 31st January is considered as new return and return from 1st January is
considered as old. For these 5 years, 12 returns have been calculated for each company. Like that, a total of 60 returns (5year*12returns) has been found for each company. After that, by using Microsoft Excel the average of the 60 returns has been calculated and the expected return for every company has been found.

The expected return for Dhaka Stock Exchange is calculated in a similar way. By collecting data from DSEX, 12 month's returns for five years have been calculated. Then, the expected return for DSE Index is calculated by using the average of those 60 returns. After that, the expected return of DSE is multiplied by 12 and that is how the market returns (Rm) have been found. The Rm is calculated by doing the average of DSE’s five years return and by multiplying the average by 12.

As risk-free rate (Rf) 3.38% - the 91 day's T-bill's cut off yield from Bangladesh Bank's website has been taken, as Government Treasury-bills are risk-free short-term debt. For calculating Beta (β) or the market risk, regression analysis in Microsoft Excel has been used. From the third table, the intersection point of X variable 1 and coefficient is considered as beta. By doing this, 9 betas for 9 companies have been found.

The total risk is calculated by using the formula of standard deviation (σ) in Microsoft Excel. Here, those 60 returns from every company have been taken into consideration to find out the total risk.

By gathering all these data and using the above formula, required rate of return (Kₑ) have been calculated for the 9 companies of the miscellaneous industry.

IV. FINDING AND ANALYSIS

The required rate of return (Kₑ), the market risk (β) and the total risk (σ) of nine companies from miscellaneous industry are given below:

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Name of the Companies</th>
<th>Required Rate of Return (Kₑ)</th>
<th>Market Risk (β)</th>
<th>Total Risk (σ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Miracle Industries LTD.</td>
<td>3.78%</td>
<td>0.148</td>
<td>0.151</td>
</tr>
<tr>
<td>2.</td>
<td>Sinobangla Industries LTD.</td>
<td>3.90%</td>
<td>0.191</td>
<td>0.142</td>
</tr>
<tr>
<td>3.</td>
<td>Berger Paints Bangladesh Limited</td>
<td>3.99%</td>
<td>0.225</td>
<td>0.082</td>
</tr>
<tr>
<td>4.</td>
<td>Savar Refractories Limited</td>
<td>4.02%</td>
<td>0.235</td>
<td>0.111</td>
</tr>
<tr>
<td>5.</td>
<td>Aramit Limited</td>
<td>4.05%</td>
<td>0.246</td>
<td>0.088</td>
</tr>
<tr>
<td>6.</td>
<td>Bangladesh Shipping Corporation</td>
<td>4.06%</td>
<td>0.252</td>
<td>0.149</td>
</tr>
<tr>
<td>7.</td>
<td>Usmania Glass Sheet Factory Limited</td>
<td>4.13%</td>
<td>0.278</td>
<td>0.127</td>
</tr>
<tr>
<td>8.</td>
<td>Bangladesh Export Import Company Limited</td>
<td>4.20%</td>
<td>0.301</td>
<td>0.155</td>
</tr>
<tr>
<td>9.</td>
<td>GQ Ball Pen Industries Limited</td>
<td>4.25%</td>
<td>0.322</td>
<td>0.147</td>
</tr>
</tbody>
</table>

From the above table, it can be seen that Miracle Industries Limited has a beta of 0.148. That means 1% change in the market return will lead a change of 0.148% in the Miracle Industries' return. That means if market return increases by 1%, Miracle’s return will increase by 0.148%. Moreover, we can see that the required rate of return for Miracle is 3.78% and their total risk is 0.151.

In addition, it is found that Sinobangla Industries Limited's beta is 0.191 which is higher than Miracle Industries. Also, their required rate of return is 3.90% which is also higher than Miracle Industries. This shows that higher the market risk, higher the return. On the other hand, their total risk is 0.142 which is lower than Miracle Industries. The total risk is not showing any specific relationship with return because it includes both market risk and company-specific risk. Due to the variation in company specific risk, total risk is varying from company to company.

The required rate of return for Berger Paints Bangladesh Limited, Savar Refractories Limited, Aramit Limited and Bangladesh Shipping Corporation is respectively 3.99%, 4.02%, 4.05% and 4.06%. In the same order, their betas are 0.225, 0.235, 0.246 and 0.252. This again shows that the companies which have higher betas have a higher return. In addition to that, their total risk or SD is 0.082, 0.111, 0.088 and 0.149 which again shows no specific relationship with the return.

Lastly, the betas for Usmania Glass Sheet Factory Limited, Bangladesh Export Import Company Limited, and GQ Ball Pen Industries Limited are 0.278, 0.301 and 0.322 and their required rates of returns are 4.13%, 4.20% and 4.25%. Total risks of these three companies are 0.127, 0.155 and 0.147.
V. CONCLUSION

The result from the analysis shows that the higher the beta or the market risk, the higher the required rate of return of a company. However, it also shows that the total risk does not specifically indicate any direction with the required rate of return. Additionally, it is clearly shown that if CAPM model is applied, the market risk and required rate of return would show a positive linear relationship. Therefore, this paper adds value to the current literature and to researchers as well. Finally, this paper will create an opportunity for further similar research in other industries of Dhaka Stock Exchange in Bangladesh.

REFERENCES


Factors affecting customer satisfaction of Islamic and Conventional Banking
A case study of Bangladesh

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2Nurul Farul Hasan & Co, Dhaka, Bangladesh

Paper# ICBM-17-335

Abstract - Banking sector has faced huge turmoil in the last decade not just in Bangladesh but around the globe. It is evident that this sector plays a vital role in the economy, thus significant research in this field is essential. Bangladesh banking sector provides both conventional and Islamic banking. The customers basically fall in three groups; customers who use both types of banking, customers who prefer only Islamic banking, customers who prefer only conventional banking. Since the study focuses on doing a comparison of satisfaction level of both types of banking, those customers who use dual banking have been selected using convenience sampling. Out of the hundred and forty customers interviewed the response and completion rate is 100%. The reliability of the questionnaire was tested giving a reliability score of 0.806 which seems reliable. This study aims to compare the satisfaction level of customers who are using both Islamic banking and conventional banking. Cross tabular analysis will be done to see how factors like age, gender and occupation affects the satisfaction level of both types of banking. This paper will provide recommendations to increase satisfaction level for both the types of Banking. This way it will add valuable contribution since not much research of this type has been done in Bangladesh.

Keywords - Customer Satisfaction, Islamic Banking, Conventional Banking, Bangladesh

I. INTRODUCTION

Banking industry plays a vital role in economy by providing credit for performing economic activities and thus contributes immensely to the financial sector of any country. As of December 2015 there are 56 banks in Bangladesh and the number of branch banks increased to 9397 from 9040 as of December 2014 due mainly to opening of new branches by the banks during the year. The banking sector in Bangladesh comprises four categories of scheduled banks-state-owned commercial banks (SCBs), state-owned development financial institutions (DFIs), private commercial banks (PCBs) and foreign commercial banks (FCBs). PCBs can be categorized into two groups: Conventional PCBs and Islamic Shariah based PCBs. In Bangladesh, Islamic banking system has been introduced since 1983. In FY16, out of 56 banks in Bangladesh, eight PCBs operated as full-fledged Islamic banks and 16 conventional banks (including three FCBs) were involved in Islamic banking through Islamic banking branches. The Islamic banks have continued to show strong growth since its inception, as reflected by the increasing market share of the Islamic banking in terms of assets, financing and deposits of total banking system. Total deposits of the Islamic banks and Islamic banking branches of the conventional banks stood at Taka 1641.6 billion at the end of December 2015 which accounted for 20.7 percent of total deposits. Total credit of the Islamic banks and the Islamic banking branches of the conventional banks stood at Taka 1387.2 billion at the end of December 2015 representing 23.7 percent of total credit of the banking system of the country. This gives the rising importance of research in this field [1].

In banking industry in Bangladesh the presence of Islamic and conventional banking competes with each other in order to attract large number of customer. It should be noted that Islamic banking offers products/services which are very similar to those offered by conventional banks. However, the approaches of Islamic banks are distinctly different from the ones of conventional banks [2],[3],[4] as these are mainly based on Islamic shariah where interest is forbidden. In a service industry like banking, emphasis has been placed on research of customer satisfaction in banks. Researchers have asserted that banks must focus on understanding the needs, attitudes, satisfactions and behavioral patterns of the market to compete successfully in today’s competitive marketplace[5],[6] It is crucial for banks to better understand changing customer needs and adopt the latest information technology system in order to compete more effectively with global organizations [7]. Banks that master service quality can gain a competitive edge in terms of higher revenue, customer loyalty and customer retention [8]. Thus this paper will look into the satisfaction aspect and compare both Islamic and Conventional bank in Bangladesh.

The next part of the paper will deal with the literature in this field to identify the research gap and will be followed by methodology and analysis. Finally, the study will conclude with recommendations on strategies for practitioners in the banking industries and also provide future research directions.

II. LITERATURE REVIEW

In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy [9]. A study depicts that there is a strong and positive relationship between customer satisfaction and loyalty [10]. Studies also reveal that satisfied customers are more likely to repurchase a product and share his experience with others [11], [12] whereas unsatisfied customer can banish more business [13]. The level to which customers’ needs and expectations can be satisfied largely depends on the
quality of service [14]. In 1985, a study was among the first research that laid down the foundation for the definitions as well as development of service quality [15]. Since defining service quality is difficult [16], a research brought forward five dimensions of service quality: (1) tangibles (appearance of physical components); (2) reliability (dependability of service provider and accuracy of performance); (3) responsiveness (promptness and helpfulness); (4) assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence); and (5) empathy (caring, individualized attention the firm gives its customers) [17].

Reference [18] points out that the banking industry is quite competitive so providing better service quality helps to gain competitive advantage and thus to maintain long term relationship with customer. In this regard, a study argued that customer satisfaction is the back bone of the power and survivorship of a bank [19]. Thus, banks place more value and much focus on customer satisfaction [20]. Research on what influences bank selection some parameters influential are number of branches and ATMs and their location, speed of completing transactions, good financial advice, caring employees [21], [22], [23], [24], [25], [26], [27], [28], [29], [30].

The SERVQUAL model has been a model to test the satisfaction in the banking industry [31]. In Bangladesh a study established that the combination of tangibility, reliability, responsiveness, assurance and empathy together have significant effect on customer satisfaction [32]. Using the same model, a research analyzed on e-banking and customer satisfaction in Bangladesh found that the five service quality variables are the core service quality dimensions for customer satisfaction in e-banking [33]. Another study in Bangladesh using a different approach to compare satisfaction reveals that the Islamic bank customers are significantly more satisfied in comparison to the conventional bank customers in all the parameters considered- compliance & strictness, management & efficiency, product offering, product range & quality services, accessibility & convenience, environment, facilities & comfort, and risk & return [34]. Other comparative studies in Bangladesh mainly focus on efficiency. According to reference [35] when comparing the efficiency found that Islamic bank could not operate with its full efficiency level if it operated under conventional banking framework. Researcher analyzed the relative efficiency of Islamic banking with conventional banking in Bangladesh and found that conventional banks are relatively less efficient than Islamic banks [36]. Reference [37] compared the performance of Islamic Bank with other private banks in Bangladesh between 1993 and 1994. He found that in terms of deposit growth and investment growth, the performance of Islamic Bank Bangladesh Limited (IBBL) was better than performance of private banks.

The studies done in banking are basically divided into three types 1) only conventional banking 2) only Islamic banking and 3) Comparative study between Islamic and Conventional banking. The comparative studies have either focused on comparing efficiency or financial performance and very few studies in Bangladesh have compared on the basis of satisfaction. This research is giving an effort to fill the gap that was identified in the literature. The intention of the paper is not to understand satisfaction but to understand how different factors like gender, age, family income and occupation affect satisfaction and do a comparison of Islamic and conventional banking in Bangladesh. This study may help the consultants, bank managers, and academicians and policy makers to find out the good design of satisfaction for bank customers in Bangladesh.

III. METHODOLOGY

For this research both primary and secondary data has been used. The secondary data has been collected from numerous journals, articles and annual reports to get an idea about the paper. Primary data has been collected from 143 customers in Dhaka city who use both conventional and Islamic banks for their banking purpose. For measuring satisfaction a three point scale has been used where 1 was when customers were not satisfied, 2 was for neutral response and 3 was for satisfied customers. The questionnaire had been pretested before distribution and convenience sampling was used since the sampling frame was not available.

In the banking sector the most widely used models in measuring service quality are the SERVQUAL and SERVPERF models [38]. SERVQUAL is based on five dimensions of service quality: Tangibles, Reliability, Responsiveness, Assurance and Empathy [17], [39]. For this study SERVQUAL was used and how gender, age, family income and occupation affect these parameters for both Islamic Bank (IB) and Conventional Bank (CB) was measured. Pearson's chi-square test or the chi-square test of association is used to discover if there is a relationship between two categorical variables. When the relation seemed significant result from cross tabular analysis was used to understand how satisfaction was influenced.

IV. RESULTS

For testing the reliability of the questionnaire, Cronbach’s Alpha Test of Reliability has been done. This is a way to measure reliability, or internal consistency. This finds out if the instrument used consistently measures what it is supposed to measure. According to reference [41] Cronbach’s alpha should be 0.700 or above. But, some of studies also considered 0.600 acceptable [42]. In this study, the value of Cronbach’s alpha is 0.806 which is greater than the standard value, 0.7. Thus it can be concluded that the measures used in this study are valid and highly reliable.

In table I the demographic profile of the respondents reveals that most of them were male, employed in private firms, belonging to age group 35-44 and had a family income in the range Tk. 30001-50000.
Looking at the table II it was observed that gender does not influence customer satisfaction on appearance, trustworthiness & politeness of staff, responding to complaints, ATM facility, easing cash withdrawal, overdraft facility, understanding customer needs and willingness to solve problem for both Islamic and conventional banks. In location and number of seats available the significance is observed for only Islamic banks. Here it was observed that among those who were dissatisfied majority were male customers. For Air-condition facility females seemed more satisfied but number of seats available male customers were more satisfied for both types of banks. Regarding honesty and skill and talent of staff most respondents not satisfied were females for both IB and CB. For speed of service a difference is observed in the two banking system. Females are more dissatisfied in speed of Islamic banks but male are more dissatisfied in speed of Conventional banks. In opening hours though female were more satisfied than male, but in procedure of debit card female were more dissatisfied than male customers in procedure of debit card.

Looking at the table II it was observed that gender does not influence customer satisfaction on appearance, trustworthiness & politeness of staff, responding to complaints, ATM facility, easing cash withdrawal, overdraft facility, understanding customer needs and willingness to solve problem for both Islamic and conventional banks. In location and number of seats available the significance is observed for only Islamic banks. Here it was observed that among those who were dissatisfied majority were male customers. For Air-condition facility females seemed more satisfied but number of seats available male customers were more satisfied for both types of banks. Regarding honesty and skill and talent of staff most respondents not satisfied were females for both IB and CB. For speed of service a difference is observed in the two banking system. Females are more dissatisfied in speed of Islamic banks but male are more dissatisfied in speed of Conventional banks. In opening hours though female were more satisfied than male, but in procedure of debit card female were more dissatisfied than male customers in procedure of debit card.

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**Table I**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Family Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>63.6%</td>
</tr>
<tr>
<td>Female</td>
<td>36.4%</td>
</tr>
</tbody>
</table>

**Table II**

<table>
<thead>
<tr>
<th>Factors</th>
<th>IB</th>
<th>CB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibles:</td>
<td></td>
<td></td>
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<tr>
<td>Location of the bank</td>
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<td>0.261</td>
</tr>
<tr>
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<td>0.005</td>
<td>0.004</td>
</tr>
<tr>
<td>Number of seats available</td>
<td>0.002</td>
<td>0.210</td>
</tr>
<tr>
<td>Number of staff available</td>
<td>0.000</td>
<td>0.004</td>
</tr>
<tr>
<td>Appearance of staff</td>
<td>0.15</td>
<td>0.465</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Reliability:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Honesty of Staff</td>
<td>0.039</td>
<td>0.007</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assurance:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust worthiness of staff</td>
<td>0.448</td>
<td>0.057</td>
</tr>
<tr>
<td>Skill and Talent of staff</td>
<td>0.000</td>
<td>0.003</td>
</tr>
<tr>
<td>Politeness of Staff</td>
<td>0.385</td>
<td>0.630</td>
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</table>

<table>
<thead>
<tr>
<th>Responsiveness:</th>
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</thead>
<tbody>
<tr>
<td>Respond to complaints</td>
<td>0.102</td>
<td>0.05</td>
</tr>
<tr>
<td>Speed of Service</td>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>Opening Hours</td>
<td>0.013</td>
<td>0.004</td>
</tr>
<tr>
<td>ATM Facility</td>
<td>0.273</td>
<td>0.416</td>
</tr>
<tr>
<td>Easing Cash withdrawal</td>
<td>0.546</td>
<td>0.936</td>
</tr>
<tr>
<td>Overdraft facility</td>
<td>0.407</td>
<td>0.178</td>
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<tr>
<td>Debit card facility</td>
<td>0.000</td>
<td>0.000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Empathy:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding customer needs</td>
<td>0.603</td>
<td>0.466</td>
</tr>
<tr>
<td>Willingness to solve problem</td>
<td>0.310</td>
<td>0.341</td>
</tr>
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</table>

**Table III**

<table>
<thead>
<tr>
<th>Factors</th>
<th>IB</th>
<th>CB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed of Service</td>
<td>0.084</td>
<td>0.026</td>
</tr>
<tr>
<td>Willingness to solve problem</td>
<td>0.906</td>
<td>0.019</td>
</tr>
</tbody>
</table>

Age does not affect most of the factor as the p value in all the other factors was 0.05 or above. In table III it is indicated that Age affects speed of service and willingness to solve problem for conventional banks only. The customers who were dissatisfied with the speed of service were from the elderly group (Age 44+) and those who were dissatisfied with willingness to solve problem were young customers (Age < 35).

How family Income influences customer satisfaction is revealed in table IV. It is observed that there is no significant relation of Family Income with trustworthiness and politeness of staff, easing cash withdrawal and understanding customer needs for both types of bank. For location, most customers dissatisfied with location of Islamic banks had family income above Tk 50000 and for conventional bank customer the dissatisfied groups were mainly those who had income in the range Tk 30001- Tk 500000. For Air-condition facility of both types of banks it was observed that the dissatisfied customers mainly belonged to the group which has family income Tk 30001- Tk 500000. For number of seats and staff available, responding to complaints, speed of service, opening hours and ATM service customers who were dissatisfied mainly had a family income above Tk 50000 for both types of banking.

**Table IV**

<table>
<thead>
<tr>
<th>Factors</th>
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<th>CB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of the bank</td>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>Air condition facility of bank</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Number of seats available</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Number of staff available</td>
<td>0.004</td>
<td>0.007</td>
</tr>
<tr>
<td>Appearance of staff</td>
<td>0.003</td>
<td>0.187</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Reliability:</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Honesty of Staff</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assurance:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust worthiness of staff</td>
<td>0.087</td>
<td>0.191</td>
</tr>
<tr>
<td>Skill and Talent of staff</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Politeness of Staff</td>
<td>0.320</td>
<td>0.201</td>
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<table>
<thead>
<tr>
<th>Responsiveness:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Respond to complaints</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Speed of Service</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Opening Hours</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>ATM Facility</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Easing Cash withdrawal</td>
<td>0.141</td>
<td>0.694</td>
</tr>
<tr>
<td>Overdraft facility</td>
<td>0.062</td>
<td>0.015</td>
</tr>
<tr>
<td>Debit card facility</td>
<td>0.000</td>
<td>0.000</td>
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</table>

<table>
<thead>
<tr>
<th>Empathy:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding customer needs</td>
<td>0.984</td>
<td>0.376</td>
</tr>
<tr>
<td>Willingness to solve problem</td>
<td>0.001</td>
<td>0.001</td>
</tr>
</tbody>
</table>
ASSOCIATION OF OCCUPATION WITH THE CONSIDERED FACTORS

<table>
<thead>
<tr>
<th>Factors</th>
<th>IB</th>
<th>CB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of the bank</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Air condition facility of the bank</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Number of seats available</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Number of staff available</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Appearance of staff</td>
<td>0.181</td>
<td>0.843</td>
</tr>
<tr>
<td>Trust worthiness of staff</td>
<td>0.177</td>
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<tr>
<td>Skill and Talent of staff</td>
<td>0.000</td>
<td>0.002</td>
</tr>
<tr>
<td>Politeness of Staff</td>
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<td>0.255</td>
</tr>
<tr>
<td>Respond to complaints</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Speed of Service</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Opening Hours</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>ATM Facility</td>
<td>0.020</td>
<td>0.000</td>
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<tr>
<td>Easing Cash withdrawal</td>
<td>0.141</td>
<td>0.694</td>
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<tr>
<td>Overdraft facility</td>
<td>0.439</td>
<td>0.155</td>
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<td>Debit card facility</td>
<td>0.000</td>
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</tr>
<tr>
<td>Understanding customer needs</td>
<td>0.106</td>
<td>0.016</td>
</tr>
<tr>
<td>Willingness to solve problem</td>
<td>0.068</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Regarding how family income affects satisfaction with respect to appearance of staff for Islamic banks but not conventional banks. It was found that those responds with a monthly family income above Tk. 50000 were mostly amongst the dissatisfied category for Islamic banks. It was also observed that customers who were dissatisfied with honesty, skill & talent of the staff and debit card procedure for both types of banking belonged to lower income group (Below Tk 30000). The customers who are dissatisfied with willingness to solve problem belong the middle income group. Finally overdraft facility is only significant for conventional banking where it was found that the customers mostly dissatisfied had a family income in the range Tk. 30001-Tk 50000.

In table V looking at how occupation influences satisfaction the p values reveal that it has no significant relation with appearance, trustworthiness and politeness of staff, easing cash withdrawals and overdraft facility. For location customers who were dissatisfied with location of Islamic banks were businessmen but for conventional banks they were private service holders. In case of air conditioning the case was opposite as for Islamic banking because most dissatisfied customers were private service holders and for conventional banks it was the businessmen. Comparing satisfaction with occupation revealed that Businessmen were more dissatisfied in the number of seats for Islamic banks but for conventional banks they were housewives. Regarding number of staff the private service holders seemed the most satisfied for both Islamic and conventional banking. Looking into honesty, skill and talent of staff and response to complaints it was revealed that mainly Government workers are dissatisfied in this aspect for both types of Banking. In analyzing the speed of service it was revealed that Government employees were mainly dissatisfied with this aspect for Islamic banks but for conventional banks they were businessmen. For opening hour and ATM facility customers who did not seemed satisfied for both types of banking were Businessmen for debit card facility the most satisfied were the private service holders. Lastly regarding willingness to solve problems the relation was significant for only conventional bank and it was found that private service holders seemed most dissatisfied.

V. CONCLUSION

With respect to the tangibles element for both types of banks they must provide some care in dealing with females since they might face some different types of problem. Some counters could be dedicated for female customers. Since location and number of seat seem a problem of Islamic banks especially for business who have least time, these could be addressed by having small mini counters in different places around Dhaka city. For both banks females and government workers were more dissatisfied with the honesty of staff. These could be addressed by providing more transparent service and indicating it through their work. Since females and lower income group were dissatisfied with aspects related to assurance, the staff could be provided some training or suggestions from seniors in dealing with customers. Banks have huge line and customers’ complaint of the speed of service. In this aspect some service could be digitized and promotion should be done to use this service. Lastly with respect to empathy, again the staff could be provided some suggestions so they can better deal situations and provide the picture that they are being helpful.

This study aimed to provide suggestions on the basis of the analysis and it was observed that for most of the parameters the suggestions were same for both the types of banking. When find a comparative analysis with different factors it was identified that females, were highly affected in many parameters. To address this aspect, banks can design some packages dedicated to female customers to motivate them to be attached to the organization. Although online banking exists, the ease of usage could be demonstrated to customers by different promotions so that by using online banking the challenge of waiting for service or being disheartened by staff performance can be overcome.

The current study only deals with a small sample size concentrating only on Dhaka district. Future research could be done by gathering information from more clients and by going beyond Dhaka district. Moreover more quantitative data could be collected so as to form a regression model in order to understand the relation between the parameters better.
REFERENCES


Women development through traditional and islamic microfinance - a comparative review

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²Department of Social Science, Bangladesh University of Professionals, Dhaka, Bangladesh

I. INTRODUCTION

Financial inclusion of women and focusing on gender equality results in large development payoffs. Attention needs to be given to gender equality since it is gaining increasing importance as it is central to family wellbeing and socioeconomic development of a country [1]. Expanding women’s opportunities accelerate economic growth, helping to mitigate the effects of current and future financial crises. Investments in gender equality yield the highest returns of all development investments [2].

Research reveals those women with financial independence were sharing the responsibilities with men, had decision making power, freedom of movement in the society, had access to market, and were self directed. All women were found expending much on the basic necessities like nutrition and health of their children. It collectively had improved standard of living of the families [3].

Bangladesh has given considerable concentration to enhance the participation rate of women in the labor force from 29 % to at least 40 % by 2021 [4]. Moreover, employment rate of women in 2010, at 58 %, was close to 30 % points lower than that of men [5]. This gives rise to a growing emphasis on financial inclusion of women. In Bangladesh though women’s economic participation rate has increased from 29.2% in 2005-06 to 36.0% in 2010 [4], women are still at a disadvantageous position. There exists evidence of huge discrimination and violence amongst women. The VAW Survey 2011 identified that as many as 87% of currently married women have ever experienced some type of violence by current husband. Almost 90% of those who have ever violated by current husband has the past 12-month experience of violence which implies the persistence nature of violence by the spouse [6]. A study analyzing the violence pattern of married women reported that physical spousal violence is 31% higher in slums (35%) than in non-slums (20%) [7]. Moreover, the current status of women need serious attention since in a report by World Bank it was revealed that 18 % of girls still marry before the age of 15. This is the highest rate in Asia and amongst the highest in the world. Moreover it was also found that women and girls face multiple forms of discrimination due to their gender, and socio-economic status and are especially vulnerable to sexual and gender-based violence [8].

This situation is definitely an issue to be alarmed for and needs considerable attention. With this respect microcredit seems to prove beneficial as literature reveals that the prevalence of violence tended to decrease as the duration of membership with the microcredit organization increased. It is also evident that greater economic opportunities for women, ensured through access to credit, awareness increasing activities and skill training, would enhance the self-esteem and status of women within households, improve spousal relationships and therefore reduce domestic violence [9]. Not just to reduce violence, microcredit is believed to enhance social and gender equality and eliminate poverty, which would reduce hardship among women [10]. It should be noted that gender equality and empowered women are catalysts for multiplying development efforts.

The key concept of microcredit has evolved over the years and is not limited to providing credit to the poor, but incorporates a bundle of other financial services including savings, insurance, remittances and non-financial services such as financial literally training and skill developing programs; thus microcredit is now referred to as microfinance [11].

Given the fact that microfinance is a common tool for enhancing women status and alleviating poverty it is not less of drawbacks. [11]. Microfinance creates a situation of indebtedness and even in many instances...
seems to make poverty situation worse. A study shows that the impact of microfinance worldwide as a tool to escape poverty, does not perform well [12]. Moreover researchers have indicated that the main cause of the global economic crisis is due to high interest rate, a concept quite common for conventional microfinance [13][14][15]. To solve this negative consequence, the concept of Islamic microfinance can be utilized. As Islamic microfinance is partnership and involves no interest the debt burden does not fall upon the poor.

The rest of the paper will discuss about the rationale, the objectives followed by literature review.. Finally the paper will also portray the findings, limitations and provide recommendation.

II. RATIONALE OF THE STUDY

Both conventional and Islamic microfinance have had their share of contribution to financially involve women. In many aspects Islamic microfinance serves better though the scope has been limited. A study revealed that traditional microfinance has shifted its focus to profit oriented business. This leads to its failure in satisfying the Muslim community [16]. Literature also reveals that low literacy rate and lack of opportunities are among the reasons that made Muslim societies remain in poverty [17].

Islamic microfinance is seen to bring improvements in human capital development, education and skills development, better provision of physical capital and wider access to credit for the productive poor [18].

Despite the positive contribution of both modes of finance there exists challenges which need to be studied and overcome. Thus this study is significant in addressing this issue.

III. OBJECTIVES

The objectives of the research are firstly to review the current literature on both traditional and Islamic microfinance to ring forth the contribution in women development and secondly to identify the possible challenges that affect providers of both traditional and Islamic modes of financing so as to improve their current performance

IV. LITERATURE REVIEW

A. Microfinance:

Microfinance has been a significant field of study after Dr. Muhammad Yunus won the Noble peace price and UN declared 2005 as the Microcredit year. For Bangladesh this sector shows strong resilience and continues to contribute towards enhancement of macroeconomic growth. There exists a large body of literature that seeks to determine the impact of microcredit especially on poverty alleviation [19][20][21][22][23]. All these studies to some extent indicate a positive outcome of microcredit. In addition to measuring poverty reduction, studies have also measured the impact on income and expenses due to microcredit involvement. It is usually a tool used for rural development and increases income, increases consumption pattern and improves lifestyle pattern [24][25][26][27][28]. Khandaker (2003) finds that microfinance has spill-over effect in the local economy thereby increasing local village welfare though it seems to be better at reducing extreme poverty more than moderate poverty[29].

Microfinance has been acknowledged as an important element tool in boosting the productivity with their principles to help finance micro entrepreneurs and poor by small loan besides the terms and conditions of these loans are generally flexible and easy to understand [30]. The microfinance program offered by both the commercially driven Micro Finance Institutions (MFIs) and government sponsored MFIs has made a positive impact in improving income and upgrading the standard of living of the poor in both rural and urban areas through micro entrepreneurship and women entrepreneurs development [31].

These conventional schemes targets women more than men. The main reason could be that women perform better than men [20]. Reference [32] pointed out that microcredit has become imperative to alleviate poverty and to improve families’ wellbeing and the results also confirmed that microcredit is strongly linked with children’s education, income and assets. When a comparative study has been made between male and female borrowers. Moreover women who received microcredit had a higher self worth and better access to capital although it led to higher workload. She also determined that microcredit in many cases actually enhance women decision making ability in the household [33].

In the case of Bangladesh, microfinance programs generate a remarkable impact on rural women in the area of social empowerment, awareness and education, which helps them to be more socially liberated, and more economically sovereign in their families and localities [34]. It also increases their skills in financial management and increases their association in the society as they are part of groups and are continuously involved in managing income, expense and other financial matters through discussion with their group mates [35]. Women’s participation in such programs increased their mobility to visit places and also increased their ability to be involved in both small and large purchases which was not the case for non-borrower [36]. A comparative study between BRAC and non-BRAC women in the levels of economic dimensions of empowerment found that the BRAC women were more empowered economically compared to control groups [37].

Despite the success stories there are still several criticisms of microfinance. Studies reveal that the impact of conventional microfinance has been questioned given
the critics addressed to the financing process of microfinance institutions (Abdul Rahman, 2007). Hulme and Mosley (1997) reveal that the institutions that provide credit have success in recovery because they provide credit to middle income and upper poor rather than hard core. Khandaker (1999) also finds that with increasing duration the impact of microcredit actually starts to decline. This could be the reason why the number of members starts to dropout in the long run (Karim and Osad 1998). Looking into the long term effect of microfinance Johnson and Rogaly (1997) says that although borrowers remain successful in the short run, they face downturn in ownership of asset, income generation and thus results in higher default rate. There are some economic problems for MFIs including asymmetric information, economic viability, low rate of return on investments (RoI), debt trap, high drop-out rate and non-graduation from poverty (Ahmed, 2002). In a study it was revealed that the impact of micro-credit and micro-savings on education is varied with limited evidence for positive effects. There is considerable evidence that micro-credit may be doing harm, and negatively impacting on the education of clients’ children [12]. Even with its contribution to poverty reduction and social development there exists studies which strongly questions it [44][45][46] indicating that it is not as effective as it is portrayed.

B. Islamic Microfinance:

Islamic microfinance is an innovation in the field of microcredit now known as microfinance. It indulges in the ethical and moral aspect of the client and thus focuses on a much different dimension than just credit. This is essential keeping in mind that conventional microfinance does not meet with the expectations of Muslims in accordance with their faith [47].

Some researchers argue that Islamic microfinance is nothing more than the conventional microfinance less the interest. It is however quite different. It is different not only in terms of interest but also under different dimensions. Unlike conventional microfinance models, Islamic microfinance does not provide loans. Numerous Islamic finance techniques are utilized for microfinance projects [48].

Critics argue that high interest rate (up to 30%) is charged to poor receivers in order to make financial gains for these institutions. On the other hand, Islamic microfinance makes use of Islamic financial instruments which are based on Profit Loss Sharing schemes rather than loan [43]. For this reason according to a study it was noted that Islamic microfinance had advantages over conventional microfinance with respect to its basic principle of interest-free loan, the elimination of interest, having a more varied source of funding and its ability to encompass the hard core poor. According to them this basic principle actually is a better tool for eradicating poverty and helping small business develop [49][50]. Even from performance perspective Islamic Microfinance institutions seem to perform better than conventional microfinance institutions. Since the acts of Islamic micro financing seem to be an activity of improving the lives of poor, it provides a motivation for the employees to serve and thus enhance productivity. On the other side, since payment is considered a religious obligation, the default rate is extremely low [43].

There are numerous Islamic finance techniques utilized for microfinance projects. Islamic finance aims to promote trade based on profit and loss sharing by excluding interest, speculation and uncertainty in business transaction [50]. The type of product depends on the nature of business, the expertise of the clients, and the tenor of the transaction. These products can be categorized as market based not for profit modes and market based for profit modes [48].

According to research it was found that the earnings of clients who used Islamic microfinance increased more than $3 per day after getting the facility [51]. Other studies also measures the positive impact indicating that Islamic microfinance plays a significant role in improving income [52] and improved quality of life [53]. A survey in 2010 complimented other researches indicating that Islamic microfinance increases income, productivity and expenditure [54]. Another research considering the impact on the Islamic microfinance found that household income would increase by 1.21 taka because of receiving additional one unit of investment by the borrower from the micro investment providers [55]. Islamic microfinance plays a significant role to improve the living standard, per capita income, awareness level (Educational level), ethical values, profitability, infrastructure position, employment level in the society, helpful to control the inflation and unequal distribution of wealth [51].

Research done by Salehin indicates members involved in Islamic finance programs have better moral values and also helps in repayment of loan [56]. This program also helped to improve of Islamic knowledge, relationship with spouses and other group members [43][48].

The role of Islamic microfinance is finance which not only is based on ethical values, it is also based on risk sharing, productivity and wealth enhancement This leads to achievement of Islamic socio-economic objectives, which include social justice, economic growth, efficiency and stability [57]. Another aspect of Islamic microfinance was measured by Rulindo and Pramanik. They investigated the role of spiritual and religious aspect of the scheme to enhance poverty. From research they have indicated that these two spheres have positive impact in health improvements and lowers negative behaviors like smoking and suicide. In addition these fields seem to have a positive impact on economic growth [58]. A study regarding women empowerment in Pakistan reveals that Islamic micro financing definitely enhances empowerment but other factors such as age, education etc are also influential factors [1]. Islamic microfinance institutions provide multi dimensional support to micro-entrepreneurs including spiritual, technical and
managerial. This in turn positively affects the business performance of entrepreneurs. Another study found clients having longer duration of Islamic micro financing have greater possibility of having better business and having higher income as well as live in better economic condition [59]. According to them this study, this basic principle actually is a better tool for eradicating poverty and helping small business develop. This is also indicated in another comparative research [30].

Research reveals that Islamic microfinance institutions have advantages over conventional institutions in dealing with default. The spirit of brotherhood and mutual help created by Islamic teachings induces members of a group or the center to assist in paying the arrears. And since not paying dues is considered sinful, the clients are more diligent in paying the dues as it is considered a religious obligation [43]. During the survey conducted in 2008, clients acknowledged the positive changes in their skills, social and economic condition after joining RDS [60].

Islamic Micro finance institutions deal with the family (via women) instead of just targeting women. By this approach it mitigates the adverse selection and moral hazard problems resulting from the fact that the intended use and user are different from actual use and user of funds respectively. Moreover, as Islamic modes of financing involve a real transaction, the moral hazard problem arising from the use of funds for purposes other than those intended is to a large extent eliminated. Using this strategy the problems arising from conventional microfinance is to a large extent eliminated [43][61]. A research reveals that that traditional microfinance has failed to satisfy the Muslims communities because of its shift from poverty to focus on profit oriented business. In addition to that, conventional microfinance loan being granted based on interest rate (riba from an Islamic point of view) is not tailored to the Muslims beliefs [16]. Thus Islamic microfinance can be a better alternative.

In Bangladesh the prime provider of Islamic microfinance is IBBL. This institution serves about 67 percent of the total Islamic microfinance activities in Bangladesh [62]. Through its Rural development scheme (RDS) IBBL’s aim is to create employment opportunities for the poor and alleviate poverty through income generating activities by adopting Islamic microfinance products [63]. The aggregate number of women borrowers is quite large for theIslamic MFIs in Bangladesh [64].

The literature on the impact of RDS reveals that there exists a transformation of behavior, ethical aspect and religious aspect in addition to increase in income. A survey done by researchers complimented other researches indicating that Islamic microfinance increases income, productivity and expenditure. He however added another finding that those socioeconomic factors like age, number of family members in farming, total land size and client’s ethics and morals had a positive and significant influence on household income [43].

Results also showed that micro-investment program had brought positive changes in their socioeconomic status. Significantly changing the members’ self confidence (80%), economic solvency (78%), communication skills (79%) and knowledge on business (76%) are highly gratulatory. RDS has proven to bring about a human development shift in the rural areas of Bangladesh [60]. The RDS scheme of IBBL has the highest credit repayment rate [63] and also provides a high rate of return [60].

Even Islamic microfinance faces challenges. Research shows that Islamic microfinance institutions lack training facilities to upgrade the skills and technical and Islamic knowledge. This is an important problem mentioned by 86% clients. Moreover majority (90.65%) of the borrowers had problems with investment size. They mentioned that the amount of investment they had received from the micro-investment providers was inadequate for them to pursue their income generating activities (IGAs) smoothly. It was observed that field supervisors are not well trained up and hence they found it difficult to motivate the rural people toward RDS and also to manage the centers [55].

Islamic micro-finance in is costly and risky because of the small size of their finances, the remote residential areas of the poor from the urban cities, and their uncollateralized risk [65].

Although majority of the clients spend their money in income generating activities, Rahman found in 2008 that some clients even invested their money in non productive activities like investment in house repairing, children’s marriage ceremony and furniture purchase etc. (M. M. Rahman et al., 2008).

Though the growth of RDS of IBBL is high the average rate of dropout (11%) is also alarming since it indicates a problem in client selection (Rahman 2010). Sustainability of Islamic MFI Due to the lack of fund mobilization and high admin costs, most MFIs and Islamic MFIs are not economically viable (Rahman and Dean 2013).

Islamic microfinance also has poor market penetration. Physical barriers of poor infrastructure like lack of markets, roads, power and communications can make it difficult for Islamic MFIs to gather information on their perspective clients. Also, the weakness of the Islamic microfinance infrastructures includes the limited spread of Islamic financial institutions and the relevant financial regulations, and the unavailability of popular Islamic micro finance agencies or effective program in these countries (Ali 2015).

V. CONCLUSION

From the above literature it is evident that both modes of finance can significantly contribute to different dimensions of development. It is also observed that though much research has been done on traditional microfinance, research in the field of Islamic microfinance is still less. Both modes of finance can enhance women development but are faced with
challenges. One suggestion could be to provide parallel Islamic modes of finance by the interest based providers to diversify and attract many Muslim consumers. Moreover by providing more ethical training to not just the clients but the entire family members many issues can be solved. For Islamic microfinance providers more fund could be attracted by having a Zakat fund which inturn could help the helpless women. They should also invest not only in promoting themselves but also motivating their employees so as to provide better service.

The present study would be beneficial for the policy makers, providers of Islamic microfinance and also add value to the current research field. It will address issues on how Islamic microfinance is actually helping women in their different aspects of life. Here the true impact of traditional and Islamic microfinance on the socio economic aspects will be addressed. This will let us understand how far this method is successful. The study by providing solution course will be highly beneficial for the institutions to enhance their performance. For current researchers in this field this will provide a highly informative data source where a lot of information regarding this field has been compiled and organized.

When women avail appropriate financial products, they become significant contributors to the strategic advancement of a nation. Financial inclusion of women in Bangladesh has been primarily done by conventional microfinance. This mode has proved its success pattern in various spheres like income generation, poverty alleviation, tackling violence, entrepreneurship and empowerment. Despite the success stories these institutions fail to address their challenges which could be to large extent mitigated with Islamic microfinance. Islamic microfinance provides much poverty reduction mechanism, this way when the modes are properly used it would ensure economic enhancement of the respondent. Moreover with proper monitoring and training they can ensure not only their wellbeing but also the economic advancement of the country.

The present study though aims to look at different dimensions of microfinance, it is not exhaustive. An in-depth interview could provide findings which were beyond the scope of the current study. Future researchers can conduct surveys with not just clients but also employees to address a complete solution course from all dimensions.

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Determinants of Problem Loan and Its Effect on the Financial Health: Evidence from Private Commercial Banks of Bangladesh

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Abstract - Bank is one of the most promising and contributing institutions of any country. Bangladesh is growing rapidly with its banking sector. But sometimes the banking sector faces problem to recover the loan it grants to its customers. Even some loans become problem loan or non-performing loan which ultimately impacts the financial health of that particular institution. This paper has given attention to find out the determinants of problem loan and its effects on the financial health of private commercial banking sector of Bangladesh. Descriptive analysis has found that most respondents think excess loan giving, improper analysis of loan proposal and creditworthiness, wrong collateral and documentation, inadequate supervision, overemphasis on bank's growth & profit etc. are the most important determinants of problem loan. Varimax rotated components matrix has driven five broad determinants of problem loan and finally regression analysis has found that NPL ratio affects both ROA and ROE of the banks negatively.

Keywords - Problem loan, financial health, commercial banks, Bangladesh.

I. INTRODUCTION

Bank contributes towards the economic development of any country by balancing its loans and deposit but sometimes it faces problem for classified or non-performing loan (NPL) or problem loan (PL). PL refers to those which the borrowers do not return as and when required inspite of repeated reminders and are not able to show any acceptable reasons for such failure. Willingness and ability to repay make ideal loan where as lacking of any one or both creates problem loan (Khan, 2009). NPL is the sum of borrowed money upon which the debtor has not made his scheduled payments for at least 90 days (investopedia.com). To judge the health of any bank, NPL ratio can be examined. Lower the ratio, better the health of the bank and vice-versa. In 2015, Bangladesh has stood 39th in nonperforming loan ranking in the world (theglobeandcomer.com). NPLs tend to be higher for banks with state ownership than for other groups (Micco et al. 2004). Banik and Das (2015) concluded that the amount of POCL is higher in state-owned commercial banks than private one. This research paper has tried to find out the determinants of problem loan as well as its effect on the financial health (ROA, ROE) of the selected private commercial banks of Bangladesh.

II. METHODOLOGY

This study has been conducted by using both primary and secondary data. Primary data have been collected by a structured questionnaire survey from fifty bankers (as per the convenience) of five different renowned and high business volume private commercial banks named as City bank limited (CBL), Prime bank limited (PBL), Al-Arafah Islami bank limited (AAIBL), Bank Asia limited (BAL) and Dutch Bangla bank limited (DBBL). The questionnaire is prepared based on the previous literature to identify the variables that affect the problem loan. Likert type five point scales have been used to collect the response where value 1 means strongly disagree and 5 means strongly agree for the statements. Secondary data have been collected from audited annual reports of the banks from FY 2011-2015, articles of different journals, text books, websites etc. Data have been analyzed through descriptive statistics (frequency, mean, standard deviation) and multiple regressions by using SPSS. The hypothesis of the study is as follows:

H₁: Problem loan affects financial health (ROA, ROE) of the banks.

For regressions \( Y = a_0 + b_1x_1 + e \) model has been used.

Here, \( Y \) = dependent variable (ROA, ROE), \( a_0 \), constant, \( x_1 \) is the independent variable (NPL or PL ratio), \( b_1 \) is the coefficient of the independent variable and \( e \) is the error term. So, the regression model is like:

III. RESULTS AND DISCUSSION

| Table 1 | DEMOGRAPHIC PROFILES OF THE BANKER |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Variables       | Category        | Percent         | Variables       | Category        | Percent         |
| Age             | Below 25        | 2               | Each bank's total banker | AAI BL          | 21              |
|                 | 25-35           | 45              | PBL              | 24              |
|                 | 35-45           | 40              | BAL              | 23              |
|                 | Above 55        | 13              | CBL              | 22              |
|                 | Total           | 100             | DBBL             | 10              |
| Job level       | Top             | 15              | Total            | 100             |
|                 | Mid             | 66              | Educational level | Graduate        | 40              |
|                 | Lower           | 19              | Postgraduate     | 60              |
|                 | Total           | 100             | Total            | 100             |
| Gender          | Male            | 70              | Experience       | 1-2 years       | 2               |
|                 | Female          | 30              |                  | 2-4 years       | 10              |
The very first reason of problem loan (according to mean value) is excess loan given by the banks (mean =4.86); second is improper analysis of loan proposal; third one is improper documentation of the loan. There are some other determinants of problem loan such as loan beyond the repayment ability of the borrower, inadequate loan supervision etc. The very least important determinant is loan given based on the deposit of the customer rather than net worth of his/her business (mean =4.36). It is also mentionable here that the response of the bankers is varying for all the factors of problem loan.

Reliability analysis
Refers to the fact that a scale should consistently reflect the construct it is measuring (statisticsolutions.com). The reliability result of this study data measured by Cronbach’s Alpha is .794 which implies very good situation for the analysis.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excess loan giving (V1)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.8600</td>
<td>1</td>
</tr>
<tr>
<td>Providing loan beyond the repayment ability (V2)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.7200</td>
<td>5</td>
</tr>
<tr>
<td>Improper collateral (V3)</td>
<td>50</td>
<td>4.00</td>
<td>5.00</td>
<td>4.8200</td>
<td>3</td>
</tr>
<tr>
<td>Improper documentation (V4)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.7800</td>
<td>4</td>
</tr>
<tr>
<td>Loans used out of bank's command area (V5)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.6000</td>
<td>11</td>
</tr>
<tr>
<td>Overemphasis on bank's growth &amp; profit (V6)</td>
<td>50</td>
<td>1.00</td>
<td>5.00</td>
<td>4.5400</td>
<td>13</td>
</tr>
<tr>
<td>Loan given based on the deposit rather than net worth (V7)</td>
<td>50</td>
<td>1.00</td>
<td>5.00</td>
<td>4.3600</td>
<td>15</td>
</tr>
<tr>
<td>Improper analysis of loan proposal (V8)</td>
<td>50</td>
<td>4.00</td>
<td>5.00</td>
<td>4.8300</td>
<td>2</td>
</tr>
<tr>
<td>Poor communications with the borrower (V9)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.6500</td>
<td>8</td>
</tr>
<tr>
<td>Loans to borrower with bad moral character (V10)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.5800</td>
<td>12</td>
</tr>
<tr>
<td>Analyzing credit worthiness with wrong information (V11)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.6400</td>
<td>9</td>
</tr>
<tr>
<td>Inadequate loan supervision (V12)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.7000</td>
<td>6</td>
</tr>
<tr>
<td>Failure to inspect borrower's business premise (V13)</td>
<td>50</td>
<td>4.00</td>
<td>5.00</td>
<td>4.6200</td>
<td>10</td>
</tr>
<tr>
<td>Sanctioning credit ignoring clients past bad record (V14)</td>
<td>50</td>
<td>3.00</td>
<td>5.00</td>
<td>4.6800</td>
<td>7</td>
</tr>
<tr>
<td>Difficult credit terms (V15)</td>
<td>50</td>
<td>1.00</td>
<td>5.00</td>
<td>4.4800</td>
<td>14</td>
</tr>
</tbody>
</table>

The Kaiser-Meyer-Olkin measure of sampling adequacy is 0.670, which is greater than 0.5 means that the chosen sample is adequate for factor analysis. This KMO value is also statistically significant at 1% level of significance. The Bartlett’s Test of Sphericity was tested through Chi Square and it has obtained a value of 271.161 at 105 degrees of freedom which is also significant.

Factor Analysis
Factor analysis is a statistical method used to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved variables called factors (google.com). The communalities of the factors are given below:

<table>
<thead>
<tr>
<th>Variables</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>V4</th>
<th>V5</th>
<th>V6</th>
<th>V7</th>
<th>V8</th>
<th>V9</th>
<th>V10</th>
<th>V11</th>
<th>V12</th>
<th>V13</th>
<th>V14</th>
<th>V15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Extract</td>
<td>.</td>
<td>.</td>
<td>.</td>
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</tbody>
</table>

Extraction Method: Principal Component Analysis
The total cumulative variance explained by factor analysis was 68.754 percent. The first factor explained 28.194% of total variance; whereas the second factor 14.262%, the third factor 11.947%, the fourth 7.208%, the fifth factor 7.142%. The first factor includes the reasons: funds used out of bank's command area, overemphasis on bank's growth & profit and lastly loan given based on the deposit rather than net worth. Second factor derives only three variables named as excess loan giving, providing loan beyond the repayment ability and difficult credit terms. Third factors shows that borrower’s bad moral character and loan given by ignoring clients past bad record are responsible for problem loan. Fourth and fifth factor include two variables each those are inadequate loan supervision, failure to inspect borrower's business premise, improper collateral and documentation respectively.

### TABLE 5
**ROATED COMPONENT MATRIX**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Excess loan giving (V_{14})</td>
<td>.860</td>
</tr>
<tr>
<td>Providing loan beyond the repayment ability (V_{15})</td>
<td>.675</td>
</tr>
<tr>
<td>Improper collateral (V_{16})</td>
<td></td>
</tr>
<tr>
<td>Improper documentation (V_{13})</td>
<td></td>
</tr>
<tr>
<td>Funds used out of bank’s command area (V_{1})</td>
<td>.798</td>
</tr>
<tr>
<td>Overemphasis on bank’s growth &amp; profit (V_2)</td>
<td>.853</td>
</tr>
<tr>
<td>Loan given based on the deposit rather than net worth (V_{17})</td>
<td>.800</td>
</tr>
<tr>
<td>Improper analysis of loan proposal (V_{14})</td>
<td></td>
</tr>
<tr>
<td>Poor communications with the borrower (V_{4})</td>
<td></td>
</tr>
<tr>
<td>Loans to borrower with bad moral character (V_{10})</td>
<td></td>
</tr>
<tr>
<td>Analyzing credit worthiness with wrong information (V_{11})</td>
<td></td>
</tr>
<tr>
<td>Inadequate loan supervision (V_{12})</td>
<td>.825</td>
</tr>
<tr>
<td>Failure to inspect borrower’s business premise (V_{13})</td>
<td>.621</td>
</tr>
<tr>
<td>Sanctioning credit ignoring clients past bad record (V_{19})</td>
<td>.828</td>
</tr>
<tr>
<td>Difficult credit terms (V_{18})</td>
<td>.806</td>
</tr>
<tr>
<td><strong>Eigen Value</strong></td>
<td>4.229</td>
</tr>
<tr>
<td><strong>Variance Explained (%)</strong></td>
<td>28.19</td>
</tr>
<tr>
<td><strong>Cumulative Variance Explained (%)</strong></td>
<td>28.19</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 11 iterations.

Factor analysis was conducted with varimax rotation to examine how the selected measures loaded on expected constructs. The above derived scree plot also gives an indication about the number of factors to be extracted from the data set. Five factors were recovered from the analysis with Eigen value greater than 1. An Eigen value is the amount of variance in the variable taken for the study that is associated with a factor. According to the Eigen value criteria, the factors having Eigen value more than 1.00 are included in the model. A factor that has an Eigen value of less than 1 is not better than a single variable because due to standardization each variable has a variance of 1 (Bajpai, 2011). Eigen values for the above five factors were 4.229, 2.139, 1.792, 1.081 and 1.071. The total cumulative variance explained by factor analysis was 68.754 percent. The first factor explained 28.194% of total variance; whereas the second factor 14.262%, the third factor 11.947%, the fourth 7.208%, the fifth factor 7.142%. The first factor includes the reasons: funds used out of bank’s command area, overemphasis on bank’s growth & profit and lastly loan given based on the deposit rather than net worth. Second factor derives only three variables named as excess loan giving, providing loan beyond the repayment ability and difficult credit terms. Third factors shows that borrower’s bad moral character and loan given by ignoring clients past bad record are responsible for problem loan. Fourth and fifth factor include two variables each those are inadequate loan supervision, failure to inspect borrower’s business premise, improper collateral and documentation respectively.

### TABLE 6
**DESCRIPTIVE STATISTICS OF THE MODEL**

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>25</td>
<td>9.5</td>
<td>8.10</td>
<td>4.5604</td>
<td>2.06965</td>
</tr>
<tr>
<td>ROE</td>
<td>25</td>
<td>1</td>
<td>2.129</td>
<td>1.29</td>
<td>.443</td>
</tr>
<tr>
<td>NPL</td>
<td>25</td>
<td>4</td>
<td>27</td>
<td>13.99</td>
<td>5.329</td>
</tr>
</tbody>
</table>

### TABLE 7
**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>.669</td>
<td>.448</td>
<td>.424</td>
<td>.336</td>
</tr>
<tr>
<td>2</td>
<td>.717</td>
<td>.514</td>
<td>.493</td>
<td>3.795</td>
</tr>
</tbody>
</table>

### 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>2.111</td>
<td>1</td>
<td>2.111</td>
<td>18.660</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>2.602</td>
<td>23</td>
<td>.113</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.714</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>350.252</td>
<td>1</td>
<td>350.252</td>
<td>24.324</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>331.191</td>
<td>23</td>
<td>14.400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>681.444</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), NPL
b. Dependent Variable: ROA, ROE

c. Predictors: NPL, TL

### COEFFICIENTS

<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 (Constant)</td>
<td>1.944</td>
<td>.166</td>
<td>11.738</td>
<td>.000</td>
</tr>
<tr>
<td>NPL to TL</td>
<td>-.143</td>
<td>.033</td>
<td>-.669</td>
<td>-4.320</td>
</tr>
<tr>
<td>2 (Constant)</td>
<td>22.406</td>
<td>1.846</td>
<td>11.995</td>
<td>.000</td>
</tr>
<tr>
<td>NPL to TL</td>
<td>-.1846</td>
<td>.374</td>
<td>-.717</td>
<td>-4.932</td>
</tr>
</tbody>
</table>

Dependent Variable: ROA, ROE

The above model summaries indicate there remains a correlation between independent variable and dependent variables. At 1% significance level the correlation between ROA and NPL is 66.9% whereas between ROE and NPL 71.7%. NPL explains 44.8% and 51.4% variation in ROA and ROE respectively and it negatively
affects both of them. Hence, H1 is accepted. Thus, it can be inferred that problem loan affects financial health (ROA and ROE) of the banks. So, the regression model will be:

\[
\text{ROA} = 1.944 - .143NPL + e \quad (I);
\]

\[
\text{ROE} = 22.406 - 1.846NPL + e \quad (II)
\]

The above derived models are telling if NPL increases by 1 point, ROA and ROE decreases by .143 and 1.846 point respectively.

V. CONCLUSION

Providing loan to different types of customers is the key function of banks but sometimes this loan become problematic to recover. This paper has identified the reasons of this problem loan and shown the effect of that on the return on asset and return on equity. According to descriptive statistics; excess loan giving, improper analysis of loan, improper collateral and loan documentation, providing loan beyond the repayment ability etc. are responsible for making problem loan. Factor analysis has derived five broad factors those are causing problem loan. Some important reasons of problem loan are: overemphasis on bank's growth & profit, loan given based on the deposit rather than net worth, funds used out of bank's command area, excess loan giving, ignorance of client’s past bad records, inadequate loan supervision and improper documentation etc. The Regression analysis has shown that both the ROA and ROE are negatively affected due to non-performing loan or problem loan. This is very risky position for the banks. So, the banks should take care of their loan and keep the reasons in their mind. This will help them reduce the problem loan and increase their performance (ROA and ROE). Government also should maintain strict regulation regarding this matter that in future this problem loan can be decreased to strengthen the financial performance of the banking sector of Bangladesh.

REFERENCES


Factors Measuring Digital Skills of Business Students: Empirical Evidence from Private Universities of Dhaka, Bangladesh

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Paper# ICBM-17-469

Abstract - Bangladesh’s digital economy is expected to grow notably over the coming years. At present, the jobs that are high in demand include a blend of technical and business-related roles that means it has become imperative for current business graduates to be digitally skilled merely to survive in this competitive and saturated job market. This paper aims to measure the digital skills of business students of the private universities of Dhaka in terms of five different dimensions; digital information management (DIM), digital communication (DC), digital transaction (DT), problem-solving (PS) and digital content creation (DCC). A total number of 104 undergraduate and graduate business students of two private universities were chosen randomly and surveyed with structured questionnaire. Data has been collected by using a 5 point rating scale and analyzed by employing SPSS. The result intends to identify to what extent these factors contribute to measure the digital skills and to explore the level of these skills among business graduates. The findings indicate that students are skilled at some factors whereas they are yet to develop their skills in other factors.

Keywords - Digital economy, digital skill, business graduates.

I. INTRODUCTION

In today’s world of Information, it is becoming increasingly important for learners to develop digital skills. According to the European Commission, digital skills are defined as the confident and critical use of ICT for work, leisure, learning and communication [11]. The ability to demonstrate digital skills is now recognized by both higher education institutions and employers not only in Bangladesh but also all over the world. Cornell University defines digital literacy as the ability to find, evaluate, utilize, share, and create content using information technologies and the Internet [3]. Therefore, it is becoming increasingly evident to identify the key digital skills and to what extent students are pursuing it. This study intends to measure the factors contributing toward investigating the digital skills of the business graduates studying in different private universities in Bangladesh. It also aims to measure the extent to which the students have acquired these skills. A total of 104 business students of both undergraduate and graduate level were examined on five different dimensions; DIM, DC, DT, PS and DCC; in order to measure their digital skills.

II. LITERATURE REVIEW

As digital skill is a new and emerging phenomenon in today’s world, it is still an untapped area in academic field of research. Therefore, a research gap is profound in this area and especially in Bangladesh context. This study attempts to minimize this gap although a number of scholars around the world have demonstrated the importance of this phenomenon in their researches- some of which are mentioned in this section.

Van Deursen A. & Van Dijk J. (2008) suggested a framework to measure the Internet skills of the Dutch population and concluded with the fact that Internet skill is highly associated with age and education level but not with gender, usage rate and duration [13].

Chinin C. & Boutin F. (2011) proposed and validated a digital skill frame work for the digital technology users in Canadian workplace in which four clusters were used: foundational skills, transversal skills, technical digital skills and digital information processing skills on the basis of perceived importance, usage level, workers proficiency [4].


Hall M., Nix I. & Baker K.(2012) identified and examined three demographic factors; age, gender and previous education level and found influence of gender and education level in the development of digital skill [10].

Bowles (2013) projected a model of digital literacy and e-skill consists of three levels of ICT uses namely; foundation ICT i.e. digital literacy at works, life and home, occupational roles requiring ICT and ICT at strategic level [2].

Keane & Keane (2013) identified four Cs of digital skills (deep learning, ICT and 21st century skills); creativity, communication, collaboration, critical thinking, productive users of technology [12].

Deursen A., Courtois C., Dijk J.(2014) added communication Internet skills to their existing skill framework comprised of operational, formal, information and strategic skills [1].

FYA’s New Work Order Report series (2016) reveals eight transferrable skills required for jobs which include problem solving, communication, creativity, teamwork,
financial literacy, digital literacy, critical thinking and presentation skills [8].

Unlike the previous studies, this paper aims to identify the factors contributing toward investigating the digital skills of business students in Bangladesh context and to measure the extent to which the students have acquired these skills.

III. METHODOLOGY

A. Research Model and Variables

This study aims to validate the model constructs of measuring digital skills of the business students studying at private universities in Bangladesh. The study considered five different variables adopted from [9] in order to measure the students’ overall digital skills. Thus the predicted variables include – digital information management skill (DIM), digital communication skill (DC), digital transaction skill (DT), problem solving skill (PS), and digital content creation skill (DCC). The conceptual framework of the study is as illustrated in figure 1. The study also considered four demographic variables; age, gender, education level and education background; as well as three technographic variables; device type, usage duration, usage frequency [10], [13].

![Research Model](image)

**Digital Information Management skill (DIM)** refers to the extent an individual is able to manage information by using digital devices and internet.

**Digital Communication skill (DC)** refers to the extent an individual is able to communicate with others by using digital devices and internet.

**Digital Transaction skill (DT)** refers to the extent an individual is able to transact safely by using digital devices and internet.

**Problem Solving skill (PS)** refers to the extent an individual is able to solve device and internet problems confidently.

**Digital Content Creation skill (DCC)** refers to the extent an individual is able to create digital contents.

B. Sampling, Data Collection and Analysis

The study sample has considered randomly selected business students from private universities of Dhaka, Bangladesh. A formal questionnaire comprising of 34 statements including demographic and technographic statements [10], [13] was distributed among 105 students of both undergraduate and graduate level; among them 104 was selected and 1 filled out questionnaire was omitted due to response error; thus the response rate of the survey is about 99.04%. The students were asked to evaluate and rate their level of digital skills according to the selected criteria mentioned in the questionnaire. The 34 statements were scaled at 5 point Likert scale in order to deduce the opinions of the respondents. Data were analyzed by using SPSS software in order to examine whether the variables have any relationship among themselves to conclude that the variables have significant effect on measuring the digital skills of an individual or not. Therefore, Pearson’s correlation has been employed [7]. Furthermore, the descriptive statistics of each variable have been calculated in order to examine at which particular digital application the individuals have got expertise in. Therefore, mean and standard deviations have been calculated. Moreover, the study attempts to measure the reliability and sphericity of data; therefore Cronbach’s Alpha and KMO test have been employed to examine the internal consistency and the sampling adequacy of each variable [5]. Lastly, a respondent profile highlights the demographic and technographic characteristics of the respondents considered in the study has been provided to guide the readers.

IV. STATISTICAL TREATMENT OF DATA AND INTERPRETATIONS

a. Respondent Profile

According to table 1, expressed in percentage terms, among undergraduates 60.8% respondents are male and 39.2% are female students. However, at the graduate level, 68% are male and 32% are female students; where n=104.

![Gender and education level of the respondent](image)

Table 2 depicts an overview of the usage of digital devices among the sample. It shows 80.8% of the respondents use smartphone in their daily lives.

![Frequency distribution on device type](image)
At the same time, it is noticeable from table 3 that more undergraduate level students use multiple devices than that of graduate level students.

Table 3
CROSSTABULATION OF DEVICE TYPE AND EDUCATION LEVEL

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Education Level</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Undergraduate</td>
<td>Graduate</td>
</tr>
<tr>
<td>Smartphone</td>
<td>70</td>
<td>14</td>
</tr>
<tr>
<td>Tablet</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Laptop</td>
<td>36</td>
<td>08</td>
</tr>
<tr>
<td>PC</td>
<td>20</td>
<td>07</td>
</tr>
<tr>
<td>Smart TV</td>
<td>07</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>25</td>
</tr>
</tbody>
</table>

b. Descriptive Statistics Analysis

Table 4 represents the descriptive statistics of digital information management (DIM) skills in which all the values of means are above the cut point of 3.5 except that of data storage on cloud and comparing deals; which means business students are yet to develop their digital skill in cloud computing and comparing online deals.

Table 4
DESCRIPTIVE STATISTICS ON DIGITAL INFORMATION MANAGEMENT SKILL (DIM) (n=104)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can use search engine to look for online info</td>
<td>3.92</td>
<td>.83</td>
</tr>
<tr>
<td>I can search for online deals to compare on websites</td>
<td>3.49</td>
<td>1.07</td>
</tr>
<tr>
<td>I can bookmark useful websites</td>
<td>3.51</td>
<td>1.11</td>
</tr>
<tr>
<td>I can store data on a device safely</td>
<td>3.96</td>
<td>1.00</td>
</tr>
<tr>
<td>I would rate my overall skill level in DIM</td>
<td>2.83</td>
<td>1.33</td>
</tr>
<tr>
<td>I would rate my overall skill level in DIM</td>
<td>3.55</td>
<td>.86</td>
</tr>
</tbody>
</table>

Table 5 shows the descriptive statistics of the digital communication (DC) skills among the business students in which it can be seen that all the values are positive and above 3.5 except the value regarding information sharing on cloud and negotiating with organizations; which means that business students are yet to develop their skills in sharing information on cloud and business communication.

Table 5
DESCRIPTIVE STATISTICS ON DIGITAL COMMUNICATION SKILL (DC) (n=104)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can communicate through email</td>
<td>4.02</td>
<td>.99</td>
</tr>
<tr>
<td>I can communicate through instant messaging</td>
<td>4.37</td>
<td>.89</td>
</tr>
<tr>
<td>I can communicate through video calls</td>
<td>4.14</td>
<td>1.12</td>
</tr>
<tr>
<td>I can communicate through social media</td>
<td>4.26</td>
<td>.96</td>
</tr>
<tr>
<td>I can post on forums to connect with communities</td>
<td>3.75</td>
<td>1.04</td>
</tr>
<tr>
<td>I can communicate with organizations about their products and services</td>
<td>3.45</td>
<td>1.10</td>
</tr>
<tr>
<td>I can share information on cloud</td>
<td>2.83</td>
<td>1.42</td>
</tr>
<tr>
<td>I would rate my overall skill level in DC</td>
<td>3.82</td>
<td>.82</td>
</tr>
</tbody>
</table>

Table 6 shows the descriptive statistics on digital transaction (DT) skills sample in which it is revealed that all the mean values fall below 3.5 except the mean values regarding digital ordering and buying and selling which is yet a “brick-and-click” scenario in most cases in Bangladesh.

Table 6
DESCRIPTIVE STATISTICS ON DIGITAL TRANSACTION SKILL (DT)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand digital buying and selling</td>
<td>3.75</td>
<td>1.08</td>
</tr>
<tr>
<td>I order and purchase from websites</td>
<td>3.50</td>
<td>1.25</td>
</tr>
<tr>
<td>I can book my travel online</td>
<td>3.37</td>
<td>1.26</td>
</tr>
<tr>
<td>I can manage my bank account online</td>
<td>3.24</td>
<td>1.27</td>
</tr>
<tr>
<td>I know how to make safe monetary transactions</td>
<td>3.25</td>
<td>1.21</td>
</tr>
<tr>
<td>I would rate my overall digital transaction skill</td>
<td>3.32</td>
<td>.95</td>
</tr>
</tbody>
</table>

Table 7 illustrates the descriptive statistics on problem solving (PS) skills in which it can be noted that all the mean values fall below 3.5 except the mean values of verification of information sources and minor problem solving – which are almost at the marginal level of the cut point. This finding indicates that business students are yet to develop their digital problem solving skills in order to be properly digitally skilled as problem-solving construct is the key to be digital skilled whereas other constructs in this framework are considered merely to measure digital literacy [9].

Table 7
DESCRIPTIVE STATISTICS ON PROBLEM SOLVING SKILL (PS) (n=104)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can solve my device problems using online tutorials</td>
<td>3.43</td>
<td>1.29</td>
</tr>
<tr>
<td>I can use feedback from other internet users to solve problems</td>
<td>3.39</td>
<td>1.15</td>
</tr>
<tr>
<td>I can verify sources of online information</td>
<td>3.50</td>
<td>.95</td>
</tr>
<tr>
<td>I can solve minor device/internet problems confidently</td>
<td>3.53</td>
<td>1.08</td>
</tr>
<tr>
<td>I can solve my internet problems without anyone’s help</td>
<td>3.21</td>
<td>1.25</td>
</tr>
<tr>
<td>I can solve problems through computer programming</td>
<td>2.90</td>
<td>1.17</td>
</tr>
<tr>
<td>I would rate my overall skill level in PS</td>
<td>3.25</td>
<td>.92</td>
</tr>
</tbody>
</table>

Table 8 illustrates the descriptive statistics on the digital content creation skills of the study sample in which it can be seen that all the mean values fall below 3.5 except the mean values regarding creating social media post and privacy setup. This indicates that the popularity of social media might have an influence.

Table 8
DESCRIPTIVE STATISTICS ON DIGITAL CONTENT CREATION SKILL (DCC) (n=104)

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can create a social media post</td>
<td>3.94</td>
<td>1.00</td>
</tr>
<tr>
<td>I can create online documents; google doc</td>
<td>3.22</td>
<td>1.35</td>
</tr>
<tr>
<td>I can create digital contents; picture, logo, text</td>
<td>3.45</td>
<td>1.23</td>
</tr>
<tr>
<td>I can create digital contents; video, music</td>
<td>3.07</td>
<td>1.23</td>
</tr>
<tr>
<td>I can create my own website</td>
<td>2.38</td>
<td>1.36</td>
</tr>
<tr>
<td>I can protect my personal data by creating privacy setups</td>
<td>3.92</td>
<td>1.15</td>
</tr>
<tr>
<td>I would rate my overall skill level in DCC</td>
<td>3.30</td>
<td>1.14</td>
</tr>
</tbody>
</table>
c. Test of Data Reliability

Table 9 summarizes the individual model variable’s scale reliability by calculating Cronbach’s alpha – which is a measure of internal consistency that says how closely related a set of items are as a group. Here, all the reliability coefficients show a higher level of 0.7 and above – suggesting that the items have relatively high internal consistency which indicates a good fit among the scale items [5].

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Information Management Skill (DIM)</td>
<td>0.767</td>
</tr>
<tr>
<td>Digital Communication Skill (DC)</td>
<td>0.796</td>
</tr>
<tr>
<td>Digital Transaction Skill (DT)</td>
<td>0.805</td>
</tr>
<tr>
<td>Problem Solving Skill (PS)</td>
<td>0.834</td>
</tr>
<tr>
<td>Digital Content Creation Skill (DCC)</td>
<td>0.829</td>
</tr>
</tbody>
</table>


d. Analysis of Correlations

Table 11 illustrates the correlations among the model variables considered in this study. According to the correlation matrix, all the variables are positively correlated to each other at 99% significance level. That means the model variables such as; digital information management skill (DIM), digital communication skill (DC), digital transaction skill (DT), problem solving skill (PS), and digital content creation skill (DCC) have positive significant correlation with each other.

**Correlation matrix among model variables (n=104)**

<table>
<thead>
<tr>
<th></th>
<th>DIM</th>
<th>DC</th>
<th>DT</th>
<th>PS</th>
<th>DCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIM</td>
<td>1</td>
<td>0.620</td>
<td><strong>0.534</strong></td>
<td><strong>0.532</strong></td>
<td><strong>0.625</strong></td>
</tr>
<tr>
<td>DC</td>
<td>0.620</td>
<td>1</td>
<td><strong>0.543</strong></td>
<td>1</td>
<td><strong>0.549</strong></td>
</tr>
<tr>
<td>DT</td>
<td><strong>0.534</strong></td>
<td><strong>0.543</strong></td>
<td>1</td>
<td><strong>0.532</strong></td>
<td><strong>0.577</strong></td>
</tr>
<tr>
<td>PS</td>
<td><strong>0.532</strong></td>
<td><strong>0.543</strong></td>
<td>1</td>
<td><strong>0.520</strong></td>
<td><strong>0.720</strong></td>
</tr>
<tr>
<td>DCC</td>
<td><strong>0.625</strong></td>
<td><strong>0.549</strong></td>
<td><strong>0.532</strong></td>
<td>1</td>
<td><strong>0.720</strong></td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2 tailed)**

Values derived from correlation analysis depict that correlation between DC and DIM, PS and DIM, DCC and DIM, DCC and PS are strong as the values are above 0.6; and the other values show moderate correlations [7].

IV. SCOPE AND LIMITATIONS OF THE STUDY

This study aims to measure the factors contributing toward the digital skills of the students of Business Studies in Bangladesh. However, it only considered to what extent these factors have effect on measuring the digital skills and to what level the students of private universities studying in Business Administration Department have acquired those skills. Therefore, the study does not take into account any other subsequent factors after being digitally skilled; such as employability, entrepreneurial abilities and the role of higher education institutions; and is limited to students of business discipline. However, the study can be further extended considering these factors in future.

V. CONCLUSION

The study confirms that the students of Business Studies at private universities need to develop their digital skills specifically in the areas of: cloud computing, online deals comparison, communication with organizations, safe online transactions, booking travels, device and internet problem-solving, digital content creation, and website designing. Soon even in Bangladesh digitalization will replace the old work methods and hence acquiring and nurturing digital proficiency are indispensable among business students to survive the competitive work environment of the 21st century.

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The Trends of Export and its Consequences to the GDP of Bangladesh

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Paper# ICBM-17-397

Abstract- The average growth of GDP of Bangladesh is over 6.5% since 2004 which is largely driven by its exports of ready-made garments (RMG), remittances and the domestic agricultural sector. It is also found that the export grew at the rate of 16.31% of over the last 26 years from the fiscal year 1990 to 2016 was which paly an important role to expand the GDP of Bangladesh and thus contributes to reduce the poverty level. The total export has increased to 47 times in fiscal 2016 compare to 1990. The export was 4.99% of the GDP in 1990 (at current market price) whereas in 2016 it stood to 13.67% of GDP. Over the last 26 years, the ratio of export to GDP has increased to 4.07% per year on an average. This boost expand of export is mainly driven by the rich and constant growth of the readymade Garments, RMG (including Knit Wear & Hosiery) sector which grew at the rate of 18% per year. RMG contributes almost 69% (excluding EPZ) of the total export in the year 2016 whereas it was 38.95% of the total export in 1990. The Tea grew negatively at the rate of -8.49%. Although the growths of Jute; Fish & Shrimp; and Leather were positive which were 7.61%, 7.92%, and 8.56% respectively but the shares of all the products along with Tea to the total export have fallen drastically over the last 26 years which is not a good sign for the overall export in the coming year. This has to be taken seriously by policy makers.

Keywords-Export, GDP, RMG, Growth rate

Introduction

Export means all transfers of the ownership of goods from residents of a country to non-residents and services provided by resident’s producers of the country to non-residents are to be covered. It is not simply to send goods or services across national borders for the purpose of selling and realizing foreign exchange. For many developing countries, exports also serve the purpose of earning foreign currency with which they can buy essential imports- foreign products that they are not able to manufacture, mine or grow at home. Developing countries, in other words, sell exports, in part, so that they can import. Exporting goods and services can also further advance developing nations’ domestic economies.

Bangladesh’s export performance so far presents signs of strength in its export basket (Sattar, 2015). Export has a huge impact on the economy of a Nation like a developing country, Bangladesh whose huge percent of yearly Budget depends on Export that is, the foreign currencies.

The economy Bangladesh has changed drastically in last 30 years. The economy of Bangladesh is largely driven by its exports of ready-made garments (RMG), remittances and the domestic agricultural sector. Ready-made garments (RMG) industry that now ranks second in export in the world. Within a very short period of time it has become the largest export earner of the country through a major positive forward thrust in the early 90s (Shahriar, Banik, & Habib, 2014). Bangladesh is expected to come out of the least developed country (LDC) bracket and achieve the status of a mid-income country within the next seven years for making significant progress in some key areas. To take this challenge, faster and sustainable growth rate of export can play a vital role in the coming year. Bangladesh earned US $ 30.3 billion from exports in the fiscal year 2015-2016 which was almost 17.34% of GDP. The readymade garments (Clothing, textiles, Knitwear) comprise about 89% of export whereas the major items are footwear and fish (mainly shrimp). The main destinations of export are USA, UK, Germany and European Union (EU). To make Bangladesh poverty free, it is very important to keep sustainable grown in the economy where export can play a vital role. This is for it necessary to analyze the trend of export over the years from different prospects. Vohra (2001) examined the relationship between the export and growth and showed that when a country has achieved some level of economic development than the exports have a positive and significant impact on economic growth. In the paper we will analyze the export of Bangladesh from the fiscal 1990 (1 July 1989 to 30 June 1990) to 2016 (1 July 2015 to 30 June 2016)

Back Ground

Export of Bangladesh is calculated with the help of FOB basis which is one of the renowned trade terms in the world. Free on board (FOB) is a trade term that indicates
whether the seller or the buyer has liability for goods that are damaged or destroyed during shipment between the two parties. Bangladesh is the largest exporter of clothing in the world after China. The garment industry is the backbone of the development of the country. Bangladesh has the lowest labor-cost in the region which contributes to the competitive position of Bangladesh to attract clothing brands. The lucrative performance of export trade has been singlehandedly driven by the RMG sector, which has easily proved by its share in total exports rising from virtually nothing in 1980 to 81.13 percent in 2013 (Razzaque & Eusuf, 2007).

Main items of export of Bangladesh are Raw jute, Tea, Frozen food (Fish, shrimps, prawns etc.), Agricultural products, Jute products, Leather, Petroleum by products, Woven garments Knit wear, Chemical products (Pharmaceutical products), Footwear, Handicrafts, Engineering products, Ceramic products, and others (Bicycle, Terry towel, home textiles, etc.). The growth of knit garments export was facilitated by the remarkable free market access of EU during the period 1996-2005 resulted in the highest export share of RMG from Bangladesh (Haider, 2007).

The destination of the export products are counties like United States, Germany, United Kingdom, France, Spain, Italy, Canada, Belgium, China, and Japan. But other countries with large population can be a good market for Bangladesh such as Australia, Brazil, Chile, China, India, South Korea, Mexico, Russia, South Africa and Turkey are looking to be the more promising markets, followed by Malaysia, New Zealand, Norway, Saudi Arabia, and Thailand (Sattar, 2015).

To increase the inflow of foreign investment and to achieve rapid economic growth of the country, particularly through industrialization, special steps have been taken by the Government of Bangladesh since 1980 by setting up Export processing Zones (EPZ) in the country. EPZ also is playing an important role to uplift the export of Bangladesh.

Methodology

In our analysis, mainly we will focus the growth rates. There are many methods to calculate the growth rates. The following two methods will be used to calculate the grow rates. The arithmetic growth rate will be used for the year to year or annual (one year) growth rate and the for the overall or average growth rate over the years the least-squares regression (log-linear) growth rates will be applied.

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:

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

Where:

- $r_t$ = The growth rate in year t
- $Y_t$ = Represent the value in year t
- $Y_{t-1}$ = Previous year value

Least-squares Regression (log-linear) growth rates:

The regression method takes into consideration to all data points in the series; thus, it is the least likely to be biased by a randomly high or low beginning or ending year (The Treasury, 2002). It is also known as log-linear least squares regression method as the time trend equation is obtained through a logarithmic transformation of the compound growth equation:

$$ Y_t = Y_0 (1 + r)^t $$

Where $Y_0$ is the value of the variable Y at time 0 (beginning year); $Y_t$ is the value of the variable at time t and t is the time taking values 0.1, 2, …n; and r is average growth rate over the n-period time series.

Taking natural logs on the both sides. Letting $\alpha = \ln Y_0$ and $\beta = \ln(1 + r)$ , and adding a disturbance term $\epsilon$, the equation becomes

$$ \ln Y_t = \alpha + \beta t + \epsilon $$

Then by the Ordinary Least Squares (OLS) method, we obtain an estimate of the slope coefficient $\hat{\beta}$ and thus the compound rate of growth by regression method is obtained as follows:

$$ r = e^{\hat{\beta}} - 1 $$

Or, $r = \exp(\beta) - 1$

To get the percentage growth rate then it will be multiplied by 100.

The least-squares growth rate can be used for any type of indicators as it does not assume any pattern of growth (Kakwani, 1997; Mawson, 2002; OCED, 1997 and The World Bank, 2015).
Results

Analysis the Export of Bangladesh

In the article, the export of Bangladesh (at current market price) has been analyzed from the year 1989-90 (1 July 1989 to 30 June 1990) to 2015-16 (1 July 2015 to 30 June 2016) that is, from the fiscal year 1990 to 2016. Growth rates have been calculated based by using the method of least square regression model for the changes of overall export as well as for the different major components of export such as Readymade Garments (including Knit Wear & Hosiery); Raw Jute and Jute goods; Fish & Shrimp; Leather Hides, Skins & Leather products); tea; and export from the export processing zone (EPZ). First of all, the contribution of export in the gross domestic products (GDP) is analyzed in the following.

Overall export and GDP

The growth rate of export over the last 26 years from the fiscal year 1990 to 2016 (at current market price) was 16.31% which play an important role to expand the GDP of Bangladesh and thus contributes to reduce the poverty level. In the year 1990, the amount of total export was 5004 crore taka whereas in the year 2016, total amount of export has reached to 236802 crore taka which 47 times compare to year 1990. It is also noticed that the yearly growth (year to year) of export over the last 26 years was not steady which is shown in figure-1.

![Figure 1: Year to year growth of the export of Bangladesh](image1)

From the Fig. 1 it is observed that the export has grown positively year to year except the year 2002 when it has experienced a decline of 4.58% from the year 2001.

Due to the sharp grow of export over the last 27 years; the ratio of export over the GDP of Bangladesh has also been changed significantly, which is depicted in Fig.2.

![Figure 2: The ratio of export (in %) to GDP of Bangladesh](image2)

In 1990, export was 4.99% of the GDP (at current market price) whereas in 2016 it stood to 13.67% of GDP. On an average, the ration of export to GDP has increased to 4.07% over the last 26 year.

Trend of Share in Export

RMG:

Over the last 26 years, (from 1990-2016) Readymade Garments (including Knit Wear & Hosiery), RMG grows on an average 18% per year. This tremendous growth of RMG plays a significant role to pick up the export of Bangladesh which is visible in Fig.3.

![Figure 3: Year to year growth rates of RMG and export (in %) of Bangladesh](image3)
the years 1990 to 2016. On the other hand, RMG contributes almost 69% (excluding EPZ) of the total export in the year 2016 which was only 39% in 1990. From the years 1990 to 2016, the share of RMG to the export has increased constantly, which is shown in Fig.4.

![RMG % of export](image)

Fig.4. The share of RMG to the export (in %) of Bangladesh for the year 1990 to 2016

Average share of RMG to the export was 62% over the year 1990 to 2016. The share of RMG to the export has increased 1.4% per year over the period of last 26 years which was possible due to the tremendous growth of export during the same period of time.

**Share of Other Items in Export**

The growth trends and the contributions to export of other major items such as Jute (Raw and Jute goods); Fish & Shrimp; Leather (Hides, Skins & Leather products); Tea; and also the products which are exported from the export processing zone (EPZ) are summarized in table I.

<table>
<thead>
<tr>
<th>Export Items</th>
<th>Average yearly growth (%)</th>
<th>Share in Export (%) in 1990</th>
<th>Share in Export (%) in 2016</th>
<th>Growth of Share in Export (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMG</td>
<td>17.92</td>
<td>38.95</td>
<td>68.88</td>
<td>14.38</td>
</tr>
<tr>
<td>Jute</td>
<td>7.61</td>
<td>27.66</td>
<td>2.94</td>
<td>-7.48</td>
</tr>
<tr>
<td>Fish &amp; Shrimp</td>
<td>7.92</td>
<td>10.83</td>
<td>1.27</td>
<td>-7.21</td>
</tr>
<tr>
<td>Leather</td>
<td>8.56</td>
<td>10.97</td>
<td>0.90</td>
<td>-6.66</td>
</tr>
<tr>
<td>Tea</td>
<td>-8.49</td>
<td>2.32</td>
<td>0.006</td>
<td>-21.32</td>
</tr>
<tr>
<td>Export from EPZ</td>
<td>23.80</td>
<td>2.22</td>
<td>17.98</td>
<td>6.5</td>
</tr>
</tbody>
</table>

It has to be mentioned that to calculate the average growth rates over the year 1990 to 2016 all the values for each year have been considered as the growth rates are calculated by using the method of least square regression. From table I, it is noticed that the average yearly growths of Jute; Fish & Shrimp; Leather; and Tea are far below from the yearly growth of overall export which is 16.31% whereas the growth rates of RMG and EPZ are above the overall growth rate of export. Over the years 1990 to 2016, export from the EPZ has grown on an average 23.8% per year and thus, the share of EPZ in the total export is increased to 17.98% in the fiscal year 2016, whereas its share was only 2.22% in 1990 of the total export.

As the growths of Jute; Fish & Shrimp; Leather; and Tea are not able to keep pace with the growths of RMG and EPZ, the shares of these products have been fallen drastically over the last 26 years which are more illustrated in Fig.5.
Fig.5. Share of Jute; Fish & Shrimp; Leather; and Tea to the export (in %) of Bangladesh for the year 1990 to 2016

From the Fig.5, it is clearly understandable that the contributions of Jute; Fish & Shrimp; Leather; and Tea to the total export (in %) of Bangladesh have been decreasing constantly almost every year which is not a good sign to keep the growth rate of overall export in the coming year.

Conclusion

The Export of Bangladesh has been deeply analyzed over the last 26 years from 1989-90 to 2015-16 that is from the fiscal year 1990 to 2016. The growth rate of export over the last 26 years from the fiscal year 1990 to 2016 was 16.31% which play an important role to expand the GDP of Bangladesh and contributes to reduce the poverty level. The total export has increased to 47 times in fiscal 2016 in terms of the fiscal year 1990. In 1990, export was 4.99% of the GDP (at current market price) whereas in 2016 it stood to 13.67% of GDP. Over the last 26 year the ratio on an average has increased to 4.07%.

This boost expand of export is mainly driven by the rich and constant growth of the readymade Garments, RMG (including Knit Wear & Hosiery) sector which grew at the rate of 18% per year. RMG contributes almost 69% (excluding EPZ) of the total export in the year 2016 whereas it was 38.95% of the total export. It has to be mentioned that the export from the export processing zone (EPZ) has also been increased tremendously. Over the years 1990 to 2016, export from the EPZ has grown on an average 23.8% per year and thus the share of EPZ in the total export is increased to 17.98% in the fiscal year 2016, whereas its share was only 2.22% in 1990 of the total export.

The average yearly growths of Jute; Fish & Shrimp; Leather; and Tea are far below from the yearly growth of overall export which is 16.31% whereas the growth rates of RMG and EPZ are above the overall growth rate of export. The average growths of export of Jute; Fish & Shrimp; Leather and Tea were 7.61%, 7.92%, 8.56% and -8.49% respectively over the last 26 years from 1990 to 2016. Although the growths of Jute; Fish & Shrimp; and Leather were positive but the shares of all the products to the total export have fallen considerably over the last 26 years which is not a good alarm to keep the growth rate of overall export in the coming year. This has to be taken seriously by policy makers. It is also important to notify that the share of RMG to the export has increased to only 1.4% over the last 26 years although RMG itself contributes almost 69% (excluding EPZ) of total export which indicates that the share of RMG to export has reached to the ceiling.

References


The trends of Import and its contribution to the Economy of Bangladesh

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Paper# ICBM-17-419

Abstract- As a developing country, Bangladesh needs to import lots of foreign goods and materials to keep pace of economic development as well as to meet its necessary demand. It found that the overall import of Bangladesh has been grown at the annual rate of 14.8% over the last 22 year from the fiscal year 1994 to 2016. It is also observed that the year to year growth rate that is one year growth rate of import is not stable. The highest rate of growth was in fiscal year 2011 compared to year 2010 which was 46.14% and the second highest growth was in the fiscal year 1995 which was 39.9%; whereas in the fiscal years 2002 and 2013 the growth rates were negative which were -2.62% and -3.07% respectively. It is observed that the growth rates of import items which are below the overall growth rate of import have experienced negative growths to share to the total import. It is also observed that in most cases when the growth rate (year to year) of import increase the growth rates of GDP also increase or vice versa. So it can be said that import play a very important role to pick up the GDP and as a whole the overall economy of the country which is very significant for the economic prosperous of a county.

Keywords: Import, GDP, Export, Economy, Growth rate

Introduction

Import is a process that involves bringing goods and services into one country from another. Nations are most likely to import goods and raw materials which they cannot produce efficiently and cheaply or might be unavailable in the domestic market. Along with export, import is a crucial component of international trade. There is a common assumption that imports may hinder the economic development of a country, but in reality that might not be the case. The best way of making an economy efficient is to export its excess goods and import the products it has deficiency of which suggests that importing is as much important as exporting in order to build an effective economic system. Bangladesh, as a developing country is no different in terms of meeting its demands through foreign goods which has been portrayed in this analysis through different aspects of economy over the years.

As a developing country, Bangladesh needs to import lots of foreign goods and materials to keep pace of economic development as well as to meet its necessary demands. Looking into the statistics, it is clear that the import of Bangladesh reached the peak of $38.3 billion in 2015, making it the 54th largest importer in the world whereas in 1995, the amount was about $4.58 billion. This significant growth of import over the last 20 years (more than 8 times) is reflected in the GDP of Bangladesh. From 2000, the economy has been growing at 6 percent on average every year and makes the 28th largest economy in 2016. Furthermore, in 1995, the import and export were respectively 17.3% and 10.9% of total GDP, whereas in 2015, both of the percentages increased to about 24.7% and 17.3% respectively (Bangladesh Bank: 2015-16). This change indicates the increased growth of export and import is leading to an eventual growth in GDP.

Bangladesh mainly import the items as food grains like Rice and Wheat; other food items like Milk & Dairy Products, Spice, Oil seeds, Edible oil, Pulses (all sorts), Sugar; and other commodities like Clinker, Crude Petroleum, Petroleum Products, Chemicals, Pharmaceutical Products, Fertilizers, Dyeing & Tanning Materials, Plastic & Rubber articles thereof, Cotton Yarn, Textile & articles thereof, Staple fibers, Iron & Steel; and Capital machinery (Bangladesh Bank, 2015-16). In this paper, the import of Bangladesh (at current prices-nominal) will be analyzed from different prospects and the growth rates of different import items will be compared over the last 22 years from the fiscal year 1994 to 2016 and the contribution of import to the growth in the overall economy.

Methodology

In our analysis, mainly we will focus the growth rates. There are many methods to calculate the growth rates. The following two methods will be used to calculate the grow rates. The arithmetic growth rate will be used for the year to year or annual (one year) growth rate and the for the overall or average growth rate over the years the least-
squares regression (log-linear) growth rates will be applied.

**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:

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

Where:

- \( r_t \) = The growth rate in year \( t \)
- \( Y_t \) = Represent the value in year \( t \)
- \( Y_{t-1} \) = Previous year value

**Least-squares Regression (log-linear) growth rates:**

The regression method takes into consideration all data points in the series; thus, it is the least likely to be biased by a randomly high or low beginning or ending year (The Treasury, 2002). It is also known as log-linear least squares regression method as the time trend equation is obtained through a logarithmic transformation of the compound growth equation:

\[ Y_t = Y_0(1 + r)^t \]

Where \( Y_0 \) is the value of the variable \( Y \) at time 0 (beginning year); \( Y_t \) is the value of the variable at time \( t \) and \( t \) is the time taking values 0.1, 2, …, \( n \); and \( r \) is average growth rate over the \( n \)-period time series.

Taking natural logs on both sides Letting \( \alpha = \ln Y_0 \) and \( \beta = \ln(1 + r) \), and adding a disturbance term \( \varepsilon \), the equation becomes

\[ \ln Y_t = \alpha + \beta t + \varepsilon \]

Then by the Ordinary Least Squares (OLS) method, we obtain an estimate of the slope coefficient \( \hat{\beta} \) and thus the compound rate of growth by regression method is obtained as follows:

\[ r = e^{\hat{\beta}} - 1 \]

Or, \( r = \exp(\hat{\beta}) - 1 \)

To get the percentage growth rate then it will be multiplied by 100.

The least-squares growth rate can be used for any type of indicators as it does not assume any pattern of growth (Kakwani, 1997; Mawson, 2002; OCED, 1997 and The World Bank, 2015).

**Results**

**Analysis the Import of Bangladesh:**

The import of Bangladesh has been analyzed from the year 1993-94 (1 July 1993 to 30 June 1994) to 2015-16 (1 July 2015 to 30 June 2016) that is from the fiscal year 1994 to 2016. By using the least square regression method, it found that the overall import of Bangladesh has been grown at the annual rate of 14.8% over the last 22 year from the fiscal year 1994 to 2016. To know the growth rate more details, it is necessary to analyze the growth rate of the overall import from year to year. The annual growth rates that is the growth in the current year compare to the previous year of import is shown in Fig.1.

![Fig.1: Yearly growth rate of total import for the fiscal year 1994 to 2016.](image)

From the above fig.1, it is visible that the year to year that is one year growth rate of import is not stable. The highest rate of growth was in fiscal year 2011 compare to year 2010 which was 46.14% and the second highest growth was in the fiscal year 1995 which was 39.9%; whereas in the fiscal years 2002 and 2013 the growth rates were negative which were -2.62% and -3.07% respectively.

**Import and GDP**
Import plays an import role to raise the overall production which is known as the gross domestic product (GDP) of a country. This is for it is important to compare the growth rates of import to the grow rates of GDP. In this case the GDP at Current Market Price is considered. In the Fiscal year 1994, the import was 12.4% of the total GDP whereas in the fiscal year 2016, the import rose to 18.1% of GDP. From the time series data, it is found that the share of import to GDP rose on an average at the rate of 2% per year during the fiscal years 1994 to 2016. Let us compare the annual growth rates of total import (at current prices) to the growth rates share of import to GDP for the fiscal years 1994 to 2016 which is shown in fig.2. It has to be mentioned that the growth rates share of import to GDP is calculated from the yearly share of import to the GDP at current market price.

Fig.2: Yearly growth rate of import and its share to GDP for the fiscal year 1994 to 2016 (at current prices).

From the fig.2, it is clearly evident that the annual growth rate of import’s share to GDP is followed by the annual growth rate of overall import which means as the growth of import increase its contribution to the GDP also increase or vice versa. Let us analyze the import in terms of the yearly growth rates of GDP which can be visualized in fig.3 as follows.

Fig.3: Yearly growth rate of import and GDP for the fiscal year 1994 to 2016 (at current prices).

From the fig.3, it is observed that most of the years the growth rate of import is higher than the growth rate of GDP. It is also important to notice that in most cases when the growth rates of import increase the growth rates of GDP also increase or vice versa. So it can be said that import plays a very important role to pick up the GDP and as a whole the overall economy of the country which is very significant for the economic prosperous of a county.

Growth rates of different items

Let us summarize the growth rates of items of the import of Bangladesh for the fiscal year 1994 to 2016. The grow rates are calculated by using the least square regression method over the last 22 years from the fiscal year 1990 to 2016. Although the shares to the total import for the different commodities are shown for the fiscal year 1994 (FY1994) and fiscal year 2016 (FY2016) only, the growth rates of share to import are calculated by considering the shares to import over the last 22 years. The summary of the analysis is shown in the table-1 as follows:
From the table I, it is observed that the growth rates of items which are below the overall growth rate of import (14.76%) have experienced negative growth to share to the total import as for example Rice (-5.31%); Milk & Dairy Products (-1.38%); Oil seeds (-2.17%); Crude Petroleum (-0.65%); Pharmaceutical Products (-0.26%); Yarn (-0.22%); Textile and articles thereof (-3.43%); and Others (-2.95%). The highest growth was achieved by Sugar (28.9%) followed by Clinker (23.6%); Cotton (20.87%); Petroleum Products (20.13%); Staple fibers (18.5%); Capital machinery (18.48%); Iron & Steel (17.85%) and import from EPZ (17.45%) over the fiscal year 1994 to 2016.

### Conclusion

The analyses which are done above can be summarized in the table II.

<table>
<thead>
<tr>
<th>Table II</th>
<th>Summary of the analyses of import for the fiscal year 1994 to 2016.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Growth (%)</td>
</tr>
<tr>
<td>Import</td>
<td>14.8</td>
</tr>
<tr>
<td>Import share to GDP</td>
<td>1.99</td>
</tr>
<tr>
<td>Food grains (rice &amp; wheat)</td>
<td>11.8</td>
</tr>
<tr>
<td>Food items (others than food grains)</td>
<td>17.4</td>
</tr>
<tr>
<td>All Food items (food grains and food items)</td>
<td>15.3</td>
</tr>
<tr>
<td>Commodities (other than food grains and food items)</td>
<td>14.7</td>
</tr>
</tbody>
</table>

From table II it is noted that Food items (other than food grains) include Milk & Dairy Products; Spices; Oil seeds; Edible oil; Pulses (all sorts); and Sugar. It found that the overall import of Bangladesh has grown at the annual rate of 14.8% over the last 22 year from the fiscal year 1994 to 2016. It is also analyzed that the year to year that is one year growth rate of import is not stable. The highest rate of growth was in fiscal year 2011 compare to year 2010 which was 46.14% and the second highest growth was in the fiscal year 1995 which was 39.9%; whereas in the fiscal years 2002 and 2013 the growth rates were negative which were -2.62% and -3.07% respectively. It is also observed from the table II that the annual growth rate of all Food items was 15.3% of which 11.8% was for Food grains (rice & wheat); and 17.4% was for Food items (other than food grains). It is also found that the share of food items increase by 0.48% whereas the share of commodities has slightly decreased to 0.05% during the last 22 years.

In the Fiscal year 1994 the import was 12.4% of the total GDP whereas in the fiscal year 2016 the total share of import to GDP rose to 18.1%. From the time series data it is found that the share of import to GDP rose on an average at the rate of 2% per year during the last 22 years for the fiscal years 1994 to 2016. It is observed that the growth rates of items which are below the overall growth rate of import (14.76%) have experienced negative growth to share to the total import.
Moreover, it is observed that in most cases when the yearly growth rate (year to year) of import increase the growth rates of GDP also increase or vice versa. So it can be said that import play a very important role to pick up the GDP and as a whole the overall economy of the country which is very significant for the economic prosperous of a country.

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Context of Tobacco Packaging in Bangladesh: regulatory and consumer perspective

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Abstract-Packaging is defined as the method of crafting, assessing and manufacturing packages of a product for distribution and sales purpose. In terms of marketing, packaging initiates a concealed but vigorous move to grasp customer’s attention. But then again, tobacco packaging is somehow an intricate process as it entails some government regulated procedures. In order to control tobacco consumption and to raise health awareness, tobacco package now embraces health warning visuals and messages. Again, colors and text are used in a constrained manner to abolish the curiosity of potential consumers. Hence this paper attempts to highlight the packaging regulations practiced in tobacco industry of Bangladesh. The purpose of this paper is to determine how tobacco companies are maintaining packing regulations regardless upgrading their profit margins. Another objective is to find out to what extent consumers are persuaded about health warning. The perception of consumers about tobacco packet is detected through a survey targeting potential, existing and former tobacco consumers. Responses were collected from total 200 samples in Dhaka city. The survey result emphasizes on the effectiveness of sensible tobacco packaging among consumers. However, as it a sensitive practice in Bangladeshi context, getting opinion was a bit challenging. The paper is generated based on both primary and secondary information. Survey data has been analyzed using descriptive analysis and regression model. The pragmatic analysis shows that recent change in tobacco packet is significantly noticeable (around 70% respondent agreed) but consumers (almost 45% respondent) believe that these changes cannot bring any change in consumption. The outcomes can lead the manufacturers about consumers’ insights as well as can provide the readers a general view of this sensitive industry.

Keywords—Packaging, Tobacco Industry, Regulations, Consumer’s perception.

I. INTRODUCTION

Packaging of any consumer goods plays a significant role in marketing and sales of the business. Packaging that inside all the information of the products is a preliminary source to pull the attention of customer in purchase points. In a world where people have less than a minute to make the purchase decision, the design, color and content of the packet needs to be eye-catching. But what if the product fits in a subtle industry? How marketers will formulate package when specific laws are enforced and hundreds social activists are condemning the product? Here comes the reality of tobacco industry. As tobacco is an injurious product causing many deadly diseases, tobacco companies find it very challenging doing business in any country. However, World Health Assembly has approved an outline named as World Health Organization Framework Convention on Tobacco Control (WHO FCTC) in 2003. Under this guideline, all the countries have to oblige with some common demands to tobacco use.

Packaging of tobacco products is a complex subject as it has to go through some country-wise regulations. According to the Amendment of the Smoking and Tobacco Usage (Control) Act passed in May 2013, every packet has to include 50 percent pictorial health warning on both sides. This act is now executed in Bangladesh after Rules Amendment. The companies are currently working on with this new packaging regulation. Studies said that plain packaging has reduced smoking by changing beliefs and attitudes and created health awareness among general people. The purpose of this paper is to find out the tobacco packaging regulation, how it is implemented and how it affects the consumption. Besides this this study will highlight the participation of government to upsurge health alertness.

II. METHODOLOGY

For this study, descriptive research is followed under conclusive research design. Survey research method is used for this study, where a survey is conducted with a self-administered questionnaire. The target samples in this survey are the potential, existing and former consumers of tobacco products. Therefore, 200 samples from tobacco consumers are taken as respondents. Again the respondents is selected on the basis of their tobacco consumption status, therefore judgmental sampling of non-probability sampling technique is followed in this research.

A simple and organized questionnaire consisting of sixteen fixed-alternative questions was prepared to
collect some specific information from the respondents. The primary data of the research is collected through a survey from the respondents. A questionnaire is prepared in Google drive and the link was sent to individual respondent for reply. The secondary data is collected from journal papers and web pages related to the study. For data analysis, descriptive analysis, cross tabulation and chi-square test is implemented using SPSS. Besides that regression model has been adopted to analyze consumer perception.

III. LITERATURE REVIEW

Packaging is considered as a receptacle for containing, shielding and classifying products with a direct contact that can also publicize the product in the market. It can be a brand communication instrument presenting knowledge about the product and organization (Silayoi & Speece, 2007). Packaging is often not certainly related to product function, but it is obtained as an essential part of buying and consuming process (Underwood, 2003).

The initial responsibility of product packaging is to attract final customer by creating competitive advantage through its outlook (Ampuero & Vila, 2006). Tobacco packaging functions as a fundamental part of tobacco marketing (Hammond, 2010). According to tobacco companies, tobacco packaging creates brand navigation and brand differentiation in adult consumers’ mind (Japan Tobacco International, 2008). Packaging creates emotional and psychological positioning in consumer’s mind with specific cigarette brands (Pollay, 2004). In order to attract existing and potential smokers, tobacco companies lead all the elements of packaging from tier of ribbon to texture of color (Hashtings & Moodie, 2010).

Tobacco warning first promoted in 1970, only associated smoking with infections without clearly expressing how it causes illness (Hoek, Gendall, & Louviere, 2011). By 1991, almost 77 countries across the world obligated health warnings based on country’s nature. Initially this provided information are entirely ignored and failed to bring any change (Chapman & Carter, 2003).

Graphical warnings are promoted in many nations with positive results (Hammond D., 2011). In 2000, 16 visual images were presented in tobacco package conveying dangers of smoking in Canada. Following this step, around 30 countries introduced pictorial health warnings in packet of cigarettes (Cunningham, 2008). This implementation confirmed that smoking threats are highly discerned through warnings and forcing to reduce cigarette consumption (Borland, et al., 2009). According to a survey, when graphical warnings were introduced in Brazil, more or less two-third of the total smokers expressed their desire to quit smoke (Cavalcante, 2003). In order to get attention and evoke information, graphical health warnings can associate far better than textual warnings (Peterson, Thomsen, Lindsay, & John, 2010; Strasser, Tang, Romer, Jepson, & Cappella, 2012). Pictorial warnings are more observable than text and raise awareness among smokers to prevent consumption (Nakkash & Lee, 2009). Graphic labels succeeded to bring more reaction such as distress and concern among both young and adult smokers because of their liveliness (Kees, Burton, Andrews, & Kozup, 2010).

Both smoker and non-smoker group remark that graphical warnings are more effective than textual one. Non-smoker teenagers who can be potential smoker assessed that graphical warnings prevent more their interest towards rather than textual one (Vardavas, Connolly, Karamanolis, & Kafatos, 2009). Similarly, young existing and previous smokers believed warnings with text and picture were consequently more preventive than only text one (O’Hegarty, Pederson, Nelson, Mowery, Gable, & Wortley, 2006).

Latest facts suggest that plain packaging increases the quitting efforts (Cancer Research UK. The answer is plain — campaign for plain cigarette, 2012). Design of plain package reducing color and enforcing warnings effect the actions of smokers as well as prevent the potential smokers from testing tobacco products (Mahood, 2003). The alternative use of pictorial health warning in plain packaging upgraded the cessation rate of tobacco consumption in Thailand, Canada and other nations (Hammond, 2010). Again, researchers suggest that graphical warnings can be easily understood by illiterate people in India as almost fifty percent death of tobacco consumption is occurred in uneducated society (Jha, Guindon, & Joseph, 2011). Plain packaging boosted the effectiveness of health warning by increasing perceptibility and removing colorful logos of different brands (Mizerski, 2011).

IV. RESULTS

World Health organization in 2003, presented the very first public health agreement named as ‘Framework Convention on Tobacco Control (FCTC) which promotes plain or standardized tobacco packaging to control tobacco use among the member nations. It is a global strategy to govern packaging and labeling measures including health warnings as well as wide-ranging bans on tobacco advertising, promotion and sponsorship.

**Purpose of Plain-packaging:**

The objectives of plain-packaging are as follows:
Decreasing attractiveness of tobacco products

Reducing the outcome of tobacco packaging as a form of advertising and campaign

Eliminating package design methods that promotes that some products are less injurious than others and

Enlarging the visibility and efficiency of health warnings.

Standardized or plain packaging prohibits brand images, promotional evidence and color on packaging and promotes display of brand name and products name in standard color and font style.

Tobacco Control policy in Bangladesh

Bangladesh has signed FCTC treaty on June 16, 2003 and consented on June 14, 2004 as one of the early members of WHO FCTC. The very first noticeable participation of Bangladesh is shown in Smoking and Tobacco Products Usage (Control) Act on February 27, 2005. This act is amended in 2013. The Smoking and Tobacco Products Usage (Control) Rules, 2015 explains some provision of Smoking and Tobacco Product Usage Act, 2005 including requirements of package warnings.

A list of the laws regarding packaging followed by the tobacco manufacturers in Bangladesh are given below:

<table>
<thead>
<tr>
<th>Law Source</th>
<th>Article Number</th>
<th>Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking and Using of Tobacco Products (Control) Act, 2005</td>
<td>Art. 10</td>
<td>March 15, 2005</td>
</tr>
<tr>
<td>Smoking and Tobacco Products Usage (Control) (Amendment) Act, 2013 (Act No. 16 of 2013)</td>
<td>Art 10</td>
<td>May 2, 2013</td>
</tr>
<tr>
<td>Ministry of Health &amp; Family Welfare Pictorial Health Warnings (Issued pursuant to Smoking and Tobacco Products Usage (Control) (Amendment) Act, 2013 and Smoking and Tobacco Products Usage (Control) Rule)</td>
<td></td>
<td>March 12, 2015</td>
</tr>
</tbody>
</table>

(Packaging and Labeling Requirements)

The tobacco control act instructed health warning text and visual pictures on tobacco product packaging. The warnings advise general awareness about health hazards of tobacco consumption asserting smoking causes cancer, heart disease and other dangerous diseases.

Health Warnings/Messages Features:

According to the law, picture and text message health warning must cover at least 50 percent of the front and the back part of the principal display area. If the package does not have two main areas, at least 50 percent of the foremost area must be covered with pictorial warnings. One of seven warnings for smoked products and one of two warnings for smokeless products must be exhibited at any given time. The warnings must be alternated every three months. Text warnings must be written in Bangla in white letters against a black background. The ratio of picture to text is 6:1.

Besides that misleading words (For instance- “Light” or “Low tar” are banned on tobacco package. However, color, symbol and numbers can be used on tobacco package. Health warnings are required to be displayed both on unit packaging and outside packaging (such as cartons). Again, tax stamps and other essential marks must be placed in a way that it does not obscure the warning. Note that, use of logo, brand names, color and other design are partially restricted to avoid misleading packaging. Manufacturers are suggested to collect electronic file of pictorial health warnings from the government. It is mandated to print “Approved for sale in Bangladesh only” on sides of each and every tobacco package. (Bangladesh Gazette: Smoking and Tobacco Products Usage (Control) Rule 2015, 2015).

Punishments:

Any stakeholder (For instance- Manufacturer, wholesaler, Importer and Retailer) who disrupts the requirements of tobacco packaging and labeling (sanctioned by the law) will be penalized with up to six months captivity in jail or a fine up to two lakhs BDT, or in some cases punished with both. Repetition of violence may result in double of the punishments. (Country Details For Bangladesh, 2016).

Consumer Perception on Tobacco Packaging

Table 1 shows that 85% was aged in between of 19-30 years. The employment status shows, there are a slight difference between employed (49%) and unemployed (51%). As most of the respondents belongs to youth group (aged 19-30year) years), therefore unemployment percentage is high. The majority of the sample belongs to existing tobacco consumer group (57%) whereas there were 23% former consumer and 21% potential consumer. Table 1
summarizes that younger people (between 19-30 years) seem to be more existing consumer than the aged one ($x^2 = 9.04$ and $p = 0.06$). Again, existing consumer shows to be more significant in terms of employment status ($x^2=9.33$ and $p=0.0627$)

Table 1: Sample Distribution and Consumption status of tobacco across age and employment position

<table>
<thead>
<tr>
<th>Variables</th>
<th>Potential Consumer</th>
<th>Existing Consumer</th>
<th>Former Consumer</th>
<th>Total</th>
<th>Chi-Square</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-18</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>9.04</td>
<td>0.06</td>
</tr>
<tr>
<td>19-30</td>
<td>22%</td>
<td>62%</td>
<td>16%</td>
<td>85%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-50</td>
<td>20%</td>
<td>20%</td>
<td>60%</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 Above</td>
<td>0%</td>
<td>33%</td>
<td>67%</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>15%</td>
<td>62%</td>
<td>23%</td>
<td>49%</td>
<td>0.933</td>
<td>0.063</td>
</tr>
<tr>
<td>Unemployed</td>
<td>26%</td>
<td>52%</td>
<td>22%</td>
<td>51%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Facts on consumption rate

Consumption length and daily consumption rate are two important factors that can sort whether a consumer is reactive of package or not. When a consumer takes the product for a long period and in a significant quantity, it increases the chance of noticeability. Table 2 shows that, among 158 respondents (existing consumer and former consumer) 48% are taking tobacco products for more than 5 years. However, on an average the maximum daily consumption rate is 5 to 10 sticks.

Table 2: Consumption data of Existing and Former consumers (n=158)

<table>
<thead>
<tr>
<th>Consumption Period (in Years)</th>
<th>Percentage of Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>17%</td>
</tr>
<tr>
<td>1-5 years</td>
<td>36%</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>48%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Daily Consumption Rate</th>
<th>Percentage of Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 Sticks</td>
<td>43%</td>
</tr>
<tr>
<td>5-10 Sticks</td>
<td>33%</td>
</tr>
<tr>
<td>More than 10 Sticks</td>
<td>24%</td>
</tr>
</tbody>
</table>

Predictors for changing Consumption

While collecting data, 75% of the former consumers expressed that the reason for their quit of tobacco is general health awareness. On the other hand, 17% former consumers gave up consumption because of religious view.

Table 3: Influencing Factors for changing consumption status

<table>
<thead>
<tr>
<th>Percentage of Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason for being Former consumer</td>
</tr>
<tr>
<td>General health awareness</td>
</tr>
<tr>
<td>Religious view</td>
</tr>
<tr>
<td>Morality (Others)</td>
</tr>
<tr>
<td>Reason for being potential consumer</td>
</tr>
<tr>
<td>Similar age preference</td>
</tr>
<tr>
<td>Social trend</td>
</tr>
<tr>
<td>Family inheritance</td>
</tr>
</tbody>
</table>

Additionally, the potential consumers stated that in 55% case they are attracted towards tobacco because of similar age preference. However, Social trend (for 36% potential consumers) and family inheritance (for 9% potential consumers) are other reason for being interested in tobacco products.

Table 4 shows two regression analysis considering two dependent variables (Find change in tobacco package in last few years and think health warnings will bring change in future). Again, age-group and consumption status is considered as independent variables. Remarkably, in first test, age and consumption status variables are insignificant (With $B = .127$, -.244 and $p = 0.643$, 0.267). Again in second test, age and consumption status variables are almost significant (With $B = -0.216$, 0.270 and $p = 0.290$, 0.102).
Table 4: Factors affecting perception on changing tobacco package

Dependent Variable: Find change in tobacco package in last few years

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Constant</td>
<td>4.080</td>
<td>0.636</td>
<td>6.418</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>0.127</td>
<td>0.271</td>
<td>0.069</td>
</tr>
<tr>
<td></td>
<td>Consumption Status</td>
<td>-0.244</td>
<td>0.217</td>
<td>-0.165</td>
</tr>
</tbody>
</table>

Dependent Variable: Think health warnings will bring change in future

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Constant</td>
<td>1.99</td>
<td>0.474</td>
<td>4.198</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-0.216</td>
<td>0.202</td>
<td>-0.155</td>
</tr>
<tr>
<td></td>
<td>Consumption Status</td>
<td>0.27</td>
<td>0.162</td>
<td>0.241</td>
</tr>
</tbody>
</table>

V. FINDINGS & CONCLUSION

The finding shows that most of consumers (according to 64.2% respondents) at first notice the brand specific name in any tobacco product. Among color, picture, brand specific name and written information, brand specific name is the most visible one. According to the survey outcome, respondents believe less use of color on tobacco packet does not reduce interest of consumption whereas, only a few people (39.6% respondents) think it can diminish the interest. Maximum (45.2%) respondents find the brand specific name (such as- Full flavor, lights, real, switch etc.) on package makes it appealing. Some respondents (34%) consider the name as information about the product.

The relationship between changes in tobacco package and rise of health awareness is significant. Consumers agree that they find noticeable change in tobacco package. But somehow most of them consider that these warnings will fail to bring health awareness. Maximum consumers consider that changing in tobacco package and use of graphical warnings cannot fetch any change in consumption rate. On the scenario of huge promotion on pictorial health warnings, most of the respondents (45.30%) consider that this regulation cannot change consumption frequency. However, almost one third of the respondents answered that in the long run process. This outcome gives a positive hope.

Introducing pictorial and textual warnings in tobacco packet was a radical phase to bring awareness. It has now gradually bringing change in consumption of tobacco products. However, as Bangladesh is a low-income developing country, literacy rate is very poor here. Therefore, only printing awareness is not enough to convey the health messages. It is needed to explain the general people why all these changes in packaging are brought in front. Then these initiatives will result in positive drive. According World Health Organization (WHO), if Bangladesh can implement the goals of NCD (No communicable diseases), by 2025 only 30% male will consume tobacco. Again, it is anticipated that female consumption rate will be 0% (WHO global report on trends in prevalence of tobacco smoking, 2015).
REFERENCES


Appendix

Consumers at first notice in tobacco package

- Picture: 17.0%
- Brand Specific Name: 11.3%
- Color: 7.5%
- Written Information: 64.2%

Use of less color in packet reduces interest

- Yes: 60.4%
- No: 39.6%

Consumer finds specific Brand name as -

- Appealing: 45.2%
- Informative: 34.0%
- Insignificant: 20.8%
Necessity and Potentiality of a Deep Sea Port in Bangladesh

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Abstract - Global maritime trade is rising day by day, but the facilities needed to support for smooth running of this trade is not enough. The main purpose of this research is to find out the necessity of deep sea ports to facilitate the trade and to explain the Potentiality of Deep Seaports for Bangladesh from maritime business through the Bay of Bengal. The area selected for the study is the Bay of Bengal especially on the coast of Bangladesh. Both the primary and secondary research methodology are applied and combined by the qualitative methods of primary research and existing literature review methods of secondary research where data is extracted from both the primary and secondary sources. Moreover, this paper also demonstrates the existing port performance and port transport facilities in Bangladesh and its further development opportunities to mitigate the demand of maritime transport within the country and also for regional and international requirements. The world economy totally depends on Sea trade and more than 90% of overseas trade is routed through sea ports as a result the necessity of a deep sea port is going to be increased. Inter modal transport services are highly required within the country as well as for Nepal, Bhutan, Myanmar, and Kunming of China and seven sisters of India in the South Asia that may be supplied from Bangladeshi seaports. A port, especially deep sea port can play an important role on behalf of the maritime nation for dominating in world maritime trade. Since the Bay of Bengal is close to Bangladesh, so developing a deep seaport in this area can contribute significantly to the seaborne trade within the Bay Of Bangle.

Keywords: Deep Sea Port, Economic Growth, Maritime Transport, Intermodal, Export-Import, Transit-Transshipment

1. INTRODUCTION

World’s largest Bay is the Bay of Bengal where all south Asian regional trade through over there by ships. Shipping is the most critical globalized trade of the world. We cannot think of the world trade without shipping and because of shipping, seaports are in huge demands. All seaports have not equal advantages in case of restrictions like their variation in operation, length, breadth and draft not only that most of shipping company towards to made of large ship due to economy of scale. Considering these factors the needs of Deep Seaport\textsuperscript{1} are significantly rising day by day. As the geographical location of Bangladesh is excellent there is a lot of scope to upgrade its port facilities so that we may handle ships of larger sizes. Though there are three running ports, but all are unable to provide access of longer ships. All shipping companies are now much more concerned to use big ships in terms of reducing operational cost. As a result, after a period of time these three ports will remain unused. Therefore the necessity of a port with deeper channel is vital for our country to place larger vessel for reducing transportation expenses and increasing sea borne trade as well. If there is a deep seaport, many countries especially, Nepal, Bhutan, Myanmar, Seven Sisters of India and Kunming of China will rely on our country. We can prevail the benefits of most of trading through Bay of bangle. Ultimately the economical situation of Bangladesh will be improved dramatically [1]. That is why the objectives of the research is to explain the need of deep sea port in Bangladesh and how it will contribute to the development of our economy. This paper is based on both primary data and secondary data where online data is collected from digital libraries, journals, Conference papers, etc.

2. MATERI A L S AND METHOD

A number of papers, official documents, publications and report on Bay of Bengal and Sea Port was reviewed and also discussed with different stakeholders of maritime professional during this study to collect the data and different kind of information. Study area was confined to the Bay of Bengal especially on the coast of Bangladesh which is mainly characterized by maritime industrial zone of the country (Figure.1).

\textsuperscript{1} A deep sea-port is a port which has adequate depth of water to accommodate very large vessel. A port is usually an area or platform entered into from the sea, by vessels, boats, ships, which also allows for protected staging and anchoring or docking for these ships to load and unload consignments and continue up towards its destination.

FIGURE 1: Map: Bay of Bengal


This study follows both the primary and secondary research sources and combined by the qualitative methods
of primary sources and literature review methods of secondary sources where data will extract from both the primary and secondary sources. Primary data will be collected through the unstructured questionnaire and also through the literature review, which will also identify relevant secondary sources. This research is conducted as following diagrams.

![Research Methodology](image)

**FIGURE 2:** Diagram showing the Research Methodology used for this study

### 3. RESULTS AND DISCUSSION

#### 3.1 The Importance of the Bay of Bengal

The Bay of Bengal, the largest bay in the world, forms the north-eastern part of the Indian Ocean. It is bordered mostly by India and Sri Lanka to the west like roughly triangular, Bangladesh to the north, and Myanmar (Burma) and the Andaman and Nicobar Islands to the east. It is covered with an area of 2,172,000 square kilometers (839,000 sq mi). It forms an important, if neglected, part of southern Asia. Bookended by Thailand to its east and India on its western side with Bangladesh, Myanmar and Sri Lanka in between, this part of the Asian region hosts a huge population and is passed by some of the world’s most important trading routes. About 35% people all over the world lived in surrounding the Bay of Bengal so a large number of export-import is happening over there that is called trade through Bay of Bengal [2].

#### 3.2 Seaborne Trade through Bay of Bengal

Maritime transport is essential to the world’s economy as over 90% of world trade measured by volume is carried by sea. It is the most cost-effective way of moving goods and raw materials around the world [3]. Merchandise trade is almost exclusively handled in containers. The main container ports on the Bay of Bengal based on 2012 port statistics are Chennai (India), 1.6 million TEU per annum; Kolkata/Haldia (India), 0.6 million TEU per annum; Chittagong (Bangladesh), 1.5 million TEU per annum; and Thilawa/Yangon (Myanmar), 0.45 million TEU per annum. A number of other ports (Vizag, Mongla, and Kuttapalli, for example) do handle containers but, either because they are new or handle small volumes, they do not provide helpful information on the main container trade in the region. It should be noted that very few containers are transshipped at any of these ports. Colombo, which is a significant transshipment centre, handles 4.0 million TEU with 70% being transshipped, leaving approximately 1.2m TEU as origin and destination containers. From an analysis of WTO trade statistics, less than 10% of these containers would appear to be destined for Southeast Asia; this assertion is not supported by analysis of container destination data from these ports of origin. Analysis of port data suggests a far higher percentage of the containers are routed to Singapore, Colombo, Port Klang, and Port of Tanjung Pelepas, the major regional transshipment centers. However, further integration of South Asia and Southeast Asia through trade will depend significantly on the further development of the container trade in the Bay of Bengal and the container line connections the ports in the Bay of Bengal develop with ports in ASEAN, and to some extent East Asia. In comparison, the origin and destination containers handled by the major ports of Southeast Asia are Port Klang, 3.7 million (another 6.4 million were transshipped); Singapore, 6.5 million (another 26.0 million were transshipped); Penang, 1.4 million (limited transshipment); and

#### 3.3 The Changing Container Trade and its Implications for Ports in the Bay of Bengal

Containerization has brought significant change in shipping and transformed shipping over the last 50 years. Now almost all merchandise trade is handled in containers, whereas in the past merchandise trade relied on general cargo ships. Without high quality and low cost access to seaborne container trade, it is almost impossible to conceive of a country or region being well integrated into world, or regional trade. There are two primary drivers which allowed the container revolution to steer in spectacular growth in global trade over the last 50 years. Unitization is the first one and it has a substantial impact on handling and transport costs; so long as a port has an effective container terminal, unitization is possible. Another one is scale and the benefits of scale in terms of unit cost. Put simply, there is a strong relationship between the size of the container ship and the cost per TEU of operating container ships. Figure 7 indicates the nature of this relationship, and is based on relatively old technology in terms of ship hull forms and engines. The relationship has been strengthened by advances in technology over the last 10 years.
At present, the three major, interlinked transformational trends of container trade are:

i. Introduction of new “mega” ships carrying 12,500–18,000 TEU.
ii. Older “mega” ships carrying 6,000–9,000 TEU being relegated to minor shipping routes well before their useful life has expired, and
iii. The emergence of a large number of underused container ships carrying 3,000–6,000 TEU.

The impact of these trends on container trade in the Bay of Bengal will increase pressure for container shipping lines to use ever larger ships to carry the large volume of containers being generated from the region. This will transmit pressure on ports and container terminals to be ready to accept larger ships, or accept movement of large volume to those ports that can accept large ships. Unless ports can provide the improved access, they will remain or return to ship containers to “mega” hubs for transshipment, or the hinterland of those ports that can accept the larger ships, causing longer drayage of containers by road. Both these will increase the overall cost of transporting the container. By implication, transport cost as a percentage of overall costs increases for merchandise goods, making the hinterlands of the affected ports less competitive in the global or regional economy.

3.4. Seaborne trade of Bangladesh and Present Sea Port

Bangladesh, a country having world’s fastest growing economies, expected to rise at a 7.1% clip 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 $60 billion per year in value by 2021. This is all in a country without adequate maritime infrastructure.

3.4.1 Chittagong Port

The Port of Chittagong is the largest seaport in Bangladesh, located by the estuary of the Karnaphuli River in Patenga, near the city of Chittagong. Historically, it is the most important port of Bangladesh and has been playing an essential part in the economic development of the country. It is a shallow water seaport dominated by trade in containerized manufactured products (especially garments, jute and jute goods, leather products, fertilizers and seafood), raw materials and to a lesser extent passengers. Window berthing system was introduced at the seaport on 6 August 2007, enabling the sea port to provide the arrival and departure times of all ships. Two berths at the port terminal are kept in reserve for emergency. In 2011, the port handled 43 million tons of cargo and 1.4 million tones of containers. The port handled 1.5 million TEUs (twenty equivalent units) containers in 2014–15, up from 1.8 million TEUs in the previous year, according to the CPA Traffic Department. Port of Chittagong is ranked as world’s 90th busiest port in the world in 2013. The port of Chittagong has a yard, which is 45,539 square meter and a container holding capacity of 1,000 TEUS. It has a fleet of tugs with a maximum of 2250 BHP and hoper dredger with a capacity of 2,500 cubic meters. Till June 1999 the port was handling 12.5 million tons of cargo including one million tons of inland cargo per year. The port has For Ocean-Going Vessels: General Cargo Berths: 12, Container Berths: 8, Specialized Berths for Bulk handling: Dolphin Oil Jetty (For POL): 1, Grain Silo Jetty: 1, Cement Clinker Jetty: 1, TSP Jetty: 1, CUFL Jetty: 1, KAFCO Urea Jetty: 1, Ammonia Jetty: 1, Repair Berths Dry Dock Jetty: 2 and Mooring Berths River Mooring: 10 .Also for Inland Coasters and Vessels: Jetty Berths (For (POL): 1, Concrete Berth (For Grain Handling): 1, Pontoon Berths (For POL): 3, Pontoon Berths (For Cement): 1 and Single Point Mooring: 10. The port has a dry dock that repairs ships of up to 16,500 DWT. Besides there are also a number of private repairing yards. To combat fire the Chittagong Port Authorities maintains a full-fledged fire fighting unit with modern equipment within the jetty premises and two vessels furnished with firefighting equipment for marine fire. The sheds, warehouses and the yards are provided with sprinklers, hydrants with different kinds of fire extinguishers and fire buckets. The port is connected with the hinterland by road, rail and river [4].

![Table 1: Vessel and Container Handling Statistics of CPA](image)
From Table 2 it is observed that inauguration of a deep sea port will reduce or remain the demand of container volume constant in respect of Chittagong port. In the mean time if the vessels switch to Deep Sea Port, then the demand of container volume will obviously reduced. This will result in unbelievable change in today’s congestion at Chittagong port. Today’s highly congested port will be getting rid of container congestion.

3.5.1 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, provides the low cost and massive transport means.

FIGURE 4: International Seaborne trade, selected years (Millions of tones loaded)

Source: UNCTAD review of maritime transport 2016

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 & developing economy

3.5.2 Economic Benefit from Deep Sea Port

The table 3 can show how much money and time can save by utilizing deep sea port from Bangladeshi existing sea port.

<table>
<thead>
<tr>
<th>Year</th>
<th>Vessel Diverted from Chittagong and Mongla</th>
<th>Waiting Time Saved</th>
<th>Waiting Cost Saved</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>779</td>
<td>1761</td>
<td>32.7</td>
<td>There would be decline of 1000 TEU container vessels</td>
</tr>
<tr>
<td>2025</td>
<td>1025</td>
<td>2454</td>
<td>38.2</td>
<td></td>
</tr>
<tr>
<td>2030</td>
<td>1610</td>
<td>3822</td>
<td>40.2</td>
<td></td>
</tr>
<tr>
<td>2040</td>
<td>2277</td>
<td>5738</td>
<td>57.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: PCI Japan Report December 2008 p.17-18
3.5.2.1 Employment Opportunity

The prospective of DSP is very high as there will be enormous employment opportunities as a result of huge amount of cargo handling and port operations, our country can earn good revenue. Besides, the port will also generate a large number of indirect employments in port base commerce such as EPZs, shipbuilding and different types of repair facilities including ships and machineries repairs[18].

3.5.3 Lower operating cost by 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 of 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, the slot cost savings become even more significant when a carrier’s total TEU volume is taken into account [7]. Therefore to enjoy this freight reduction, a new deep sea port is so essential without relying on existing ports.

3.6 Opportunities and Strengths of Deep Sea Port

3.6.1 Strategic geographical location:

Although Bangladesh is a small country, being located in the armpit of India and right on the Indian Ocean containing 25% of the world’s land, 40% of its oil and gas reserves, and a third of the global population, Bangladesh is of clutch geopolitical importance. The Indian Ocean hosts one of the world’s most important and busiest shipping lanes, which supplies East Asia with the bulk crude oil from Middle East. Still 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, like to mold the country as per their expectation and not get pushed out of the game.

TABLE 4: Cost reduction of increasing vessel size

<table>
<thead>
<tr>
<th>Vessel Size (TEU)</th>
<th>Cost per TEU in USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>18.67</td>
</tr>
<tr>
<td>2000</td>
<td>11.62</td>
</tr>
<tr>
<td>4000</td>
<td>7.34</td>
</tr>
<tr>
<td>6000</td>
<td>5.65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vessel Size (DWT)</th>
<th>Total Cost / Day at Sea</th>
<th>Cost per TEU / Day at Sea</th>
</tr>
</thead>
<tbody>
<tr>
<td>12,500</td>
<td>$155,382</td>
<td>$12.43</td>
</tr>
<tr>
<td>18,000</td>
<td>$179,198</td>
<td>$10.96</td>
</tr>
<tr>
<td>22,000</td>
<td>$220,892</td>
<td>$10.04</td>
</tr>
<tr>
<td>24,000</td>
<td>$229,693</td>
<td>$9.57</td>
</tr>
</tbody>
</table>

Source: Van Mao (2013)

Now graphically can show the relation between Vessel Size and Vessel Operation Costs (Container Ship)

FIGURE 5: geographical location of Bangladesh

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[15], Bangladesh is a major part of its maritime agenda. Although the declaration of the design is as a commercial project, this endeavor has imparted a sense of trepidation in the other actors in the South Asian Theater, who perceive it as potentially having militaristic ramifications or at least influencing this reasoning to push their own competing agendas. The anxiety was first brought up by consulting firm Booz Allen Hamilton in 2005 internal report prepared for the U.S. Department of Defense, named “String of Pearls”. Eventually the geopolitical competition has risen to the apex when it comes to the decision towards selecting the site and the financier of Bangladesh’s first deep sea port, with some powers making important political and financial strides to secure their own interests and to keep those of others at bay. “The Bay of Bengal is centrally located within this tectonic change,” JICA’s Tanaka said in last year’s speech. “Bangladesh, in other words, is the linchpin.”
3.6.2 Physical 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 [9]. The area proposed is the deepest point of the Bay to approach the land. The bathymetric (sea bottom topography) condition of the area is hydraulically 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, laying north, north-east and north-west of her, that comprises seven north-eastern states of India, Kunming city of China, and Chin and Rakhine states of Myanmar.

Near Matarbarhi/ Sonadia Island[10], south-east of Bangladesh, there is a narrow deep strip of the Bay with a natural depth of 14m. Careful utilization this exceptional opportunity, Bangladesh can develop a Deep Sea Port for larger vessels that requires higher draft facility, primarily to increase our capability to fulfill our private needs, and moreover to allow others to have better access to the sea, that may unveil a new horizon for developing the country like Belgium (Rotterdam).

3.6.3. Transit & Transshipment Hub

None of the deep sea port sites in the Bay of Bengal other than Sonadia/ Matarbarhi has the potential to serve the broader hinterland region lying behind. The geographic position of Bangladesh could offer real opportunities to play a major role in regional seaborne trade and act as a gateway for this region to the rest of the world by providing shortest land connectivity route to the deepest water, saving thousands of kilometers transport costs and time[20].

Moreover, in case of industrial revolution, the demand of both export and import is increasing rapidly and only a deep sea port can facilitate this demand. In addition, DSP can be used as a transit port for Nepal, Bhutan, seven sisters of India and China (Kunming). Having enough depth to accommodate larger vessel, a DSP in Bangladesh can also be a transshipment port like Colombo, Singapore and Hong Kong etc and it will be big source of earning revenue for Bangladesh [12].

3.7. Finding from the Above Study

Finally, Necessity of Deep Sea Port can be shown diagrammatically.

Here,
Sea Port= SP
Vessel Size= VS
Seaborne Trade =ST

When,

ST increase = VS will increase

[Because of Large volume of commodity transport by Large Vessel for reduced cost and economy of scale]

Then,

VS increase = SP Facility has to increase

[Because of Larger vessel need to accommodated at berth without deep draft port that cannot be possible]

Therefore

ST increase = SP Facility has to increase

From the above diagram it has been proved that without DSP it is not possible to handle the upcoming growth of seaborne trade and the economic development of Bangladesh also not possible to providing transit and transshipment facilities to neighboring countries [16].

4. CONCLUSION

As the volume of seaborne trade is significant through Bay of Bengal therefore, Bangladesh needs to develop her existing seaport facilities to have the benefits from this trade. Moreover, because of the rising demand of export and import the Deep seaport might be a transshipment port within South Asian region in future. In addition, DSP can be used as a transit port for Nepal, Bhutan, seven sisters of India and Kunming of China as a result opportunity of employment and earning good revenue is high. It can also play vital role to change our economy.

However, it is necessary to implement the Deep seaport in Bangladesh to facilitate their and regional seaborne trades.

ACKNOWLEDGMENT

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Finally, we are grateful to almighty in which deserve, we are able to prepare this paper in present form.

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Unique Promotional Strategy for Sustainability of Community Based Tourism (CBT)

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Department of Business Management, University of Calcutta, Kolkata, India

ABSTRACT

Community based tourism (CBT) focuses on the protection of socio-cultural values and economic benefits of stakeholder host communities of tourism destinations. It is increasingly being promoted as an avenue of sustainable tourism development. But for achieving economic sustainability in long run for CBT initiatives it is imperative to ensure revenue generation through regular tourist footfall and productive use of available resources. The purpose of the study is to examine the tourists' awareness level about CBT initiatives. The paper also seeks to analyze how far the aware tourist is able to contribute to economic sustainability of CBT destinations. It also aims to identify popular tourist information dissemination sources so that a policy prescription can be suggested for effective marketing and promotion strategy of CBT. The study used questionnaire based survey method and collected primary data of 100 domestic tourists focusing on the CBT destinations of Northern part of west Bengal region. Statistical analysis is used to develop a framework to explain the theoretical relationship of CBT awareness level and tourists’ visit possibility. The findings will lead to policy prescriptions for CBT developers to achieve sustainability in long run by developing unique promotional strategy to increase tourist visit.

Key Words: Community based tourism, Sustainability, Promotion, CBT awareness, Visit willingness

I. INTRODUCTION

Tourism a key driver of socio-economic progress is continuously expanding to become one of the largest and fastest growing economic sectors of the world. According to UNWTO international tourist arrival is expected grow by 3.3% a year between 2010 and 2030 to reach 1.8 billion by 2030. But this huge potential for socio-economic development is neutralized by precipitous and unplanned growth of mass tourism. The negative impacts of mass tourism often jeopardize the socio – economic structure and environmental balance of a region. As a result, the concept of sustainable tourism development through various alternative forms of tourism has gained acceptance and appreciation from both academicians and practitioners. Community based tourism (CBT) as a new tourism form became popular in the mid-1990s, reversing the development approach to bottom-up, in an effort to provide real and all-inclusive community participation at all levels of the development (Asker, Boronyak, Carrad, & Paddon, 2010). World Wildlife Fund International (2001) defines CBT as a form of tourism “where the local community has substantial control over, and involvement in, its development and management, and a major proportion of the benefits remain within the community.” The principle objective of CBT is the participation of local communities in sustainable tourism planning, development and management processes (Beeton, 2006; Inskeep, 1994). CBT to be successful in this increasingly competitive global tourism market needs proper planning and strategy. Promotion and awareness building is the key factor for any economic activity where the demand and supply of the product is pivotal. A promotional approach, more specifically CBT destination brand development approach is very essential for sustainability of CBT. CBT as an alternative tourism lacks connection with mainstream tourism industry thus has less access to market. The primary objective of the study is to examine the awareness level of the tourists about CBT destinations in northern part of West Bengal and also to observe the contribution of awareness level in increasing the tourist footfall. Sufficient tourist footfall will ensure financial viability of the CBT projects which can lead to economic sustainability in long run. Further, popular information gathering sources of the tourists are identified to suggest an effective and unique promotional strategy for awareness building.

II. LITERATURE REVIEW

Tourism will grow continuously as a result of increasing demand of the tourists. But it will also induce the adverse impact of tourism. Therefore, sustainable development approach is the future of tourism. While there does not exist a universal definition of sustainability, many scholars agree that sustainable development includes long term positive economic, social and environmental outcomes (Hunter, 1997; Goodwin H., 2011). Sustainability is often discussed regarding different forms of tourism and their impacts. Conventional mass
tourism, for instance, is known to have many negative environmental and socio-cultural impacts, while at the same time the economic benefits are also very rarely realized by the local population (Telfer & Wall, 2000; Torres, 2003). Due to the significant negative consequences of excessive and unplanned tourism development, the focus on local involvement has been considered as one of the ways to control the pace of development, and mitigate socio-cultural, environmental and economic impacts (Murphy, 1985). CBT as a sustainable tourism is gaining popularity because local community participation in the development and practice of these projects is supposed to be high, and that the whole community benefits from the projects (Brohman, 1996; Hatton, 1999). CBT is generally small scale and involves interactions between visitor and host community, particularly suited to rural and regional areas (Asker, Boronyak, Carrad, & Paddon, 2010).

A Toolkit for Monitoring and Managing Community-based Tourism (SNV, 2007) has suggested CBT projects, like any other small businesses, need to keep careful tabs on their performance in all aspects of a business. Most of the CBT projects collapse because of poor market access and lack of tourist awareness (Goodwin & Santilli, 2009). Lack of tourist footfall will challenge the financial viability of the CBT projects. P.E. Murphy suggests CBT when entering in the tourism industry need to achieve economic sustainability. This can be achieved by increasing tourist visit. According to (Pawaskar & Goel, 2016) Service industries, like tourism constantly under pressure of growing their customer base and they need to make dedicated efforts in luring customers. So, exclusive marketing and promotion strategy is imperative to attract the potential consumers. A study by Nielson depicts that 92% consumers rely more on recommendation from family and friends over any other forms of advertising and promotion. Online consumer review secured the second most trusted source. User generated information is considered more credible than seller generated information (Willson & Sherrel, 1993). Thus, word of mouth (WOM) i.e. Influencing and encouraging organic discussions about a brand, organization, resource, or event can be an effective and inexpensive strategy for promotion.

But there is no strong evidence of study and practice of promotion of CBT for tourist awareness building in existing literature. Most of the studies focused on socio-economic impact and environmental impact of CBT. Present study tries to explore the awareness level of tourists regarding CBT and its role in increasing tourists' willingness to visit in a CBT destination. The study also seeks to understand which information sources and medium can be used effectively to promote CBT.

### III. METHODOLOGY

#### A. Measure

A questionnaire was developed to collect empirical data which covered the demographic profile of the respondents, travel characteristics (travel frequency, team size, booking medium etc.) Data is collected on respondents’ CBT initiative awareness level and visiting willingness to a CBT destination in future. CBT awareness level response is collected in a dichotomous scale with the option yes and no. Data is also collected on mostly used information sources by the tourists and the responses are assessed on a five point Likert scale ranging from Most used (5) to Least used (1). A pilot study on 20 respondents was conducted and necessary correction was implemented in the questionnaire.

#### B. Study site

Kolkata, in the state of West Bengal was the study site for the purpose of data collection. The focus of the study was emerging CBT destinations in the North Bengal region, so the data was collected from the respondents from Kolkata and adjacent areas from where the most of the tourists in North Bengal crowds around throughout the year. Specifically the data was collected from the visitors in Travel Tourism Fair 2016 held in Netaji Indoor Stadium from 8-10th July, 2016. The approximate footfall was 8000.

#### C. Sampling

Simple random sampling method was used for the study. The data was collected by selecting every visitor entering on every 15th minute in the fair premises through the main entrance as a respondent. Total questionnaires were collected 104, among which 100 were used for the study after cleaning.

### IV. RESULTS

Analysis of the demographic background of the respondents depicted that the majority respondents were male (68%) and belong to age group of 25-34 (42%). It also revealed that majority of the respondents were from monthly income group of 20k-40k (34.7%). Most of them (56%) go for a holiday at least once in a year and the rest go for a holiday trip more than once in a year i.e. frequent traveler.

Respondents were asked regarding their CBT initiative awareness level, with dichotomous ‘choice responses. Further they were asked about their willingness to visit a CBT destination in future regardless of their awareness about CBT. Responses were collected in three options: No, May be and Yes. Result in table 2 depicts that 28% of the respondents are completely unaware about CBT initiatives. Rest of the respondents (72%) who are aware about CBT among them 77.8% have shown a
willingness to visit a CBT destination in future holiday trips. 13.9% are not willing to visit and 8.3 are not sure.

### TABLE 1
DEMOGRAPHIC PROFILE OF RESPONDENTS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>32</td>
</tr>
<tr>
<td>Age</td>
<td>18-25</td>
<td>12</td>
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<tr>
<td></td>
<td>25-34</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>35-44</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>45 &amp; above</td>
<td>18</td>
</tr>
<tr>
<td>Monthly Income</td>
<td>Less than 20k</td>
<td>10.2</td>
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<tr>
<td></td>
<td>20k-40k</td>
<td>34.7</td>
</tr>
<tr>
<td></td>
<td>40k-60k</td>
<td>30.6</td>
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<tr>
<td></td>
<td>60k &amp; above</td>
<td>24.5</td>
</tr>
<tr>
<td>Holiday Travel Frequency</td>
<td>Once in a year</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>More than once</td>
<td>44</td>
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</tbody>
</table>

### TABLE 2
CBT AWARENESS * CBT VISIT WILLINGNESS

<table>
<thead>
<tr>
<th>CBT Awareness</th>
<th>Visit Willingness</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not willing</td>
<td>Not sure</td>
</tr>
<tr>
<td>Aware (72%)</td>
<td>10 (13.9%)</td>
<td>6 (8.3%)</td>
</tr>
<tr>
<td>(100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unaware</td>
<td>14 (50%)</td>
<td>14 (50%)</td>
</tr>
<tr>
<td>(28%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>20</td>
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### TABLE 3
CORRELATION

<table>
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<tr>
<th></th>
<th>Visit Willingness</th>
<th>CBT Awareness</th>
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<tr>
<td>Pearson Correlation</td>
<td>Visit Willingness</td>
<td>1.000</td>
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<tr>
<td></td>
<td>CBT Awareness</td>
<td>0.212</td>
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<tr>
<td>Sig. (1-tailed)</td>
<td>Visit Willingness</td>
<td>0.017</td>
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<tr>
<td></td>
<td>CBT Awareness</td>
<td>1.000</td>
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### TABLE 4
Mann-Whitney U Test

<table>
<thead>
<tr>
<th></th>
<th>Asymp. Sig. (2-tailed)</th>
<th>Z</th>
<th>Mann-Whitney U</th>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>100</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>CBT Awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aware</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Unaware</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Visit Willingness</td>
</tr>
</tbody>
</table>
The correlation table (Table 3) depicts the strength and direction of association between CBT awareness level and visit willingness of the tourists. There is a positive correlation between CBT awareness level and visit willingness of the tourists (r = 0.212) which is statistically significant (p = 0.017, less than 0.05).

Further, Mann-Whitney U test is carried out to compare the difference in CBT destination visit willingness between the two groups of tourists i.e. aware and unaware. Table 4 displays mean rank and sum of ranks for the two groups. The aware group with much higher mean rank (61.00) than unaware group (23.50) indicates high visit willingness to a CBT destination.

Next, we will focus on the significance value of the test. The result depicts the test statistic U = 252 and p value (sig.) = 0.000. From this result it can be inferred that there is higher visit willingness among the aware group than the unaware group and this result is statistically substantiate. This leads us to explore how the awareness about CBT among the potential tourists can be increased, which will lead to higher frequency of tourist visit. In the next step therefore, the popular modalities which may influence tourists are identified.

We have asked the respondents which are their most used information sources for holiday planning. Their responses are assessed on a five point Likert scale ranging from most used (5) to least used (1). Through descriptive analysis on the basis of mean value four preferred tourist information sources for planning holiday is identified as Family & friends (4.40), Hotel/ Destination website (3.68), Travel magazine (3.40) and Online review (3.32).

<table>
<thead>
<tr>
<th>TABLE 5</th>
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<tbody>
<tr>
<td>TOURIST INFORMATION SOURCES</td>
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</table>

<table>
<thead>
<tr>
<th>Sources</th>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.40</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.807</td>
</tr>
<tr>
<td>Variance</td>
<td>3.246</td>
</tr>
<tr>
<td>Guide book</td>
<td>3.324</td>
</tr>
<tr>
<td>Travel agency</td>
<td>3.161</td>
</tr>
<tr>
<td>Hotel/Destination</td>
<td>3.202</td>
</tr>
<tr>
<td>Online review</td>
<td>3.497</td>
</tr>
<tr>
<td>Social media</td>
<td>3.324</td>
</tr>
<tr>
<td>Family &amp; Friends</td>
<td>3.577</td>
</tr>
</tbody>
</table>

We have asked the respondents which are their most used information sources for holiday planning. Their responses are assessed on a five point Likert scale ranging from most used (5) to least used (1). Through descriptive analysis on the basis of mean value four preferred tourist information sources for planning holiday is identified as Family & friends (4.40), Hotel/ Destination website (3.68), Travel magazine (3.40) and Online review (3.32).

V. DISCUSSION & IMPLICATION

This study observed the association between CBT awareness level among tourists and their visit willingness to a CBT destination. The result of Pearson correlation shows a statistically significant (p = 0.017, less than 0.05) positive linear relationship (r = 0.212) between the two variables CBT awareness level and visit willingness. This implies that two variables tend to increase together. Further it is observed that 72% of the respondents are aware of CBT initiative in this northern part West Bengal but 28% respondents are completely unaware of CBT initiatives. 77.8% of the aware respondents are willing to visit a CBT destination in future holiday. Mann-Whitney test gives a picture of the difference in visit willingness between the aware and unaware group of tourists. The test result shows a statistically significant (p = .000, less than 0.05) higher visit willingness among the aware tourist group than the unaware tourist group. This indicates that increasing tourists’ awareness about CBT initiatives can result in higher tourist footfall which will ensure economic sustainability of CBT in long run. Focused promotional planning is very necessary for increasing awareness or to keep the tourists well informed about CBT. The study also identified largely used information dissemination sources by the tourists for holiday planning. Family & friends (4.40), Hotel/ Destination website (3.68), Travel magazine (3.40) and Online review (3.32) are identified four largely used information sources. These sources can be used strategically for effective promotion of CBT.

VI. CONTRIBUTION & CONCLUSION

After all tourism is a business, so CBT needs to make a place in global competitive market to sustain in long run. Regular tourist footfall will provide it economic sustainability and opportunity for optimum use of available resources. The study found that there is still a lacuna in awareness among tourists about CBT initiatives and also revealed that high awareness can result in increasing tourist footfall. It is observed that aware tourists have shown a high willingness to visit a CBT destination in future. So systematic promotional programmes are suggested to increase tourist awareness and popularize CBT. Continuous promotion is also essential to influence the already aware tourists. CBT as an emerging tourism offering should be widely publicized. The study suggests that identified four most used tourist information sources i.e. Family & friends.
Hotel/Destination website, Travel magazine and Online review. But Recommendation from family and friends is the most preferred source of information to the tourists. This also substantiates the consumer survey result of Nielson.

An important observation of the study is that among the four identified sources except travel magazine other three sources are very cheap or almost free medium. Therefore, the promotion of CBT is possible at a very low cost or even free. This is very significant because CBT units generally lack abundant fund for marketing and promotion. Family and friends is a most preferred and reliable information source so creating satisfied tourists can ensure word of mouth publicity without incurring any additional cost. A website of a CBT destination or community Homestay can be created with very little cost, its maintenance is also inexpensive. Again, information about CBT destinations making available in state tourism corporation’s website can be free of cost. Enlisting CBT destinations and properties in online travel review portals comes free or at a very negligible cost. Advertisement or featured stories can also be published in travel magazines which may be a little costly. However, even publishing stories in travel magazines can be made low cost by offering fam trip to travel writers or their representatives.

The study suggests Word of Mouth (WOM) as a unique promotional strategy for CBT which is cost effective and more personal than generic advertising. This inexpensive medium will help in CBT destination awareness building through existing customer base without additional marketing investment. But creating highly satisfied tourists with more engaging and amazing experience is essential to unleash the power of WOM. Online reviews i.e. online network of the tourists should also be nurtured as a highly potential source of WOM along with the physical medium of Family and friends.

Previous researches demonstrated that CBT projects lack tourist awareness and have very poor marketing and promotion initiatives. But none has significantly focused on effective promotional strategy for CBT. The present study firstly attempts to study the effect of tourist awareness in increasing tourist footfall in CBT destinations. Further, seeks to understand the most effective way to improve tourist awareness and develop promotional strategy for CBT. The study identifies that informal communicational channels can be very effective medium for promotion of CBT. Eventually, the promotion of CBT can be executed almost free or at a very low cost through tourist involvement. This research provides a unique theoretical contribution for promotional strategy formulation of CBT and also paves the way for further research in this direction.

But government support is essential for promotion of CBT as tourism communities lack adequate finance and requisite skill for marketing and promotion. There is a limitation that the study has not accounted the responses of the foreign tourists and is focused on domestic tourists.

REFERENCES
An Inter Services Comparative Study on Job Satisfaction in Bangladesh: Application of Discriminant Function Analysis and Structural Equation Modeling

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Paper# ICBM-17-344

Abstract
Despite a significant number of research for finding the factors of job satisfaction and its impact on the performance of the employees in the organizations, a comprehensive identification of the factors amongst different types of organizations yet to be undertaken in Bangladesh. The findings of those researches on the factors of job satisfaction rarely explicate their specification among different types of organizations, which is assumed to be different. Thus, we argue that a comprehensive study to find the factors of job satisfaction of the employees in different types of organizations is relevant and necessary. Such a study would allow to reach more explicit and comprehensive understanding on the specification of the factors of job satisfaction amongst different types of organizations, and to enhance the performance of the employees.

We would like to address the research by means of a systematic and conceptual analysis of the responses on job satisfaction from the employees working in different types of organization such as “Education”, “Manufacturing”, “Bank”, “Government Services”, “Private / Multinational Organizations”. In that regards, data has been collected from 288 employees, at least 30 from each type of organization by stratified random sampling technique with proportional allocation. As research method we have used Discriminant Function Analysis (DFA) and Structural Equation Modeling (SEM) to meet the objective of the study. We have found that the factors of job satisfaction are notably different in organization of varying nature. Those specific factors of job satisfaction for each type of organization can be addressed in order to put into effect, so that it can get efficacious outcomes. The contribution of this paper will also help the policy makers to devise an effective specific plan for the organization to ensure job satisfaction of the employees that can lead to the better performance of the employees and profitability of the organization.

Keywords: job satisfaction, structural equation model, discriminant analysis, Bangladesh

I. Introduction
Job satisfaction is vital for employee performance. It was found that a satisfied employee renders better performance than an employee who is not satisfied. Job satisfaction is one of the most widely analyzed subjects in organizational behavior field. One of the reasons is probably its intuitive link with a wide range of important employee behaviors such as turnover, absenteeism, and performance (Schleicher, Hansen, & Fox, 2010). Therefore, the research on job satisfaction got so much emphasis by the researchers. As a concept for the first time it was defined by Hoppock as ‘a combination of a person’s psychological, physical and environmental events from his job to obtain job satisfaction/be satisfied’ (Yew, 2008). Job satisfaction can be defined as the general attitude towards the job (Greenberg & Baron, 2000). It is a multi-dimensional concept. It includes certain external factors such as qualifications of the job, organization and government, salary, working conditions, relation with superior etc.

II. Objective of the Study
The general objective of this study is to identify the factors of job satisfaction of employees from different types of organizations. Along with this there are some specific objectives of the study:
- to find the effect of the relevance of educational background with current on job satisfaction,
- to find the effect of salary, job security, working conditions, relation with superior etc. on job satisfaction
III. Research hypothesis

The following hypotheses are addressed in this study.

H\textsubscript{1}: Factors of job satisfaction are different for different types of organizations

H\textsubscript{2}: The studied academic background plays a significant role for job satisfaction of employees

IV. Methodology

1. Data and Study Areas

Data has been collected from the educational organizations, bank, manufacturing organizations, Government services, and private/multinational organizations. The target population is the employees working in these organizations.

2. Sample Design

The sample size for the study has been determined by the formula; \( n_0 = \frac{z^2pq}{d^2} \) and the sample size is 288. Multi phases sampling techniques have been adopted to select the respondents.

3. Data collection: A structured questionnaire has been prepared and used to interview the respondents to collect data.

4. Reliability Analysis

A measure of scale reliability namely Cronbach's alpha (\( \alpha \)) that measures the internal consistency of responses, that is, how closely related a set of variables as a group, has been used to analyze the reliability of the responses.

Table 1: Reliability analysis of the data collected from different types of organizations

<table>
<thead>
<tr>
<th>Types of Organizations</th>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
<td>0.571</td>
<td>10</td>
</tr>
<tr>
<td>Education institution</td>
<td>0.777</td>
<td>10</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>0.555</td>
<td>10</td>
</tr>
<tr>
<td>organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government service</td>
<td>0.864</td>
<td>10</td>
</tr>
<tr>
<td>Private/multinational</td>
<td>0.757</td>
<td>10</td>
</tr>
</tbody>
</table>

5. Methods

5.1 Discriminant Function Analysis (DFA)

The discriminant analysis model involves the linear combinations of the following form:

\[ D = \beta_0 + \beta_1X_1 + \beta_2X_2 + \ldots + \beta_kX_k \]

Where, \( D \) will measure the discriminant score, \( \beta \)'s are the discriminant coefficient or weight, and \( X \)'s are the predictors for score.

5.2 Structural Equation Model (SEM)

In the light of the conceptual framework, a structural equation model has been developed by addressing both the direct and indirect effect of the related factors on job satisfaction by addressing the simultaneous relation among the study variables.

V. Results and Discussion

In this study data has been collected from five different types of organizations and the selection of the number of respondents is made based on the non probability judgmental sampling procedure. In that process 50 employees from banks, 50 faculties from private and public universities, 62 employees from the manufacturing organizations, 30 officials from government service, and 96 employees from the private organizations has been selected.

A. Structural Equation Modeling

Based on the questions of five point Likert scale about the level of satisfaction of the employees who are working in those organizations, the structural models have been estimated. The first model that has been fitted to estimate the job satisfaction of the employees is based on the combined data from all the sectors. The findings of the overall model suggests that the employees are more of satisfied with their working environment which comprises of their working hours, the employee’s relationship with their colleagues, relationship with their superior in the organization, and scope of training and development. The second leading factor of satisfaction of employees arises from their motivation related to the job. This latent motivation of employees is govern by their job security, recognition of their accomplished job from the authority, their sense of belongingness towards the organization and the scope of utilization of their skills and talents.
accountant or may be a graduate of Business is doing job in the civil administration.

After estimating this model, we decided to see whether the findings are similar in all types of organizations or not. The first organization specific model that we dealt with is based on the educational institutions.

The faculties of the universities are found least happy with their economic solvency in Bangladesh. Their joining and staying in this profession is influenced by the motivational factor such as the job is more or less secure, they find this profession has recognition socially and institutionally. Teachers are also happy with the scope of utilization of their skills and talent. This might be because they are engaged in a profession where wholeheartedly they can impart their gained expertise and knowledge. The working environment of the academic institutions also satisfies them followed by the motivational factor. In most of the cases the working hours are flexible, easily they can build and maintain a good relationship with their colleagues and the training and development facilities are provided institutionally.

The second structural model is based on the responses from the private bank employees and the selection of bank was again judgmental and the target population was the employees at different tiers currently working in the banks.

In the banks it is found that the employees are satisfied with their economic state which comprises of salary and promotion. The second leading source of satisfaction in the banks is the motivational factor of the employees. The job is more or less secured in the bank. Due to the scarcity of job, bank job is socially more attractive in Bangladesh to the fresh graduates. The recognition in the banking sector is more institutionalized and structured in Bangladesh, which motivates the employees to do their assigned task with the sense of satisfaction. Employees are less satisfied with the working environment in the Banks. Reason may be the prolonged and uncertain working hours in the Banks. Often employees need to stay after the office hours and that sometimes become burdensome for the employees specially for the female employees.

The third sector that has been dealt with is the government service and data has been collected from the current service holders.

Unlike to the other types of organizations, government employees are satisfied with their working environment followed by the motivational factor but less satisfied with the economic factor.
Government employees are happy with their certain and flexible working hours. The working environment is more congenial since the scope of success and development is wider, so the rivalry for gaining success among the employees is more constructive that makes the working environment satisfactory amongst the employees. The motivational factor is also playing vital role in case of overall satisfaction of the employees in this particular sector. As the social recognition of government service is pretty high in Bangladesh and the job is conceivably secured. The scope of training and development is also better for the government employees. Employees are offered different training programs for their skill development and at the beginning of the job most of the government employees got the foundation training for preparedness to perform their responsibilities. Though the government sector is evenly distributed for the aspirant but in many cases the appointment is made based on the relevancy of the studied subject. It is also found that the government employees are quite happy with the compatibility of job and their educational background.

The next sector that is dealt with is the manufacturing sector in Bangladesh. The same questions were asked to the employees and based on the responses the following model has been estimated.

The employees are happy mostly with the motivation related factors such as the job security, recognition for their accomplished task etc. Employees are moderately satisfied with the compatibility of their academic background and the current job.

The final model is based on the responses from the employees of private organization and the selection of organization was made based on the eminence and employability of the private organizations running in Bangladesh. In that way data from the employees of several private organizations has been collected. The result of the estimated model suggested that the employees of the private organization are mostly satisfied with their economic issues. They are happy with their earned salary and scope of being promoted. The rest of the latent factors are more or less close to each other in terms of their level of satisfaction.

**Figure 7:** The path model for job satisfaction based on the data from the Private organizations
This, the findings of the above sector specific models are significantly different. And in comparison with the overall model which is based on the data from all the studied fields the sector specific models are also significantly different.

**B. Discriminant Function Analysis**

In order to classify the job satisfaction of the employees by discriminant analysis we have converted the job satisfaction variable into binary variable where the categories, fully satisfied and moderately satisfied are treated as “satisfied” and rest are considered as “not satisfied”. Now, the linear discriminant function has been estimated and the estimated function is;

\[ D = 0.46 \times \text{Age} - 0.23 \times \text{Gender} - 0.01 \times \text{Marital Status} + 0.15 \]

* Education Level + 0.03 * Income + 0.18
* Duration of job + 0.16
* Matching with background education + 0.35
* Likings of job + 0.36 * Economic factors + 0.35 * Motivation + 0.27
* Working environment + 0.27
* Academic relevance

This function will help to classify the future event in order to find the job satisfaction status of the employees.

Now, in order to check whether the discriminating groups have sufficient variation between them, the following graphs have been created.
VI. Conclusion and Recommendations

Though the factors of job satisfaction are mostly similar for the employees who are working in the organizations of different nature, but the effect of those factors on job satisfaction are distinctively different among the organizations. It is also found that the job satisfaction of the employees is significantly influenced by their academic relevance with the nature of the job that they are performing. If the academic background match with job, that helps them to perform their job comfortably and make them more satisfied. The other job satisfaction related factors, like, salary, job security, recognition, sense of belongingness to the organization, relationship with colleague and superior, working hours are also significantly influencing the job satisfaction of the employees. The effect of these factors is also found distinctively different among the studied organizations. Besides this, faculties in the universities are happy with their working environment and motivation but least happy with their economic state. These differences are also found in other studied organizations as well. Finally, the findings of the study proved the relevance of an inter service study for job satisfaction and suggesting to take organization specific measures for the employees to make them satisfied to their job.

References


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References


Family Problem Leading to Absenteeism in the workplace in Bangladesh

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Paper# ICBM-17-477

Abstract: The paper includes the theoretical aspect of absenteeism related with motivation. The motivation level for absenteeism is the main concern of this paper. The work has been done with different kind of motivational theory. The Maslow hierarchy model is the main key point for the motivational concern. Absenteeism is not a new theory. In past the absenteeism was very high in number, the information are found this from one research. So, the main target is to narrow down the main cause for absenteeism and impact of the factor in motivational theory. Family problem is a very big factor for absenteeism. The paper will discuss about the factor. Family problem is the source of all tension and as a human being the people like to spread the tension on others. The information have found in many studies that, family problem not only demotivate the person who is suffering but also other surrounding people. It might demotivate other people as well. According to a research of American Psychological Association (APA) the psychological imbalance for family problem is one of the main reasons for absenteeism in workplace. The big negative impact of absenteeism, it is destroying the motivation level of the employee.

Key word: Absenteeism, Family problem, Psychological imbalance

I. INTRODUCTION

Absenteeism is a very common phenomenon in corporate culture. There are many reasons behind this absenteeism. The problems are that family problem is one of the most important reasons from all. There are some other reasons like cultural problem and health issue, but according to us family problems are the big issue for absenteeism in office. Family problem also cause a great deal of disruption in normal work life. People cannot keep their attention in work properly. They are releasing their pressure on others which is also creating many problems. So there are many problems of this family problem and absenteeism in workplace, a country like Bangladesh. We are working on the contemporary of Bangladeshi worker’s behavior. There are lots of opportunities to work further with this topic. We will be very much pleased if the research on this topic continued and the theory developed in time.

II. METHODOLOGY

The findings going to follow whole research based on primary research which are been collected from the primary source. The information is going to be collected from the related information from the field and the research is going to be a quantitative research. The research have been done among the mid level officers and the supervisor level as well. The study have done on this research to get diversification in the research. The information have been collected all the information through questionnaire and focus group discussion.

III. RESULT

The data collection through different way and the situation have to come to a result. The responds were numerous from the responders. They were very helpful to do the research. The research have found out that, there are reasons to do absenteeism in the work place. The people are from the work are not so much concern about their work. They seem to aware about their family problem. The graph can show that, the family problem and health issues are the main cause of absenteeism. The supervisors are the main person to have absenteeism. From the questionnaire response we can say that, the family problem is really great reason for absenteeism and its reducing the productivity of the workers. The reasons are inevitable. The absenteeism rate is also high in supervisor level according to them. when we ask them about their absenteeism percentage according to them. The rate was almost fearing the supervisor level workers are tending to have 30% of absenteeism in a year. The most of them use the family problem as the reason. We have also found that, the joint family is creating more family problem. There are so much people and so much problem so the problem with the supervisor level is more that
mid level managers who are having nuclear family.

All variables relevant to the study’s hypotheses included work/family conflict and the provision of direct patient care. Consistent with previous work, we assessed the role of work/family demands through a question about spillover which is preoccupation about work at home and home at work. Similar questions assessing the frequency of work interfering with home responsibilities have been used elsewhere in the work/family literature to assess work/family conflict. Specific items pertaining to work/family spillover (things at home do not get done because of job demands and vice versa) have also shown to correlate strongly and significantly with a validated scale to measure work/family conflict employed in the second phase of the current Work, Family and Health Network Study indicating that the spillover construct is an effective measure of work/family conflict [1]. Direct patient care employees were considered health care practitioners. Included here are registered and licensed practical nurses and health care support staff, such as certified nursing assistants. Staff persons with managerial or office-based roles or those working in service and maintenance were not included as direct patient care employees. Other covariates conceptualized to be associated with supervisory support for work/family balance and employee-rated pain were also included in this analysis: job strain, depressive symptoms, age, hourly wage, obesity, male gender, and Non-Muslim race. Job strain was assessed using survey items about job demands and job control based on the work of Karasek and colleagues In response to questions pertaining to physical activity, heavy lifting and awkward body positions (job demands) as well as degree of skill, task variability and autonomy (job control) at work, subjects strongly disagreed, disagreed, agreed or strongly agreed (valued 1 – 4, respectively) that these elements were part of their jobs. Consistent with other research, we calculated the sum of these ordinal responses for job control and job demands separately and dichotomized each measure at the highest 50th percentile (yes/no). Depressive symptoms, measured by the Iowa Short Form of the Center for Epidemiologic Studies Depression Scale, age and hourly wage at the current job were measured continuously, centered around their respective means. To measure obesity, we employed the traditional cut point of a BMI greater than or equal to 30 (yes/no). Male gender (yes/no) and Non-Hispanic White race (yes/no) were measured dichotomously.

IV. RECOMMENDATION

We have some recommendation regarding the issue. We have some observation on the matter and come with some recommendation which might be very helpful for others. They are-

- The proper time allocation might solve the problem at great ratio.
- The utilization of leisure time is more important to solve the absenteeism problem.
- The office should not interfere in employee’s personal life.
- The office should give some space for family and family time for the employee.
- The annual arrangement for get together can help the family member to understand the situation of work life.
- Make sure you aren't part of the problem.
- Don't ask about the employee's personal life.
- Be compassionate but fair
- Use the resources you have.

V. FINDINGS

The research found out that, the study will help many people to find out the main cause for their anxiety in their workplace and they will know what is causing them for their absenteeism in the workplace. They will know about their problem and they will try to avoid the problem with some solution given in the paper. The findings of the paper will able to make understand the psychological pattern of employee and the main problems they are facing in the real life. Our multilevel logistic models indicate that employees with managers who report the lowest levels of support for work/family balance experience twice as much overall experiencing family problem as employees with managers who report high levels of support. Forty-seven percent of employees say that
problems in their personal lives sometimes affect their work performance, according to new research by us. We have asked 100 employees using its employee assistance program how personal issues were affecting their work. More than 16 percent reported that their personal challenges caused absenteeism, and nearly half said it was hard for them to concentrate [2]. Take note: If you think problems in your team's personal lives have nothing to do with you, you're wrong. Dealing with an employee who's facing personal struggles is one of the biggest challenges you'll ever face as a boss. It's why most large corporations have well-established Employee Assistance Programs where they can send employees who need to deal with personal issues. But what if yours is a small company without a formal EAP? In a small company, an employee who's affected by a crisis at home can be an even bigger problem, according to us. In a small company, every person has an impact on the bottom line.

VI. DISCUSSION

There are no families without problem. But the research have to care about the limits of problem. If the problem is increasing continuously then, there should be some steps to take to solve those otherwise there will be problem, like absenteeism. The family problem is also reducing the productivity of persons. They tend to work less and the outputs become poor of those persons. There are lots of duties to be in a family, we all have to fulfill those duties. The situation cannot escape itselfs from those duties. So there should be a given part of proper time to the family and solve the entire problem. The numbers are also promising. The rate of absenteeism is greater in supervisor level, because they have bigger family and they tend to live in joint family. The problems are outnumbered than mid level managers. The problems are greatly in joint family. The nuclear family to have less problem and they are having less absenteeism in work life. So we can say that, family problem is causing absenteeism in work life and it is really harmful for the productivity of the workforce. The supervisor level are the most affected victim of this problem. The percentage is almost 30% in a year, which is a very big number. If they miss 70-80days in a year. That is very big number to match. The productivity is must to decrease. On the other hand, there are less problem for the mid level professionals. The absenteeism is rate is also very low for them. so we can say that, family problem is leading to absenteeism. Consistent with previous findings, the current study suggests that supervisors may play a role in the health of their employees. Research has supported the association between manager behaviors and employee family problem outcomes especially related to family person's disease, sleep-related problems, family planning issues, depressive symptoms, psychological distress and family planning problems, and our findings further indicate that supervisory support are also related to risk of employee-reported family problems. Specifically, employees whose managers report the lowest supervisory support scores, reflecting low levels of creativity and openness about work/family balance, may experience roughly twice as much overall problems and pain at work. These results account for a wide variety of physical and psychosocial characteristics of the employee, including, job control job demands, direct patient care, obesity and depressive symptoms, as well as age, gender, wage and race/ethnicity.

VII. CONCLUSION

In the end the research wants to say that, there are problems in every aspect in our work life. But we have to balance all the things and go forward to deal with the problems. Family problem is also this kind of problem which is causing absenteeism and reducing the productivity. It is increasing at an alarming rate. There should be taken steps immediately to solve the problem. We have provided some recommendation which might be helpful. But the help of organization can solve the problem in a great atmosphere. The problem is old type of problem. The solution should come from further more research. As the landscape of work and home life evolves, it is critical to identify strategies that maintain and improve the wellbeing of employed individuals by addressing concurrent demands of work and family. The term introduced as ‘work-family conflict’ which is very old, and it is referring to “a form of conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” with work and family balance serving as the absence of these competing pressures for them.

VIII. REFERENCE

Vegetables Spoilage Rate in Bangladesh: How Actors of Supply Chain Affect It
Md. Hasan Maksud Chowdhury

BRAC Business School, BRAC University
Paper# ICBM-17-395

Abstract— the objective of this research is aimed to find the impact of middle-actors of supply chain on the spoilage rate of vegetables in Bangladesh. It is also directed to find a relation between spoilage rate and number of middle-actors of supply chain of vegetables. The research was conducted based on 349 primary samples. A lot of vegetables from farmer’s point of sales to consumer’s point of purchase is designed as a sample. Sample data was collected from farmer, rural retailer, whole-seller, transporter, aratdar, urban whole-seller and retailer and consumer; and on the secondary data, i.e. extract from literature, journals, books and different publications. Multiple regression model and percentile techniques were used to analyse data. It was determined that in the country on an average around 27% saleable vegetables spoiled with a standard deviation of 10.5% and from 6% to 51% during storing, handling and transporting. It was found that there are none to six intermediate actors like rural and urban whole-seller, retailer, transporter, aratdar, etc in the supply chain of vegetables. It was also found that there is direct relation between number of middle-actor in the supply chain and spoilage rate of vegetables; that is spoilage rate of vegetables increased as there were increased number of middle-actors in the supply chain.

Keywords—Vegetable supply chain, e-technology, middle-actor, season, aratdar, consumers’ price, farmer’s price, multiple regression and simulation

1. INTRODUCTION

Bangladesh has an overwhelmingly agricultural economy. Agriculture accounts for 32% of its gross domestic product (GDP), and absorbs 63% of the country’s labour force. Sustained government investment in irrigation facilities, rural infrastructure, agricultural research, and extension services has helped Bangladeshi farmers achieve dramatic increases in agricultural production.

The significant production transformation has been achieved and food production has more than tripled since independence in 1971, these have mostly supported the country’s large population base rather than uplifting the living standards of the average citizen. Food security still remains a major development issue. Thus, the government of Bangladesh has called for a departure from “rice-led” growth to a more diversified production base that includes several non-rice crops. [2]

Diversification into vegetable crops and increasing commercialization can support the development of the agricultural sector in several ways. Commercialization is characterized by households moving from subsistence systems into semi-commercial and commercial systems (with the main objective of achieving food self-sufficiency), thereby maximizing profits and generating surplus. It implies increased market transactions since farmers participate in the process to capture gains from specialization. Similarly, increasing capital intensity in production and processing leads to growth in the agribusiness sector. As a result, the number of agro-processing, distribution and farm-input provision companies increases. Commercialization can take place on the output side—when the farmer sells their products on the markets—or on the input side with increased use of purchased inputs. [3][1]

As vegetables are perishable items, spoilage is the main problem in commercialization. Moreover many parties are involved as middle-actors in the supply chain of vegetables. Since number of middle actors is increasing then retention of vegetables in the supply chain is also increasing. And transition points of loading-unloading for transportation are also increasing. These leads to more spoilage of the vegetables in the supply chain and there is hike of price of vegetables in the cities. That is why the research was done.

2. RESEARCH OBJECTIVES

The objectives of the research are:
a. To determine the impact of middle-actors on the spoilage of vegetables supply chain from farm to Dhaka city.

b. To establish a spoilage rate model taking number of middle-actors as independent variables and spoilage rate in the supply chain as dependent variable.

3. Methodology

This research was focused to identify the flow of vegetables from farmer’s point of sales to retail market of Dhaka city and to collect data numbers of middle actors and spoilage rate of vegetables. To do this, all types of farmers (small, medium and large farms) of the selected producing areas were surveyed with middle actors (Foria, Aratdar, Bepari, whole seller, retailer) and consumers of Dhaka city.

On the other hand, discussion with members of farms association, transport association, traders association, consumers association, police, shop-owners association was done to find critical factors affecting spoilage of vegetables in the supply chain.

3.1 Sampling Design and Survey Area

Lots (all vegetables that were taken to market by the farmers for sales) of vegetable from farmers point of sales to Dhaka city was considered as a sample. A random sampling design was used to select upazillas in the districts. Total 11 upazillas that was regarded as the minimum number of sample needed to have a statistically representative sample of a population by internationally recognized survey design. Survey of farmers and some middle actors (Foria, Bepari) was carried out in Bogra, Jamalpur, Savar of Dhaka, Narshingdi and Gaibandha districts. 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 district to retail markets of Dhaka city. One hundred twenty seven farmers from 11 upazillas of the above districts, their 349 lots of vegetables were marked and followed, 95 middle-actors and 290 consumers of Dhaka city were surveyed.

3.2 Analytical Techniques

Descriptive statistics and different type of charts were used to find the impact of middle actors on the spoilage rate of vegetables. Simulation and multiple regressions were used to find the co-relation between the factors and spoilage rate of vegetables.

4. Literature Review

Today, one of the main global challenges is how to ensure food security for a world growing population whilst ensuring long-term sustainable development. According to the FAO, food production will need to grow by 70% to feed world population which will reach 9 billion by 2050. Further trends like increasing urban population, shift of lifestyle and diet patterns of the rising middle class in emerging economies along with climate change put considerable pressure strain on the planet’s resources: declining freshwater resources and biodiversity, loss of fertile land, etc. Consequently, there is a need for an integrated and innovative approach to the global effort of ensuring sustainable food production and consumption. [4]

In the meantime, while the number of food insecure population remains unacceptably high, each year and worldwide, massive quantities of food are lost due to spoilage and infestations on the journey to consumers. In some African, Caribbean and Pacific ACP countries, where tropical weather and poorly developed infrastructure contribute to the problem, wastage can regularly be as high as 40-50%. Obviously, one of the major ways of strengthening food security is by reducing these losses. [4]

Agriculture plays a key role in the overall economic performance of Bangladesh, in terms of its contribution to GDP, as a major source of foreign exchange earnings, and in providing employment to about 65% of the country’s population. Moreover, the livelihoods of 70% of the rural population in Bangladesh are dependent on agriculture. Agricultural research and development in Bangladesh has contributed tremendously to meeting the food requirements of Bangladesh’s population of approximately 140 million. [5]

Though considerable priority has been given to the production sector, relatively little priority has been given to the post-production sector. Postharvest management in Bangladesh, like in most developing countries of the region, is far from satisfactory. Losses resulting from inadequate handling, poor-storage, and improper distribution result in diminished returns to producers. [5]

Postharvest management is pivotal in an agricultural country such as Bangladesh. Success in agricultural production and in marketing hinges upon proper postharvest handling, storage, and processing of cereals,
oil seeds, legumes and horticultural crops. Current postharvest handling of these crops, however, presents a dismal picture. Traditional techniques which result in considerable deterioration of physical and nutritional quality are generally practiced by growers, traders and processors. Improvement of these age-old practices and development of new technologies through organized research and development efforts have now become essential in order to reduce the tremendous levels of postharvest losses in grains, and fruits and vegetables, so as to increase the supply for food from a limited land resource area and thereby strengthen the economy of the country. [5]

Postharvest loss can be defined as the degradation in both quantity and quality of a food production from harvest to consumption. Quality losses include those that affect the nutrient/caloric composition, the acceptability, and the edibility of a given product. These losses are generally more common in developed countries (Kader, 2002). Quantity losses refer to those that result in the loss of the amount of a product. Loss of quantity is more common in developing countries (Kitinoja and Gorny, 2010). A recent FAO report indicates that at global level, volumes of lost and wasted food in high income regions are higher in downstream phases of the food chain, but just the opposite in low-income regions where more food is lost and wasted in upstream phases. [4]

Farmers and food sellers have been concerned about losses since agriculture began. Yet the problem of how much food is lost after harvest to processing, spoilage, insects and rodents, or to other factors takes on greater importance as world food demand grows. Cutting postharvest losses could, presumably, add a sizable quantity to the global food supply, thus reducing the need to intensify production in the future. [4]

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. [5]

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. [5]

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)

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. [5]

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. [5]

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. [5]

Corrugated fiberboard containers are commonly used for the packaging of produce, although reusable plastic containers are also increasingly being used. Fruits are
generally transported to distant markets by truck in order to enhance efficiency and to reduce cost. Railway transportation is also used in some cases. High freight rates and damage during transit are some of the difficulties of transportation by air. Refrigerated transport is not available, as the fruit industry is not well developed owing to the lack of interest of traders and of the government. [5]

Losses are a measurable reduction in foodstuffs and may affect either quantity or quality. They arise from the fact that freshly harvested agricultural produce is a living thing that breathes and undergoes changes during postharvest handling. [4]

Loss should not be confused with damage, which is the visible sign of deterioration, for example, chewed grain and can only be partial. Damage restricts the use of a product, whereas loss makes its use impossible. Losses of quantity (weight or volume) and quality (altered physical condition or characteristics) can occur at any stage in the postharvest chain. [4]

Economic loss can also occur if the produce is subsequently restricted to a lower value market. Here, food loss is a subset of PHL and represents the part of the edible share of food that is available for consumption at either the retail or consumer levels but not consumed for any reason. [4]

Food losses refer to the decrease in edible food mass (dry matter) or nutritional value (quality) of food that was originally intended for human consumption. Food losses take place at production, postharvest and processing stages in the food supply chain. Food losses are mainly due to poor infrastructure and logistics, lack of technology, insufficient skills, knowledge and management capacity of supply chain actors, and lack to markets. [4]

Food wastage refers to any food lost by deterioration or waste. The term “wastage” includes both food loss and food waste. [4]

Food waste or loss is measured only for products that are directed to human consumption, excluding feed and parts of products which are not edible. [4]

5. **Analysis and Findings**

Samples were collected; four factors (Farmer’s price, use status of e-technology, number of middle-actors and season) of each sample were identified and analysed.

### 5.1 Samples from Different Season

Samples were collected in different seasons. There were three seasons for almost all the vegetables; full season, lean season and before season.

Among 349 samples 62% were collected during full-season, 21% during before-season and rest 17% were collected during lean-season.

Season wise collected data is shown in the following chart.

![Season wise data](chart)

*Figure 1: Season wise sample in percentage*

### 5.2 Middle Actors in the Supply Chain of Vegetables

It was found that there were no middle-actor to six middle-actors in the supply chain of vegetables. No middle-actor mean farmers directly sold their vegetables in the retail market of Dhaka city. They sold their product only during full-season of the vegetables.

From the research it was found that middle-actor(s) are the main factor for increased consumer’s price of vegetables in Dhaka city.

Number of middle-actors (NOM) in the supply chain of vegetables are shown with the following chart.
It was found that around 1% 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% cases, four in 19% cases, five in 15% cases and six middle-actors were in 5% cases.

5.3 Impact of Number Middle Actors (NOM) on Spoilage of Vegetables

To find impact actors of the supply chain, spoilage rate was calculated as percentage of total weight. It was found that the average spoilage rate were between 5% to 44% with an statistical average of 25.5%.

It was realized that on an average around 5% vegetables were spoiled if farmers sell their own product in Dhaka city. Spoilage rate was on an average 10% in case of there were one middle actor, 18% in case of two, 25% in case of three, 33% in case of four, 37% in case of five and 44% in case of six middle-actors.

5.4 Spoilage Rate Model

Simulating the data and from above analysis spoilage rate model can be formed as follows.

\[
SPOILAGE \ RATE = 0.067 \times NOM + 0.047
\]

NOM = Numbers of middle actors (0 to 6)

Box 1: Spoilage Rate 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 Spoilage Rate.
6. **DISCUSSION**

From findings, analysis and spoilage rate model it is clear that for each additional middle-actor on an average spoilage rate of vegetables is increased by 6.7%. On the other hand it is estimated that around 26% vegetables of the country spoiled due to middle actors.

7. **REFERENCES**


Ergonomic to Design Safe and Comfort Work Stations for Garment Workers: Bangladesh Perspective

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Abstract-RMG is playing a vital role in the economic development of Bangladesh. This sector earned above $28 billion in 2015-16. About 4.4 million people are directly employed by this sector. After debacle of Rana Plaza and tragedy of Tazreen garment the issue of workplace safety, is now a serious concern for all like workers, manufacturers, Retail buyers and Customers. Now, all are seriously searching for safe workplace for garment workers. The safe and scientific workplace will remove the anxieties of workers which will make their jobs easier quicker and faster. The aims of this study are to find wrong ergonomic practices in the factories and to suggest ergonomic work stations on the basis of workers anthropometric data. The anthropometric data of 200 female and 200 male are collected from Ali’s conference proceeding [1] and solution is made by the direct observation of the researcher in the light of Frank and Gilbert time and motions study and Occupational Safety and Health Administration (OSHA) rules [2]. This study reveals how ergonomic interventions reduce workers unnecessary motions, bending of the body and alleviate work related muscle skeleton disorder (WMSD); provide comfort and improve safety and productivity.

Key words: Ergonomics, work station, workers safety, productivity, musculoskeletal disorder

I. INTRODUCTION

Bangladesh now considered as a lower-middle income country. It has a vision to be middle income country by 2021. The RMG sector is contributing a lot in generating income of the nation. It has become the backbone of the economy of Bangladesh, by producing around 82% of country’s export. It is now the second largest garment sector in the world, after China, exporting over US $ 28 billion worth of clothing 2015-16(EPB) [3]. BGMEA (Bangladesh Garment Manufacturers & Exporters Association) has set up a goal to export $50 billion by 2021in Apparel Summit 2014 [4]. The combined efforts of buyers, manufacturers, workers and government have flourished the sector. The workers are the real turner of the sector, but their contributions are rarely echoed. To get a poverty free country, now it is the right time to take pragmatic action to increase worker’s income by improving productivity and ensuring work place safety. In fact, working environment of this sector is not good and safe. The garment workers are working in unsafe and hazardous environment. Crowded workplace, mismatched furniture, inapt ventilation, bad lighting, unwilling to use of safety equipment cause work-related injury and (WMSD) to the garment workers[5]. The Bangladeshi workers are doing their jobs in substandard environment. The health and safety condition are vulnerable to workers. The Rana Plaza and Tezreen tragedy reveal the fragile safety condition of this sector. Due to poor, unhealthy and hazardous condition, the garment workers persistently suffer from various diseases like asthma, neck pain, back pain, eye-problems [6]. A study reveals significant man furniture mismatch in seat height 79%, seat depth 94%, and seat width 36% and table height 79%. Due to furniture mismatch, sewing operator need to bend their neck and trunk forward to see the point of operation and to do the operation properly[1]. As sewing operators do their jobs in forward inclined posture, sewing process is short and persistently repetitive in nature [7] and man furniture mismatched are significant, the risks of work related muscle skeleton disorder (WMSD) are high among the Bangladeshi workers. It is found that 60.7% sewing machine operators have WMSD; experience pain in neck 36.7%, lower back 22.2%, upper back 13.3%, shoulder 18.9%, elbow 6.7%-wrist 2.2%-and hip 1.1%[8].

The garment workers are provided hard wooden chair without back rest for lumber support. These chairs do not minimize workers WMSD. The designing ergonomic chair with worker anthropometric data will fit the Jobs to the workers properly and improve their comfort and productivity. A study reveals that a factory can recover initial investment within short times for implementing ergonomic solutions. Proper ergonomic intervention improves productivity 14.7%, job satisfaction 75% and reduces absenteeism 60%, worker turnover 75% and health related complain 50% within six month [9].

Reference [10] identified wrong ergonomic practice in cutting, finishing section. The authors suggested 5 point support swivel chair with back rest and height adjustment chair instead of ordinary chair.

This study focuses to find wrong ergonomic practice and ergonomics risk factor, bad posture that cause WMSD. The study designs and suggests low cost ergonomic solution for betterment of workers in accordance Frank and Gilbert motion study[11], workers anthropometric data and Entire Body assessment scoring[12].

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This Study is for finding ergonomic win-win solutions for owners and workers. This study will help a lot to attain congenial work atmosphere in Factory and will help to achieve Export target $ 50 billion by 2021.

II. METHODOLOGY

This study is based on secondary data and researchers on field practical observation. The information is collected from different published scholarly article. Anthropometric data of Bangladeshi garment worker are collected from Ali’s conference precedence [1]. The ideas on ergonomic solutions are also collected from Gunning’s Ergonomic hand book [10] and OSHA (Occupational safety for Health and health Administration) rules. The researcher worked as an Industrial Engineer for three years in the Bangladeshi Garment industry and during this time the researcher observed the working process and posture of the garment workers. Identifying the garments workers problems, the researchers also designed and develop work aid for the garment workers by time and motion study. The researchers working experience helps to identify workers problem and make ergonomic solution.

III. RESULT

A. Ergonomics

The term "ergonomics" is derived from two Greek words: "ergo," meaning work, and "Nomo," meaning natural laws. It deals with man machine and furniture co-ordination. Ergonomics will help to design work friendly furniture to fit the job to human body. Ergonomics study and its rules are the effective tools for workers by designing work friendly furniture to fit the job to human body.

B. Work Station

Work station is a place occupied by a worker when performing a job. An example of a work station is an area covered by a sewing m/c, chair, input containers, output containers & space require for worker movement.

C. Anthropometry

Anthropometry is the science of doing Work. It deals with physical measurement and physical characteristics of human body.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Gender</th>
<th>5th percentile</th>
<th>Mean</th>
<th>95th percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sitting height</td>
<td>Female</td>
<td>79.95</td>
<td>77.26</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Eye height</td>
<td>Female</td>
<td>61.95</td>
<td>66.79</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Shoulder Height</td>
<td>Female</td>
<td>49</td>
<td>53.99</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Elbow Height</td>
<td>Female</td>
<td>16</td>
<td>19.79</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Hip Breadth</td>
<td>Female</td>
<td>30</td>
<td>32.4</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Elbow to Elbow Breadth</td>
<td>Female</td>
<td>35</td>
<td>40.92</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Thigh clearance</td>
<td>Female</td>
<td>12</td>
<td>13.66</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Knee height</td>
<td>Female</td>
<td>47</td>
<td>49.03</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Popliteal height</td>
<td>Female</td>
<td>38</td>
<td>41.42</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Buttock popliteal length</td>
<td>Female</td>
<td>35.15</td>
<td>39.72</td>
<td>44.3</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE II
DIMENSION OF ERGONOMIC CHAIR

<table>
<thead>
<tr>
<th>Feature</th>
<th>Anthropometric point</th>
<th>Desired Dimension</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seat height</td>
<td>Popliteal height</td>
<td>42 cm</td>
<td>50th percentile of female</td>
</tr>
<tr>
<td>Seat depth</td>
<td>Buttock popliteal</td>
<td>32 cm</td>
<td>5th percentile of female</td>
</tr>
<tr>
<td>Seat width</td>
<td>Hip Breath</td>
<td>38 cm</td>
<td>95th percentile female</td>
</tr>
<tr>
<td>Thigh–trunk angle</td>
<td>90°-105°</td>
<td></td>
<td>Forward posture</td>
</tr>
<tr>
<td>Seat Angle to horizontal</td>
<td>10°</td>
<td></td>
<td>For forward posture</td>
</tr>
<tr>
<td>Back rest height</td>
<td>Elbow height</td>
<td>16 cm</td>
<td>5th percentile female</td>
</tr>
<tr>
<td>Back rest depth</td>
<td></td>
<td>5 cm</td>
<td></td>
</tr>
<tr>
<td>Back curvature angle</td>
<td></td>
<td>15°-20°</td>
<td></td>
</tr>
<tr>
<td>Built in input output attachment</td>
<td>Normal Elbow extension</td>
<td>40 cmx32 cm</td>
<td>50th percentile EEB+Elbo</td>
</tr>
</tbody>
</table>

On anthropometric data (table I), the ergonomics chair is designed and its dimensions and views are shown in fig 3, fig 4 and fig. 5.

Feature of the Chair: this chair is designed on considering forward inclined posture of worker. The design is similar to [13], [14], [15], [16] and [17]. But this chair added elbow rest on both side as input output unit. This will keep the tools and materials as close as possible to worker.

Fig 3. RHS view of Ergonomic Chair with posture
Fig 4. Front View of Ergonomic chair
Fig 5. LHS of Ergonomic Chair
IV. DISCUSSION

A. Wrong Ergonomics practice & Solutions

Fig 6. Worker provided hard chair without back support (wrong posture)

The worker feels pain in upper and lower back because there is no support in lumber reason and worker will feel pain in lower extremists because of sharp and hard edge of chair.

Fig 7. Worker provided fine plastic chair with back support (Good posture)

This chair is partially resembled to above designed (fig-4) chair and this will provide comfort in her back side as flexible back support is provided. During forward posture the back part will always get a support. The above suggested (fig-4) chair will provide comfort and improve productivity reducing excess motions.

Fig 8. Worker in standing attaching belt with excess hand bending (wrong posture)

This worker feels pain in wrist, elbow and shoulder to excess bending.

Fig 9. Automatic belt attach m/c (wright posture)

The worker will feel comfort in shoulder, elbow, wrist and fingers as excess bending and motions are reduced as (Frank & Gilbert) motion study.

Fig 10. (Working in FOA m/c with sharp edge)

The worker feels pain in hand and get injury because of sharp edge of m/c. it will restrict the blood flow to the hands.
The round edge FOA will provide comfort to hand as per (OSHA) rule. In reference [18] similar suggestions are made.

This worker feels pain in back, neck, shoulder, elbow and wrist pain because of excess body bending as per high REBA score [12].

This will minimize worker discomfort and REBA score as worker will cut the fabric with unbending neutral posture.

This method causes pain in wrist and reduces productivity because of simultaneous handling of garment and measurement tape.

This method will reduce pain and improve productivity as the workers do not need to handle measurement tape. He can measure the garment of different size with reduced hand motion asp per (Frank and Giblet) principles of motion economy.

V. CONCLUSION

This study demonstrated that the sewing chair designed with worker anthropometric measurement and other ergonomic consideration will minimize workers muscle skeleton disorder and improve work place safety and work environment. Ergonomic interventions reduce unnecessary movement of workers and improve productivity.
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Factors influencing audit workplace behavior: Bangladesh perspective

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Abstract - Audit behavior is the behavior of the auditors as well as their workplace that is practiced during an audit engagement. An audit is conducted according to the guidelines and standards set by the authoritarian or regulatory bodies. The fundamental responsibility of an auditor is to obtain reasonable assurance about whether the financial statements are free of material misstatement that is caused by error or fraud. Meanwhile, audit workplace behavior is also important in measuring the audit risk and finding the factors directly involve with it. The basic objective of this study is to investigate and establish the factors influence the auditor satisfaction in their workplace in Bangladesh. Based on prior literature, a questionnaire has been developed and a snowball sampling technique has been used for collecting data. The respondents are the auditors working in Chartered Accountant firms also currently involved in audit teams. The results show that human resource sufficiency, and level of independence are positively, and audit team size and penalty on ethical violation are negatively related to auditor job satisfaction; whereas, compatibility, sufficient time budget, client’s cooperation level, and authority concern on ethical violation are not tied to auditor’s job satisfaction.

Keywords - Audit Behavior, Audit Workplace Behavior, Audit in Bangladesh, Behavioral Factor of Audit

The core task of an auditor is to check and certify the assurance that the statement prepared by the corporation is true and fare. This helps both public and investors to take proper financial decision.

(1) Objectives of the Study - The principal objective of this study is to recognize the behavioral factors those are implemented in the audit workplace in Bangladesh. The study also investigates the factors that influence auditors job satisfaction. The outcome of this study may be helpful for developing quality assurance service by improving audit work place environment and mitigating challenges.

(2) Scope of the study - The study focuses on the factors that are found to be influential by prior studies. However, it has not concerned on some other apprehensions like payment structure, firm quality and client business sector. Therefore, further study is possible depending on the results of the study.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Dittenhofer, Ramamoorti, & Ziegenfus, (2014) execute an analysis on the internal audit and on the total ins and outs of it. Their study is based on the total view in audit behavior. The probable limitation is their numerous questionnaires to trace the overall view. The relevant variable includes the time allocation for a job, allocation of auditor based on expertise as well as client’s participation with the audit team. The analysis describes the relation between different with the quality of the audit.

In their study, Yuen, Law, Lu, & Guan, (2013) focus on the independence of the audit field. International Accounting Standard clearly states that the audit must be done independently. However, it is found that in practice the scope of independence is very low.

Gul, Ng, & Tong, (2003) measure the ethical value of an audit. They use Kohlberg’s CMD theory is followed in the study, which is a famous measurement of ethical behavior [3]. The CMD

I. INTRODUCTION

An audit is the examination of an entity’s accounting records as well as the physical inspection of its assets; generally accomplished by a certified public accountants (CPA) or Chartered Accountants (CA) firm. The assignment of the certified chartered accountants is to provide assurance on the fairness of the entity’s financial statements [1].

Alike the BRIC (Brazil, Russia, India, and China), Bangladesh, an emerging economy, creating opportunities for all big cap corporation, both national and international [2]. While the word corporation or business comes, it is necessary to develop the audit practice to confirm whether all activities are being done according to law and regulation for the sake of a healthy economy.
theory is used in the study as the theory is supported by some applied study. For instance, Tsui & Gul (2001) assumes that, in Hong Kong, auditor’s individual perception about the likelihood of detection that auditor is being tracked while executing unethical behavior. And the results support the negative association between CMD and the ethical behavior of auditors. The perception about possible penalties is also included in the assumption. This study also investigates the influence of some other variables like gender, age and position in a CPA firm with ethical reasoning. The study concludes with the findings that, how the unethical behavior of Chinese auditors is affecting their share market [4].

Considering the study that says audit behavior is depended on the human resource deployed for audit task [5] the hypothesis is set to measure audit team human resource sufficiency and the job satisfaction. Therefore, the first hypothesis states as

H1: Human resource sufficiency has a positive impact on auditor job satisfaction

This study also includes that, time allocation and instruction compatibility are another factors those influences audit behavior. And, the next two hypotheses are states as,

H2: Instruction compatibility has a positive impact on auditor job satisfaction

H3: Time constraint has a positive impact on auditor job satisfaction

Dependency on the size of audit team for a given audit task is also claimed in this study. Therefore, to measure relationship the next hypothesis set as-

H4: Audit team size has a positive impact on auditor job satisfaction

The dependency of independence on audit behavior also states the possibility of dysfunction in the behavioral audit for the lack of independence [6]. In addition, client’s cooperation to provide required documents as well as information also has an impact on audit behavior. To measure dependency between the independence as well as client’s cooperation level with job satisfaction, the hypotheses stated as

H5: Independence in audit field has a positive impact on auditor job satisfaction

H6: Client’s co-operation level has a positive impact on auditor job satisfaction

For the substance of ethics, authorities can detect ethical violation and impose penalties to maintain ethics [7]. Therefore, the two hypotheses are developed to measure ethical behavior and job satisfaction level. Ethical behavior is measured by ethical awareness and ethical penalties.

H7: Ethical awareness of authority has a positive impact on auditor job satisfaction

H8: Ethical penalties has a positive impact on auditor job satisfaction

III. METHODOLOGY

In the first stage, this study has developed a structured questionnaire with the help of some experienced as well as qualified auditors, who are in management or strategic position in an audit firm, and by reviewing prior literature. Then the survey is conducted with the developed questionnaire and analyze the data. SPSS is used to perform the statistical analysis.

(1) Respondents and Sampling - The audit firm has 5 types of employees: article students (working for gaining experience as per requirement of ICAB), general stuffs, management stuffs, administrative stuffs and firm partners. Of them, mostly article students are directly involved in audit field. For that reason, only senior article students who are directly involved in grassroots level of audit are considered as respondent sample.

(2) Instruments – A structured questionnaire (Appendix-A) has been used as the study instrument for the survey. The questionnaire is designed from the prior literature and opinion of the experts. To analyze the audit behavior the questionnaire includes nine likert scale questions, which has 5 point likert scaling: where 1 represents “Low Likelihood” and 5 represents “High Likelihood”. Email invitation is sent to the senior article students who are working in audit teams in the CA firms. Twenty-five (25) responded to the questionnaire. Google form is used to collect survey results. SPSS (Statistical Package for the Social Sciences) is used to analyze the survey results.

(3) Designing Data Variable - The survey tries to cover the behavioral aspects during the audit. The survey inspects multiple areas like

- Job satisfaction
- Human resource sufficiency
- Instruction compatibility
- Time constrain
- Audit team size
- Independence in audit field
- Client co-operation level
- Ethical awareness of authority
- Ethical penalties
In addition, some demographic variable such as gender, age and their experiences are also accounted for the analysis. In the analysis, Job Satisfaction, measured by the likeliness of to find a new job, is considered as depended variable and others are considered as independent variable.

(5) Regression Analysis – A multiple liner regression analysis has been used for assessing the relationship between the dependent and independent variables. “Job Satisfaction” is considered as depended variable and “Penalty on Ethical Violation, Audit Team Size, Authority Concern on ethical Violation, Client Co-operation Level, Sufficient Time Budget, Level of Independence, Human Resource Sufficiency, Compatibility” are considered as independent variables. The purpose to use Multiple Lanier Regression Analysis is that, it can analyze interval scale variable as well as it also can analyze multiple independent and depend variable all together [8].

IV. FINDING AND ANALYSIS

Reliability Test -The reliability test of the questionnaire is measured as 0.617 for the selected questionnaire (Table 1). The score indicates that the questionnaire is reliable.

Descriptive Analysis - From survey, 45 responses are collected and the descriptive analysis has been conducted on 45 respondents. The analysis has been done based on that response. The mean and median is considered for scaling the variables. The result of each variable are shown in Appendix B.

From categorizing the data set by Years of Experience it is seen that, from every prospects of age, the median response for ‘Human Resource Sufficiency’ and ‘Time Budget’ is 2 from the likelihood scale of 5. It is an indication that auditors get moderately low human resource and time for completing an audit task. Similarly, in case of ‘Compatibility’, the overall median response is 3. However, people with 1 to 3 years of experience are agreed to this point, for people having experience of 3 to 5 years is 2.5 and people with experience of more than 5 years marked it as 5. It is an indication that the compatibility is moderate and there is a slight miscommunication in the hierarchy. From the respondents it is clear that ‘Audit Team Size Relation to performance’ is moderate to highly relate as median response from all tire of experienced people is 4 on the likelihood scale of 5. In addition, the respondents have similar opinion about ‘Scope of Independence in the workplace’, ‘Authority Concern on Ethics’, ‘Penalty on Ethical Violation’ and ‘Job Satisfaction’ of the auditors.

From categorizing data as per gender, the indication about ‘Human Resource Sufficiency’ and ‘Time Budget’ remains same. It also provides similar result for ethical issue and penalty. Only for the ‘Compatibility’ the people with different gender provides opinion that their median likelihood scale is 3. In short, their opinion says they get moderate compatible guideline for conducting the audit task. It is an indication that there is a need of improvement in this field.

Data categorizing by Number of Client served includes a new indication about ‘Compatibility’ that guideline provided to conduct is highly compatible according to those who have dealt with more than 20 clients. By this result it can be clearly indicating that guideline provided by top authority is not that much understandable for junior employees.

Data categorized by ‘Age’ includes a new indication about authority concern on ‘Ethical Value’ and ‘Job Redundancy’ that age group of 25 to 40 have median opinion about moderate level (3 on Likert Scale) authority concern on ethics while overall result says moderately high (4 on Likert Scale). This age group also have higher job switch tendency than others.

Regression analysis - the results of multiple regression analysis shows that adjusted R$^2$ value is 0.495 (Table 2) which indicates that 49.5% ‘auditor’s job satisfaction’ is associates with the independent factors: human resource sufficiency, compatibility, sufficient time budget, audit team size, level of independence, client co-operation level and authority concern on ethical violation.

Table 1: Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.617</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.758*</td>
<td>0.574</td>
<td>0.495</td>
<td>0.54579</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Penalty on Ethical Violation, Audit Team Size, Authority Concern on ethical Violation, Client Co-operation Level, Sufficient Time Budget, Level of Independence, Human Resource Sufficiency, Compatibility

In addition, in Table 3 P Values (significance level of regression test) of regression test results indicate...
positive coefficient in ‘human resource sufficiency’ (H1) and ‘level of independence (H5), and negative coefficient in ‘audit team size’ (H4) and ‘penalty on ethical violation’ (H8). However, results also show that the significance level of ‘compatibility’ (H2), ‘sufficient time budget’ (H3), ‘client’s cooperation level’ (H5), and ‘authority concern on ethical violation’ (H7) is higher than 0.10, which rejects the assumptions.

<table>
<thead>
<tr>
<th>Table 3: Multiple Regression Results</th>
<th>H</th>
<th>coeff</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.297</td>
<td>0.010</td>
<td>0.010</td>
</tr>
<tr>
<td>Human Resource Sufficiency</td>
<td>H1</td>
<td>0.393</td>
<td>0.016</td>
<td>0.016</td>
</tr>
<tr>
<td>Compatibility</td>
<td>H2</td>
<td>-0.142</td>
<td>0.404</td>
<td>0.404</td>
</tr>
<tr>
<td>Sufficient Time Budget</td>
<td>H3</td>
<td>-0.047</td>
<td>0.759</td>
<td>0.759</td>
</tr>
<tr>
<td>Audit Team Size</td>
<td>H4</td>
<td>-0.317</td>
<td>0.010</td>
<td>0.010</td>
</tr>
<tr>
<td>Level of Independence</td>
<td>H5</td>
<td>0.290</td>
<td>0.052</td>
<td>0.052</td>
</tr>
<tr>
<td>Client Cooperation Level</td>
<td>H6</td>
<td>0.057</td>
<td>0.671</td>
<td>0.671</td>
</tr>
<tr>
<td>Authority Concern on ethical violation</td>
<td>H7</td>
<td>0.105</td>
<td>0.378</td>
<td>0.378</td>
</tr>
<tr>
<td>Penalty on Ethical Violation</td>
<td>H8</td>
<td>-0.247</td>
<td>0.046</td>
<td>0.046</td>
</tr>
</tbody>
</table>

For H1 (human resource sufficiency) the significance is 0.016 and coefficient 0.393 which accepts H1 concluding that auditors job satisfaction level increases by deploying sufficient human resource for different audit task. This may cause for the reason of minimizing difficulties for involvement of expert peoples, which decrease work pressure in the work field [5].

For H4 (audit team size) the significance is 0.1 and coefficient is -0.317 which accepts H4 concluding that, auditors job satisfaction level decreases by increasing audit team size. This may indicate that large size group in an audit task creates inertia in overall work procedure [6].

For H8 (penalty on ethical violation) the significance is 0.046 and coefficient is -0.247 which accepts H8 concluding that auditors job satisfaction level decreases by increasing penalty on ethical violation. This concludes the controversial opinion on the ethical value of an auditor that ethical or moral value can only be developed by developing thoughts not by increasing penalties [4].

For H2 (compatibility) P value is 0.404 which is greater than acceptable significance level 0.05. Which rejects H2 concluding that job satisfaction is not considerably related with instruction compatibility [5].

In the case of H3 P value is 0.759 which is greater than acceptable significance level 0.05. Which rejects H3 concluding that job satisfaction is not considerably related with time budget set for a specific task. This may cause by auditor’s indifference with time reverse to previous studies [6].

For H5 is accepted with a P value of 0.052 (coefficient id 0.290), which concludes that job satisfaction is considerably related with time budget. This accepts the idea of previous study about behavioral impact on level of independence [6].

For H6 P value is 0.671 which is greater than acceptable significance level 0.05. Which rejects H6 concluding that job satisfaction is not considerably related with client’s co-operation level. This may cause by auditor’s adjustment with challenging workplace [5].

For H7 P value is 0.378 which is greater than acceptable significance level 0.05. Which rejects H7 concluding that job satisfaction is not considerably related with authority concern on ethical violation. This may indicate the ethical and moral circumstance in the audit workplace [4].

V. CONCLUSION
From the analysis it can be stated that, on average auditors enjoys moderately high level of independence as well as the possibility of ethical violation is moderately high, which is a good sign for this workplace as well as Bangladesh economy. However, moderately low human resource sufficiency and time budget for completing task is a negative indication for audit quality. In addition, however in junior level, client cooperation with audit team is moderate to high, in senior level it is moderately low which provide a negative indication about the industries and their ethics. The prospects should be considered for policy making as well as making any economic or financial decision.

Acknowledgement: This study is inspired by the undergraduate internship project of Mr. A. Chakravarty.
VI. REFERENCES


APPENDIX A: Questionnaire

Demographic Questions:

<table>
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<th>Gender</th>
<th>Age Group</th>
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<td>□ Female</td>
<td>□ 25 to 40</td>
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<tr>
<td></td>
<td>□ 40 to 55</td>
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<td>□ Above 55</td>
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<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Number of Client served</th>
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</thead>
<tbody>
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<td>□ Bellow 5</td>
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<tr>
<td>□ 1 to 3 years</td>
<td>□ 5 to 10</td>
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<tr>
<td>□ 3 to 5 Years</td>
<td>□ 10 to 20</td>
</tr>
<tr>
<td>□ Above 5 years</td>
<td>□ Above 20</td>
</tr>
</tbody>
</table>

Analytic Questions:

1. How likely the human resource for Audit, is deployed as per expertise? [5]

2. How likely the Audit task has to be done in compatible guideline? [5]

3. How likely the time budget for Audit, is proved as sufficient? [6]

4. How likely the size of the Audit team is related with successful accomplishment of the task? [6]

5. What level of independence can be enjoyed during the audit? [6]


7. How likely is it that the authorities will detect that an individual auditor has violated ethical rules? [6]

8. How heavy is the penalty the individual auditor would face if he/she was caught for violation of ethical rules? [4]

9. How likely an auditor would like to find a new job? [4]
## APPENDIX B: Descriptive Statistics

<table>
<thead>
<tr>
<th>Gender</th>
<th>Human Resource Sufficiency</th>
<th>Time Budget</th>
<th>Audit Team Size</th>
<th>Level of Independence</th>
<th>Client Co-operation Level</th>
<th>Authority Concern on Ethical Violation</th>
<th>Penalty on Ethical Violation</th>
<th>Job Switch Tendency</th>
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<td>2.00</td>
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</tr>
</tbody>
</table>

N= Number of observations
Recruitment Process Outsourcing from Bangladesh: A Case Study

J. Acharyya¹, R. Ahmed²

¹Master of Business Administration, BRAC University, Dhaka, Bangladesh
²Assistant Professor, BRAC University, Dhaka, Bangladesh

Abstract: We are living in the era dominated by information technology and the information is treated as gold mine by business leaders. The right information at the right time and place can change the entire landscape of a business. We have seen incredible growth of small-medium business in the last decade. Facebook and WhatsApp were start-up business during this period, turning into a gigantic corporation in no time. Their primary idea of business is surrounded by information technology. This article focuses on business transformation through information technology and how value is added to global small medium businesses by recruitment process outsourcing from a remote geographical location. Recruitment process outsourcing (RPO) is a form of Business Process Outsourcing (BPO) that involves designing and implementing recruitment programs by a third-party service provider. This strategic idea of RPO comes with challenges from both home and beneficiary country. Lack of infrastructure, skilled manpower and leadership are the key obstacles for this growing business phenomenon.

Keywords: Business Process Outsourcing (BPO), Global Business, Recruitment Process Outsourcing (RPO), Remote Assistance, Small Medium Business

I. INTRODUCTION

1.1 Literature Review

The success story of small-medium businesses centering information technology is phenomenal. Facebook started from the dorm of Harvard University in the year 2003 and Mark Zuckerberg (the founder of Facebook) became the youngest billionaire by 2008. His venture started with a seed capital of just $1000 from one of his dorm mates. Facebook’s revenue grew from $7.87 billion in 2013 to $27.64 billion US dollars in 2016. That year, Facebook accumulated a net income of $10.22 billion US dollars. The primary idea of Facebook is to connect people using information technology. In the beginning of their operations, they had to outsource many of their computer programmers before moving their office setup to Silicon Valley. The Facebook that we see today is a collective effort of like-minded people that were not belonging to large corporations but people willing to help grow a billion dollar idea at minimum fees. The company already acquired Instagram and WhatsApp to mark their dominance in the information technology business—thanks to the growing prospect of small medium business.

According to the Small Business Administration in the United States, over 50% of small businesses fail in the first year and 95% fail within the first five years. [1] The primary reason for failing is due to the cost associated with their businesses. The pivotal idea generated by small medium entrepreneur can be brilliant but they are always behind budget compared to large corporations. The services of Recruitment Process Outsourcing (RPO) firm are a cost effective solutions for start-ups ventures. An RPO firm can customize their services and help their clientele on the need basis. It can save associated overhead cost of recruitment by 30-40% per year.

RPO falls in the domain of Business Process Outsourcing (BPO) where an employer transfers all or part of its recruitment processes to an external service provider. RPO partners become a virtual extension of the client’s Human Resources department. [2] The RPO provider offers high volume, end-to-end recruitment services. The RPO is often involved in the full lifecycle of recruitment, from when the requisition first opens through post-hire activities, ultimately impacting employee retention. To drive interest and attract quality talent, the RPO provider brands all recruitment activities as the client company. An RPO provider takes ownership of the entire recruitment process, generating savings for the client in time, efficiency, and resources. Companies who engage an RPO provider to streamline their recruitment process, decrease cycle times and costs, increase candidate quality, improve compliance, and measure results. Partnering with leaders within the organization, an RPO provider analyzes the recruitment function from a strategic perspective, recommending and implementing adjustment. By outsourcing recruitment to an expert source, the company is able to fully focus on strategic, revenue-generating activities.

The RPO is a strategic concept for businesses that reduce cost and speed up the recruitment process. RPO from a geographically distant location can reduce the cost of services significantly due to low-cost human resources in the South Asian region. Also around the clock services (12-hour difference between the United States and Bangladesh) provides an unparalleled competitive advantage for growth seeking start-ups. However, there are several limitations to execute this type of strategic ideas. Lack of computer literacy, access to high speed internet connections, degree of foreign
language proficiency, secured payment gateway, recruitment related training and development programs from offshore offices, unwillingness to invest time and energy by overseas partners to understand the learning curve of these strategic remote assistance and then setting expectation are some of the key challenges. Understanding this business strategic idea and following implementation plans is the key success factors for the RPO professionals positioned in the geographically remote areas. Commitment to long term partnership will ensure fruition to this strategic action plan and help to add values to parties involved in this process.

1.2 Purpose of the study

Bangladesh based RPO professionals provide services to primarily small businesses mainly in the USA. Their major focus is on supporting recruiting activities. The main product is a candidate pipeline list, mapping skill sets and helping companies to hire top talents at low cost. An RPO specialist builds a list of potential candidates for a client who is looking for candidates for a specific role. The client can then reach out directly to the candidates to see if they are interested in the role or they can engage RPO professionals to work for them. The three competitive advantages in doing this work from Bangladesh are 1) They can provide around the clock services for clients 2) The professionals can work remotely from home saving operational costs 3) Offer services at an attractive price point unmatched to the rest of the world. The key issue of this study is to bring the attention of investors, non-resident Bangladesh’s and relevant government agencies of the country to help support activities by promoting the concept to global companies, facilitate learning and development programs and initiative to develop infrastructure related to this growing sector of the economy. RPO can contribute to the achievement of country’s vision Digital Bangladesh by 2020.

1.3 Objectives of the study

- To identify BPO prospect in Bangladesh for international market
- To understand RPO concept and its implementation from Bangladesh
- To identify challenges of outsourcing sector and recommending solutions

II. METHODOLOGY

This case study was carried out following qualitative research methodology. As the concept itself heavily relies on internet usage, the information was collected from various websites, newspaper article, and online journals and from companies focused on BPO and RPO in local and international market. Primary data were collected from the verdict of BPO industry experts on their website, discussion with freelance consultants working in the various market places such as Upwork, Craigslist and the informal group interview with ExecRPO’s (a US company working in RPO sector from Bangladesh) remote workers. Secondary data were collected from government statistics, investor documents. A section of this case study is dedicated to understanding RPO concepts and its growth potential. In the same segment, the overall challenges of BPO sector are discussed as RPO is a sub sector of BPO industry. Observation and exploratory research were carried out by the authors as there are few or no earlier studies to refer this topic.

III. OUTCOME OF THE STUDY

This study will open the door for an absolutely new sector of business for Bangladesh. Till now, BPO is not a structural industry in Bangladesh with high potential to grow as equal as readymade garments sector of the country. The nation has a large number of youth populations. With an increasing number of graduates and low service costs compared to India and the Philippines, can take BPO sector forward. Bangladesh can definitely reach the $5 billion export target of the ICT ministry by 2021. [3]

The country has also emerged as one of the top five destinations for freelancing of IT services. Bangladesh is in an advantageous position and the country should not miss the chance to increase its international market share. A third of the nearly 1.6 million people of Bangladesh are between the age of 15 and 34 years and an increasing number are getting educated. BPO costs here are 40 percent lower compared to India and the Philippines and the government provides support to help this sector to grow. India has taken advantage of its demographic dividend through BPO, which has helped the country generate 2.8 million direct jobs. BPO also helped India fetch billions in exports. BPO offers significant opportunities to create jobs and diversify the export basket and move from the current dependence on ready-made garments. Bangladesh has attracted global attention because of its achievements in economic and social sectors.

The country makes progress in spite of corruption, nepotism, infrastructural problems, and negative politics. There is a regenerative Bangladesh, which is growing, making its presence in the global forum. It is one of the countries that are looked upon as the next growth center.

Bangladesh has one of the highest numbers of population in the world. The people are potentially
creative minded that IT-enabled business can take advantage of. The government has taken up a number of schemes to promote IT education such as the Union Information Service Centre to train the youth. Building a network of Bangladeshis living in the West such as the US and Europe can enable the local industry to obtain contracts. Many of them are in a good position to influence decision making. Export earnings from IT reached nearly $100 million at present. [4] This study will provide an insight to Recruitment Process Outsourcing (RPO) industry in Bangladesh, the opportunity exists in this growing prospect and contemporary requirements by its stakeholders.

IV. DISCUSSION

4.1 BPO prospect in Bangladesh

BPO is relatively a new domain of employment in Bangladesh. It started with a limited number of outsourced call centers for international customers back in early 2000. However, landmark year of BPO industry was 2009 when Telecom industry took the lead and started outsourcing to local BPO service providers. Since then many companies local and multinational started outsourcing their back office operations, which was highly pivotal in the inception of local BPO industry. However, the predominance of call centers and customer cares in BPO industry do not signal real potential and capacity of Bangladeshi human capital. Bangladesh is a country that is producing every year nearly half million graduates in business, information technology, engineering, medical and humanities discipline. [5]

Ref [6] BPO is a growing sector worldwide with an industry worth over $500 Billion pent-up demand. India, Sri Lanka, and the Philippines are currently leading the worldwide BPO industry where their market sizes are worth $80 billion, $2 billion and $16 billion respectively. To capture the worldwide BPO industry our country has the following advantages –

- Competitive cost advantage over other emerging countries
- Declared as a thrust sector by the Government of Bangladesh
- Located in the geographically advantageous location in terms of Time Zone.

The Government of Bangladesh had captured the current picture and potential of the BPO industry. The industry associations Bangladesh Association of Call Center and Outsourcing (BACCO) is working closely with government to capitalize on the opportunities emerged for the industry. The government had already initiated handfuls of capacity development projects which will open up an avenue of IT based outsourcing in Bangladesh significantly. Currently, the government is establishing several IT Parks around the country for professionals and companies to operate under the same roof with dedicated facilities for BOP emergence.

4.2 Concept of Recruitment process outsourcing

RPO has garnered a lot of attention from companies looking to make the most of their hiring expenses. With a more customized approach to sourcing, screening, recruiting, and on boarding qualified candidates, even senior level positions can be filled quickly and efficiently. Recruitment process outsourcing allows outsourcing of internal recruitment activities in part or in whole to an RPO provider. The RPO firm handles the entire recruitment process from start to finish, including sourcing, screening, and recruiting qualified candidates.

4.3 Difference between RPO Provider and Staffing Company

The primary difference between RPO and staffing company is that an RPO provider will take full control of the entire recruitment process and will assume responsibility for the results. When a business contract with an RPO firm, it can expect better candidate quality, more effective recruitment strategies, and greater flexibility. Unlike staffing companies that generally handle temporary or temporary to permanent assignments, RPO helps to recruit top quality candidates for even the most demanding positions. In addition, RPO uses a different pay structure. Rather than paying a contingency fee upon hiring, the company will pay an hourly or monthly fee based on specified needs and parameters. In this way, RPO is more accountable to deliver the quality candidates a company needs and generally the service is less expensive.

4.4 RPO Process work

Recruitment process outsourcing is designed to integrate with business, understand company culture, and fine-tune recruiting process in order to deliver high-quality candidates that will fit well within the structure of a company.

Source- RPO providers use extensive databases, networking, data mining, social media, and existing applications from applicant tracking systems to identify high-quality candidates for each position.

Screen- Rigorous screening of profiles, including background checks, reference checks, skill assessments and interviews create a pool of candidates that will be a good fit both for the position and for the company. Screening for cultural fit is also an important part of this process, ensuring that clients receive only candidates who will fit well within the current culture of the company.

Recruit- RPO firms specialize in recruiting both passive and active candidates to find the best person for the job.
The provider acts as a brand representative, promoting a consistent brand message, scheduling interviews, handling salary negotiations, and maintaining tight quality control.

**Report** - The firm remains accountable to the client and provides regular analysis of metrics such as cost per hire, time to fill, retention rates, and productivity.

### 4.5 Benefits of RRO
In a fiercely competitive recruiting environment where companies are desperate to hire skilled candidates for demanding positions, RPO bridges the gap between traditional recruiting methods and current hiring demands. No matter how large or small the hiring need is, an RPO provider will:

- Whether a company needs 10 or 10,000 hires, RPO will help to find the best candidate for each open position by scaling solutions
- RPO lowers hiring costs by reducing or removing the need to maintain a full-time, in-house recruiting division.
- With access to the best recruiting technology, industry expertise, and a broad referral network, RPO can significantly reduce the amount of time it takes to fill each open position.
- RPO solutions can be customized to meet the needs of each client. Whether they want to supplement their current recruiting process or outsource the whole project, an RPO provider can develop a targeted solution.

As one of the most effective recruiting solutions on the market, recruitment process outsourcing has the power to deliver the talent an organization needs to remain competitive in today’s market.

### 4.6 RPO from Bangladesh
Call centers in Bangladesh provide services for international companies located far from the country. Their inbound call center is located in the central location of Dhaka city but the services are enjoyed by US or European customers. RPO services can be implemented using the same concept as call center services, thanks to the advancement of technology.

The sourcing, screening and recruiting of candidates and reporting to the client can be executed from Bangladesh at a much cheaper rate than any other part of the world using remote workforce. Candidates can be sourced using online job boards such as Indeed, Monster, Glassdoor etc. In these websites candidates from different location of the world upload their resumes in profile. A profile also contains important information such areas of interest and expected salary which is typically not included in a curriculum vitae or resume.

Recruiters also use various social media such as LinkedIn, Facebook, Twitter etc. to research candidate’s background. LinkedIn is a social networking site designed specifically for the business community. The goal of the site is to allow members to establish and networks with people they know and trust professionally. As of April 2017, LinkedIn had 500 million members in 200 countries. Using social media platforms candidates can be reached with job post of their desire.

### 4.7 Concept of Telecommuting - the remote worker
By definition, Telecommuting is synonyms for the use of telecommunication to work outside the traditional office or workplace, usually at home or in a mobile situation. This is a recent concept where people feel empowered to work in a way that suits them and suits the business. The popularity of Smartphone’s and social media means that co-workers do not have to sit next to each other to communicate effectively. Encouraging different ways of working allows companies to reduce their rent and property cost which is the biggest challenge of start-ups.

A remote worker can carry laptops which they can use both at the office, at home, and nearly anywhere else. The rise of cloud computing technology and high-speed 3G/4G mobile internet availability has enabled access to remote servers via a combination of portable hardware and software. Improvement in technology and increasing popularity of Smartphone helped remote workforce to gain a significant advantage in their working style. With internet access to Smartphone, the remote workforce can communicate with their peers for free using FaceTime, Whatsapp etc. It also features free international call facilities to stay connected with clients. [8]

### 4.8 Challenges of outsourcing sector in Bangladesh
Among all limitations of outsourcing in Bangladesh, some indicators are mainly responsible for creating this scenario, such as lack of proper educational background, lack of job-related skills, lack of proper guidelines, lack of high-speed internet facilities and weakness in English communication.

Although this sector has the prospect in Bangladesh there are different obligations and limitations such as lack of skilled manpower and IT expert. Foreign buyers are not being interested in our IT outsourcers because our professionals seek quick profits, without maintaining the quality of their works. Time overdue is a usual scenario in our outsourcing market. The International buyer wants their work to be completed at a high level of professional etiquette. Outsourcing professionals should take responsibility for their work and deliver on time services. The professionals, who maintain a favorable relationship with their buyers, have never faced a job crisis and other job-related problems.
In Bangladesh, internet speed is a vital problem. To continue the outsourcing work and maintain regular communication with the international buyers, the availability of the internet is highly needed, but our internet speed is unexpectedly slow and expensive. We should keep it in mind that prerequisite of outsourcing is the flexibility of internet connection and charges of the internet service.

Besides government initiatives relating to promoting outsourcing market, some private training institutions and organizations are conducting various training sessions that help the professionals to learn the reality of the outsourcing market. Training on various outsourcing topics, Bangladeshi outsourcers are being skilled and confident in completing the buyer’s assigned job and spontaneously fulfilling the job criteria. Among all outsourcing business and training institute in Bangladesh, ExecRPO [10] is playing a vital role to training for coping with the international market

V. RECOMMENDATION

In the world, some specific regions like in India and China are dominating the outsourcing market. Besides these two countries, Sri Lanka and the Philippines have also a vital role in the market. Bangladesh is also doing well but not in the level of international expectations yet. To cope with the international market, the country needs to have extraordinary job skills and educational enhancement that help to make them compete internationally. Bangladeshi outsourcing professionals with required job skills and educational background have not properly exhibited their professionalism and thereby our outsourcing industry is still at introductory stage.

Nowadays, outsourcing market is competitive and requires skillfulness. Without an international level IT knowledge and education, it’s not possible to cope with the market. If outsourcers do not upgrade their own knowledge regularly with competitors, they will lose vital international market share. Our neighboring country India is a trusted market because they have the combination of skill labors, high-speed internet facilities, and fluency in English communication. This is the primary reason for hiring Indian workers. If we have strong educational background, proper guidelines, high-speed internet facilities, English communication skills and IT learning, success is inevitable.

Our outsourcing market is a double minded phenomenon, some talented people are coming to this rising sector, but most of them are not staying for good; switching to their academic background related job or government job as a permanent profession. Others who are involved in outsourcing do not possess expected skill sets. As a result, after a certain period of time, the professionals are going through job crisis and facing different job-related problems that are upsetting the local outsourcing market development and growth.

VI. CONCLUSION

Bangladesh is a small country and also has infrastructural limitations in various sectors. Besides these limitations, it has also reached a stage of achievement gradually. Outsourcing sector is also facing severe infrastructure problems, but it is bliss that beyond of all hurdles and problems, our outsourcing professionals and remote workers got acclaimed internationally in the past few years. It is a positive insight for outsourcing market as a rising sector.

It is clear that despite various limitations of outsourcing in Bangladesh, our government and related authority are trying to promote the ICT sector which is congenial to IT outsourcing. If the IT knowledge spreads across the country, educated and talented young will build their career in this industry and boost up the market at the expected level. We know when knowledge, skill, creativity and the proper working environment exist in a sector; success is inevitable. Our outsourcing sector will reach at the highest level in foreseeable future by the cooperation of all the stakeholders of this industry.

VII. REFERENCE

The Well-Being Situation of the Workers of Apparel Industry in Bangladesh: A Claim to Sweetener

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Abstract- The objective of the study is to develop a detailed understanding about the challenges faced by the RMG sector in ensuring well-being of the workers in Bangladesh. The overall research focuses in detailed behaviour and lifestyle of workers that includes basic services such as health, education, access to information etc. and availability of products and services with the influences of their decision making about basic needs. Descriptive statistics were used to describe the present well-being scenario of the workers and inferential statistical data were used to identify the relationships between the overall well-being situation and the working lives of the workers. The results show a huge variance over the workers from different criterion. But the lacking of good understanding between the authority and workers, ignorant nature of the authority is more or less same (except a few factories). But workers’ overall condition is emerging at a very diminishing rate though these workers have huge contribution in making Bangladesh ranking second in exporting ready-made garment. The findings recognized in the study are very crucial to bung up at the most shortest possible time.

Keywords- wellbeing situation, apparel industry of Bangladesh, RMG stakeholder analysis.

I. INTRODUCTION

Bangladesh exports apparels and textiles for last four decades. During this time there has been different phases of challenges and prosperities. Industry has witnessed lots of vital occurrences throughout this era. However the ‘Rana Plaza’ incident and ‘Tazreen Fire’ incident have an immense impact on changing the overall fashion industry in our country. Necessary steps are being taken by the owners to meet the complaints of the buyers. But the wellbeing of the workers are always been overlooked. These 4 million workers who are the reasons of making Bangladesh number 2 in exporting ready-made garments are unappreciated either way. Then again it is to acknowledge that prevalence of child-labour and life-threatening working conditions have changed over the years along with poverty-level wages. Here the employers need to remote the tendency of making profit while ensuring wellbeing. In fact, investing in the workers’ wellbeing unlocks numerous societal benefits as well as opens opportunities for retreating the industry’s humanitarian’s code. As employers have already been taking measures for ensuring complaints issues so it would not be a chaotic issue for them to ensure a healthy wellbeing condition. Our study refers to current wellbeing condition of the workers and their demands that should be focused on every possible aspects of sound lifestyle.

At the individual level, improved wellbeing can result in healthier, happier, safer, more educated and financially stable workers. Eventually businesses will also be benefitted by employee engagement, productivity and reduction of employee absenteeism along with decreases in ancillary expenses.

II. METHODOLOGY

We have collected data from secondary sources regarding the well-being condition of our garments worker and tried to gather as much resources to develop a model for understanding their condition better in a systematic way.

Our primary data are collected from surveys of garments worker based on our proposed model to see if we can actually find out their pain
point and can formulate effective solutions. We have visited factories of Quality Apparels Ltd, Shezad Apparel Ltd, Asif Sharif Textile Ltd, Panda Fashion Ltd, Rex Fashions Ltd from Dhaka and B.S.A Garments Ltd, Vanguard Apparels Ltd and Kenpark Ltd from Chittagong.

II.1 Sample size determination

\[
d_\alpha = \pm 0.05 \quad p = 0.5 \quad (to \ be \ in \ the \ safer \ side), \\
q = 0.5 \quad z = 1.96 \quad (at \ \alpha = 0.05), \quad N = 4000000
\]

\[
N = \frac{NZ^2pq}{x^2pq + d_\alpha^2N} = \frac{4000000 \times 1.96^2 \times 5 \times 5}{1.96^2 \times 5 \times 5 + 0.05^2 \times 4000000} \\
= 384.123 \approx 385
\]

So optimum sample size should be 385 but then again due to our time and money constraint our sample size is 203. Now we will adjust the value of \( \alpha \).

\[
N = \frac{NZ^2pq}{x^2pq + d_\alpha^2N} = \frac{4000000 \times z^2 \times 5 \times 5}{z^2 \times 5 \times 5 + 0.05^2 \times 4000000} \\
= 203
\]

\[
\therefore \quad z = \pm 1.448
\]

This \( z \) value will justify an \( \alpha = 0.1476 \)

II.2 Primary Data Collection

We have conducted a survey on the basis of this well-being index and 203 garments workers participated in our survey. 71.92% of our respondents were female workers and we visited around 8 factories to conduct the survey. Due to our time and money constraint we couldn’t reach more factories.

III. REVIEW OF LITERATURE

Knowing the historical background to the study of wellbeing is necessary to the definition of wellbeing. Two approaches emerged: the hedonic tradition and the eudemonic tradition have highlighted positive psychological functioning and human development (Dodge, Daly, Huyton, & Sanders, 2012).

Wellbeing is a multi-dimensional construct (e.g., Diener, 2009; Michaelson, Abdallah, Steuer, Thompson, & Marks, 2009; Stiglitz, Sen, & Fitoussi 2009) (Dodge, Daly, Huyton, & Sanders, 2012).

Various journal articles have offered to define wellbeing to show variation in terms of identifying dimensions. While outlining the basic structure of it, they emphasized on positive and negative affect that has been identified by the work of Diener and Suh (1997). Scholarly work includes that of Diener & Suh (1997) who theorized that subjective wellbeing consists of three interrelated components: life satisfaction, pleasant affect, and unpleasant affect. Affect refers to pleasant and unpleasant moods and emotions, whereas life satisfaction refers to a cognitive sense of satisfaction with life. Similarly, Ryff (1989) identified the important aspects that establish wellbeing in terms of autonomy, environmental mastery, positive relationships with others, purpose in life, realization of potential and self-acceptance. Recent research has placed different emphases on what wellbeing is: ability to fulfill goals, happiness, and life satisfaction. However, again, this highlights the problem that researchers have focused on dimensions or descriptions of wellbeing rather than on definitions (Christopher, 1999).

However, despite the shortfall, and analyzing all the researches, ‘wellbeing’ can be defined as:

“An intangible multidimensional paradigm categorized by happiness, fulfillment and satisfaction in life, the degree to which depend on the net positive effect of human emotions.”

IV. REASON BEHIND ADDRESSING THIS PARTICULAR ISSUE

Export value in RMG sector and GDP growth rate have a Pearson correlation value of 0.6906. 80% of the total export comes from RMG sector contributes to the Pearson correlation value of 0.99969 between total export and RMG export is not a surprise at all. So our RMG industries influence a lot in increasing our growth rate. And export in RMG is the sole backbone of our exports.
Almost 4 million people are directly involved in RMG sector as a worker. If we consider that they belong to a 4 member family then RMG alone is shaping the lives of around 12 million people of Bangladesh.

Though the fire safety conditions and building code is checked regularly in garments factories; the worker’s overall condition is still bleak. Wage increased but it is still far below the living wage of Dhaka city. Working hours are not maintained at all. Though women possess the major share of labour force, they are still stereotyped, dominated and not given due importance. And moreover they are allowed to form labour union.

For running any type of business, one should think about the people first. Management should take care of the people. The government should ensure the wellbeing condition of worker’s on whom our country’s export depends. If we cannot ensure not only their safety, proper wage but also their overall life condition then the system will fail and our RMG sector will not be sustainable if we cannot treat those people the way they deserve.

Apart from all of these, from a purely business perspective everyone now knows that how much worker’s mental conditions have impact on the productivity. So either sympathetically or profitably, employers have to ensure their well-being to have a sustainable and profitable business in RMG sector.

V. WELL BEING INDEX

A person who doesn’t have to worry whether the office building will collapse constantly or not will have a different perception of well-being than a person who worries about the chance of a building collapse constantly. If we think about the garments worker’s life of Bangladesh, work has the most importance in their life. Average working hours for a garments worker is 10 hours or more.

So keeping everything in mind we developed this model of well-being index with following 10 indicators along with 43 categories.

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>Persons per room</td>
</tr>
<tr>
<td></td>
<td>Water quality</td>
</tr>
<tr>
<td></td>
<td>Electricity supply</td>
</tr>
<tr>
<td></td>
<td>Sanitation</td>
</tr>
<tr>
<td></td>
<td>Housing expenditure</td>
</tr>
<tr>
<td>Standard of living</td>
<td>Support to the family</td>
</tr>
<tr>
<td></td>
<td>Disposable income</td>
</tr>
<tr>
<td></td>
<td>Net financial wealth</td>
</tr>
<tr>
<td></td>
<td>Average earnings</td>
</tr>
<tr>
<td>Workplace</td>
<td>Job security</td>
</tr>
<tr>
<td></td>
<td>Professional development</td>
</tr>
<tr>
<td></td>
<td>Communication &amp; negotiation</td>
</tr>
<tr>
<td></td>
<td>Satisfaction in job</td>
</tr>
<tr>
<td></td>
<td>Employees working hour</td>
</tr>
<tr>
<td></td>
<td>Work-life balance</td>
</tr>
<tr>
<td></td>
<td>Equality &amp; acceptance</td>
</tr>
<tr>
<td></td>
<td>Exploitation</td>
</tr>
</tbody>
</table>
We have conducted a survey on the basis of this well-being index and 203 garments worker participated in our survey. 71.92% of our respondents were female workers and we visited around 8 factories to conduct the survey. Due to our time and money constraint we couldn’t reach more factories.

We asked questions corresponding to each category on a scale of 1 to 5. 1 being the worst case scenario of the category and 5 being the best case scenario of the category.

For example, if someone has no job security; his/her categorical value for job security will be 1. Similarly if someone’s working condition is good; his/her categorical value for working condition will be 4. And for neutral answer the value is 3.

From the survey we got that most of the indicator’s value is equal to or less than average. Only health seems to exceed the average value.

TABLE II
AVERAGE VALUE FOR EACH INDICATORS

<table>
<thead>
<tr>
<th>INDICATORS</th>
<th>VALUE (Out of 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>3.01</td>
</tr>
<tr>
<td>Standard of living</td>
<td>2.79</td>
</tr>
<tr>
<td>Workplace</td>
<td>2.22</td>
</tr>
<tr>
<td>Community</td>
<td>2.82</td>
</tr>
<tr>
<td>Education</td>
<td>2.65</td>
</tr>
<tr>
<td>Civic engagement</td>
<td>2.71</td>
</tr>
<tr>
<td>Health</td>
<td>3.28</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>2.95</td>
</tr>
<tr>
<td>Safety</td>
<td>1.60</td>
</tr>
<tr>
<td>Disaster preparedness</td>
<td>1.49</td>
</tr>
</tbody>
</table>

In our coordination schema, only parameter is well-being condition of garments worker. We have developed 10 complex variables and a total of 43 simple variables to understand workers condition so that measures can be taken to address and resolve those issues and ensure their better condition not only by the owners of the factories but also government and other organizations working in this sector.
We have found from our survey that most of the workers have little to no knowledge regarding fire safety measures which is really disappointing after having seen such tragedy like “Tazreen Fire”.

Also people have no scope for professional development opportunity. If we see closely 10 lowest values 6 belongs directly to workplace indicator and net financial wealth indirectly affected by the income they get from work.

TABLE III
10 CATEGORIES WITH THE LOWEST VALUES

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire safety knowledge</td>
<td>1.14</td>
</tr>
<tr>
<td>Professional development</td>
<td>1.29</td>
</tr>
<tr>
<td>Communication &amp; Negotiation</td>
<td>1.35</td>
</tr>
<tr>
<td>Employees working hour</td>
<td>1.39</td>
</tr>
<tr>
<td>Work-life balance</td>
<td>1.44</td>
</tr>
<tr>
<td>Personal development</td>
<td>1.49</td>
</tr>
<tr>
<td>Net financial wealth</td>
<td>1.54</td>
</tr>
<tr>
<td>Feeling safe walking alone at night</td>
<td>1.55</td>
</tr>
<tr>
<td>Harassment outside work place</td>
<td>1.65</td>
</tr>
</tbody>
</table>

TABLE IV
10 CATEGORIES WITH THE HIGHEST VALUES

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s health</td>
<td>3.79</td>
</tr>
<tr>
<td>Social support network</td>
<td>3.65</td>
</tr>
<tr>
<td>Sanitation</td>
<td>3.64</td>
</tr>
<tr>
<td>Harassment inside work place</td>
<td>3.54</td>
</tr>
<tr>
<td>Maternity leave</td>
<td>3.54</td>
</tr>
<tr>
<td>Sexual &amp; reproductive health</td>
<td>3.50</td>
</tr>
<tr>
<td>Voter turnout</td>
<td>3.49</td>
</tr>
<tr>
<td>Access to health care</td>
<td>3.44</td>
</tr>
<tr>
<td>Average earnings</td>
<td>3.39</td>
</tr>
<tr>
<td>Children’s education</td>
<td>3.38</td>
</tr>
</tbody>
</table>

VII. MONITORING & IMPROVING WORKER’S WELL-BEING THOROUGH WELL-BEING INDEX

We have found that they are very serious about their children’s health and education. And according to many respondents their aspiration is mostly about their children getting educated and prosper in life. Their social support network is also strong and very high value in harassment inside workplace means that they feel safe inside the workplace rather than outside.

TABLE IV
10 CATEGORIES WITH THE HIGHEST VALUES

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s health</td>
<td>3.79</td>
</tr>
<tr>
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</tr>
<tr>
<td>Children’s education</td>
<td>3.38</td>
</tr>
</tbody>
</table>

Every factory should conduct this survey on their worker’s to understand them better. And government should make this mandatory to monitor every factory’s workers condition and take necessary actions accordingly. This will identify their level of discomforts. Issues can be identified such as whether it is their personal matter or it is because of the low wage creating a loop with nowhere to escape.

We cannot solve the problem of 4 million workers at once. But we can develop a solution
mechanism and form institutions that will gradually take actions and ensure their well-being based on our findings and in the long run there won’t be any more ‘Rana Plaza’ or ‘Tazreen Fire’ tragedy. They will happily take charge of our exports and take us to the 1st position in RMG export surpassing China in no time.

VIII. CONCLUSION

Wellbeing is a very broad concept. We have tried our level best to make the term more rigid. Workers are the key role players in the industry. Hence the employers need to be more careful about the wellbeing of workers. Wellbeing initiatives can bring huge change over the quality of life of the workers and happy workers can have meaningful business impact on the organizations. It is their right and they deserve it. It means something more than just happiness.

REFERENCE


The Paradigm of Green Microfinance: Implications of Triple Bottom Line Concept in a Developing Country

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²Department of Development Studies, Bangladesh University of Professionals, Dhaka, Bangladesh

Abstract - Climate degradation, natural resources exhaustion and energy crisis have put environmental concerns high on the global development agenda. In recent years, these issues have also been addressed by the microfinance fraternity as ‘green microfinance’ that upholds the concern for environmental responsibility along with the social and financial objectives. This is conceptualized as “people”, “planet” and “profit”, i.e. the “Triple Bottom Line” framework by the academia. With this backdrop, this qualitative research emphasizes that green microfinance not only pursues profit, but also promotes ecological balance within businesses, resources, the environment and society. In addition to reviewing the theoretical arguments in the prevailing literature, this article encapsulates the potential benefits that lead microfinance institutions to engage in green microfinance interventions. In this backdrop, the research provides preliminary insights and groundwork to the target audience of microfinance institutions, renewable energy policy makers and stakeholders to formulate relevant strategic options in sustaining green microfinance ventures.

Keywords - Micro-finance, Green Microfinance, Triple Bottom Line, Renewable energy.

I. INTRODUCTION

Growing interest by academicians and practitioners as well as the increasing need for knowledge creation and dissemination in the microfinance sector, led to the development of “Green Micro-finance” ideology. In recent years, along with the financial and social objectives, the microfinance fraternity has embraced the concern for environmental bottom line that initiated the development of green microfinance (GMF) programs [1].

Bangladesh can be considered as the birth place of the current concept of microfinance that is increasingly being replicated in many nations of the world. However, despite its rapid economic growth and negligible carbon footprint, the Global Climate Risk Index 2017 ranks Bangladesh as the sixth most vulnerable country in the world due to the consequences climate change [2]. Particularly, the poor and underprivileged populations are in the frontline who have been suffering the most as a result of climate change adversity [3]. Realizing this, a growing interest is evident in the Microfinance Institutions (MFIs) in promoting GMF practices to reduce detrimental ecological impacts and foster environmentally-friendly initiatives [4].

Worldwide, there is a major transition underway in the energy sector to considerably cut global green house gas emissions for mitigating climate change and enhancing energy security [5]. Improved energy supply is essential sustainable development and poverty alleviation [6]. Recognizing the important role that energy can play in addressing the many dimensions of poverty, many MFIs in Asia and Sub-Saharan Africa have introduced loans to purchase modern, renewable energy systems that reduce GHG emissions and uplift the clients’ living standard [7]. Yet, 1.317 billion people worldwide do not have access to energy, and of them, 99.8% live in rural areas of developing nations [8]. This indicates the market potential for GMF programs, like energy lending by MFIs in these nations, is significant, particularly in the countries like Bangladesh that have energy crisis of low electrification rates in poor and rural communities [9].

With a significant contribution in the socio-economic development of rural communities [10], proponents of GMF claim that microfinance institutions have a significant role to play to promote environmental sustainability [11][12][13]. This called for the rationale of triple bottom line concept for GMF interventions [14]. The principle of Triple bottom line (TBL) has been defined around the objectives of maintaining financial viability while advancing the social interests of stakeholders and protecting the environment; this corresponds to the social, financial & environmental goals of GMF [15][16]. With this backdrop, the study aims to synthesize the growing body of literature on the rationale of GMF practices and identify its implications in the light of TBL framework.

Drawing on a variety of information stemming from sources such as research in academia, financial reports, in-depth interviews, and field observations, the present study suggests that green microfinance in Bangladesh is a young but promising sector. Some notable programs have already been initiated by the Non-Government Organizations (NGOs) and MFIs under the state owned supervisory institution Infrastructure Development Company Limited (IDCOL) for disseminating renewable energy (i.e. Solar Home System, Biogas technology etc.) to the rural population. If policies and incentives are vigilantly executed and can be incorporated in the environmental strategies, this sector offers long-term rewards [8]. The current study is a work in progress that attempts to call for research attention on the emerging field of GMF in a developing country like Bangladesh.

This paper sets forth to provide the methodology of research in section II followed by a brief overview on conceptual background of GMF and its implications from

Paper# ICBM-17-330
the perspective of TBL outline, as illustrated in section III. The prospect of MFIs in Bangladesh for developing green practices has been highlighted in section IV demonstrating a conceptual model based on current practices. Finally, the study concludes in section V with an emphasis on relevant policy formulations and further research in promoting the institutional endeavors in this regard.

II. RESEARCH METHODOLOGY

The present study is qualitative and deductive in nature that contains the incremental benefits of environment friendly initiatives developed by MFIs and outlines their motivations, potentials and constraints. To explore the GMF interventions, the study employs the theory of triple bottom line framework and then reviews the prevailing literature based on the context of the study. In order to accomplish the research objectives both qualitative and quantitative data have been synthesized in this paper.

The primary data source comprises of obtaining information from key informant interviews (KII) with Renewable Energy Program Managers of Gramen Shakti, a prominent NGO disseminating renewable energy technology mostly through Micro-finance schemes. This method of data collection has been applied to avail the opportunity for establishing rapport and get an insiders’ view regarding the rationale of micro-financing the access to RE in rural Bangladesh [17].

The secondary data sources include reports issued by Government and Non-government organizations, Digital Database, Books, Journals, Online Library etc. An extensive and systematic literature search in peer reviewed international journals was conducted at PROQUEST, EMERALD, Elsevier, Google Scholar, Research Gate, IEEE, JSTOR and Science Direct platforms to gather essential insights for the study.

III. LITERATURE REVIEW

A. Microfinance

Microfinance targets the lower-income households to ensure access to affordable financial services offered by retail providers to finance income-producing activities, build assets, stabilize consumption, and protect against risks. These services include savings, credit, insurance, remittances, payments and others [18]. The microfinance sector has attained 12 percent growth per year in total outreach over the last decade and now reaches over 101 million borrowers across the globe with a gross loan portfolio of $89 billion [19]. Yet microfinance reaches less than 20 percent of its potential market among the world’s three billion or more poor [20].

By focusing on expanding financial outreach to the underprivileged populations, MFIs have intensive knowledge of, relationships with, and access to low-income people with widespread branch networks on the ground [7].

B. Green Microfinance

Over the past decades, microfinance has strongly advanced on the potential of realizing the double bottom line goals of financial viability and social impact [21]. However, in the recent years, several practitioners from the microfinance industry have started to assert that MFIs should expand their services further along with these double objectives to address environmental sustainability which has been conceptualized as Green Microfinance (GMF) [22]. It is the application of microfinance to promote not only financial inclusion and social empowerment, but also environmental sustainability [4].

Environmental protection is a critical issue for people living in poverty as they often suffer the most due to climate change, sea level rising, and weather disruptions. Recognizing this, green microfinance attempts to incorporate a third bottom line while maintaining positive financial and social performance [18]. A report on GMF by European Union, 2013 refers to a survey result on 160 MFIs primarily from developing nations, which revealed that 78% of MFIs perceive to have a role to contribute in protecting the environment; 19% believe that environmental protection is a major objective, while 49% believe that it is an imperative objective [23]. Thus the incentives to introduce the “environment” component in addition to the MFIs’ socio-economic interest, can be summarized by the following observations:

- The clients of MFIs, especially in rural areas, are among the most vulnerable to the consequences of environmental degradation [3] [9].
- The activities of MFIs’ clients may sometimes cause severe damage to the local environment: old, polluting and non-efficient ways of production with potentially negative effects on health and social safety [5] [24].
- MFIs are among the few existing channels that have the potential to directly influence and regulate the activities of rural clients to ensure environmental sustainability along with socio-economic developments. [7] [25].

However, environmental management is still an evolving area for the microfinance sector. Therefore, the question may arise about the rationale of the MFIs’ interest to integrate an environmental dimension that is still considered as a marginal approach in the sector [1] [23] [7]. Researchers in MF interventions, have studied the drivers for adopting GMF practices. A motive in this regard can be the strategic and financial benefits for the institutions themselves that are specified below:

First, by dealing with the environmental issues, MFIs can avail funding from socially responsible investors (SRI) or environmentally-sensitive donors [11] [25] [26].

Second, by expanding their services with GMF, the MFIs can distinguish themselves from competitors and attract clients by offering specific ‘credit and additional
services’ schemes. This may consist of the practices for supporting clients to increase their productivity through access to energy-efficient technologies or training in sustainable production techniques [14] [27] [28].

Third, by embracing the environmental responsibilities, the MFIs can enhance their public image, and uphold staff motivation, and stakeholder relations [12][13][28]. Therefore, MFIs’ interest for incorporating green ventures would entail an incentive on environmental management that is driven by the strategic and financial benefits derived from such initiatives. Table 1 encapsulates the development opportunities and challenges of MFIs for venturing in this sector [1] [4] [7].

C. Triple Bottom Line Approach for GMF interventions

Triple bottom line (TBL) is a sustainability-related construct that was coined by John Elkington (1997) [15]. Evolving over the years, the construct gained significant popularity with the emergence of the term “sustainable development” from the Brundtland Report, published in 1987 [29]. Driven by the sustainability concept, TBL provides a framework for measuring the performance of business and the success of the organization using three objectives: economic, social, and environmental [16]. In his definition of TBL, Elkington used the terms profit, people, and the planet as the three concerns referred to the economic, social, and environmental responsibilities respectively [15].

MFIs venturing in environment-friendly initiatives are pioneers in adopting a triple-bottom-line approach that offers development potentials on the three dimensions: reduction of environmental risks, improvement in living standard and enhanced economic productivity [4][5][8][10][30][35]. In the light of above discussion, the next section of the paper analyzes the GMF interventions in renewable energy technology from a developing nation like Bangladesh conceptualizing the TBL framework, as illustrated in Fig. 2.

IV. THE NEXUS BETWEEN GREEN MICROFINANCE AND ACCESS TO RENEWABLE ENERGY

Energy is central to nearly every major challenge and opportunity the world faces today. Access to energy has a great impact on the life situation of rural population by influencing their economic productivity, health, education, and gender-related issues [31]. The lack of access to modern energy services is one of the reasons impeding developing countries’ efforts to break the poverty cycle [7]. Estimates are that 2.5 billion people worldwide rely on traditional fossil fuels as their principal source of energy for household and small scale economic purposes [25]. The unsustainable harvest of biomass resources and inefficient combustion of open fires indoor and outdoor activities can cause significant damage to the environment (such as deforestation) and human health [8].

This calls for policy formulation by the energy sector to significantly cut global emissions for mitigating climate change and ensuring energy security. Although comparing to the fossil fuel alternatives, investment costs in renewable energy technologies (RET) like Solar Home Systems (SHS) are generally higher, yet this option becomes economically feasible when all externalities (e.g. environmental cost, health hazards etc.) and lower operating costs are being considered [32].

From this context, as the main barrier for the access to renewable energy technology is the high upfront cost, micro-financing the purchase and usage of energy services has proven to be a good solution to overcome this barrier [33]. This is evident from the growth of RET usage in rural households in Bangladesh for electrification through SHS, most of which have been funded and installed by microfinance schemes under the supervision of state owned IDCOL in cooperation with NGOs and MFIs, as presented in Fig. 1 [24]. The renewable energy ventures in Bangladesh have been acclaimed as one of the notable green energy programs in the world in recognition to the development potentials it offers for the rural population in the country [34] [35].

Prospects of Micro-financing in Renewable Energy

A. Social Contributions

The increasing adoption of SHS in the rural communities offers convenience in household chores and reduces harmful in-house air pollution resulting from kerosene vapors [10]. Thus the dissemination of

<table>
<thead>
<tr>
<th>TABLE 1 OPPORTUNITIES AND CONSTRAINTS OF GREEN MICROFINANCE INTERVENTIONS SUMMATERIZED FROM PREVAILING LITERATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clients’ interest</strong></td>
</tr>
<tr>
<td>Role in sustainable development and poverty alleviation:</td>
</tr>
<tr>
<td>Economic productivity &amp; income generation</td>
</tr>
<tr>
<td>Decreased health &amp; safety hazards</td>
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<td>Reduction in environmental risks</td>
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<tr>
<td>Improved living standard</td>
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<tr>
<td>Enhanced access to information</td>
</tr>
<tr>
<td>Technology ownership &amp; knowledge sharing</td>
</tr>
<tr>
<td>Potential benefits / opportunities</td>
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<tr>
<td>Potential costs / Constraints</td>
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<tr>
<td>Balancing the economic and social bottom lines with the</td>
</tr>
<tr>
<td>environmental concerns for the micro-entrepreneur</td>
</tr>
<tr>
<td>Lack of affordability due to higher investment cost</td>
</tr>
<tr>
<td>Lack of awareness on the long term benefit of green</td>
</tr>
<tr>
<td>microfinance</td>
</tr>
<tr>
<td>Limited availability of technical and maintenance support</td>
</tr>
<tr>
<td><strong>MFI’s interests</strong></td>
</tr>
<tr>
<td>Superior organizational image</td>
</tr>
<tr>
<td>Access to new funding (SRI, etc.)</td>
</tr>
<tr>
<td>Diversification &amp; competitiveness</td>
</tr>
<tr>
<td>Market exploration</td>
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<tr>
<td>Increased employee motivation</td>
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<tr>
<td>Reduced credit risk</td>
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<tr>
<td>Managerial capability and willingness to adopt green</td>
</tr>
<tr>
<td>microfinance practices</td>
</tr>
<tr>
<td>Financial cost of implementing new management processes /</td>
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<tr>
<td>programs</td>
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<tr>
<td>Efforts on monitoring &amp; coordination</td>
</tr>
<tr>
<td>Logistics &amp; technical support from regulatory bodies</td>
</tr>
</tbody>
</table>

**This table summarizes the opportunities and constraints of green microfinance interventions as presented in prevailing literature.**
renewable energy contributes in improving health and safety conditions among the most vulnerable groups within the nation as cited by M. Hasan, Manager, Grameen Shakti in a key informant interview session on February 8, 2017 with the authors. By enabling the usage of electronic home appliances like mobile phones, televisions and radios, renewable energy technology increases access to information, enhances living standard and assists in emergency situations [8].

B. Economic Contributions

Renewable energy solutions like SHS has the potential for reducing energy expenses that households incur from traditional biomass fuels, resulting in savings in energy costs [30]. In the off-grid rural areas, power generated by SHS, supports rural businesses to increase their economic productivity and income through extended working hours at night [31]. The domestic production of solar energy equipments has created job opportunity for technicians and local youth in related industries. According to Sustainable & Renewable Energy Development Authority (SREDA), Govt. of Bangladesh, around 70,000 people are directly or indirectly involved with the green energy program that contributed in employment generation in a green industry [34].

C. Environmental contributions

For emerging economies, like Bangladesh, renewable and clean energy provide cost effective opportunities to adopt low carbon development electrification program [5]. This is evident in the fact that, the installation of around 4.1 million SHS in rural Bangladesh, replaces around 180,000 tons of kerosene per year having an estimated value of USD 225 million which is one of the primary sources of greenhouse gas emissions in developing nations [34]. Since about 12% of people in the country have been using renewable energy technologies, there is a significant potential for even greater diminutions of harmful greenhouse gases [24].

Fig. 1. Year wise Growth in installation of renewable energy technology by the MFIs and NGOs

Fig. 2. Triple bottomline framework of green microfinance

V. CONCLUSION

Despite growing attention towards sustainable development, the critical connections between micro-financing the access to energy and poverty alleviation is rarely discussed. The consequences of limited access to modern energy sources, especially electricity, can trap poor communities in a vicious cycle of poverty and underdevelopment. One way to combat this problem while still enhancing the affordability of modern energy in rural communities is by the implementation of green microfinance programs as argued in this paper. Green microfinance is a promising phenomenon in the microfinance fraternity; definitions, terminology, and indicators in this novel area are at an early stage. Consequently, this study has been framed as groundwork that requires further empirical research and multilateral collaboration to better comprehend the prospects and constraints in the evolving arena of green microfinance.

REFERENCES


Factors Influencing Empowerment of Employed Women: A Case Study on RMG Sector of Bangladesh.

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²Department of Accounting and Finance, American International University-Bangladesh, Dhaka, Bangladesh

Abstract – The growth of the Ready Made Garment (RMG) in Bangladesh created new employment opportunity for the women migrants from poor rural household and contributed in poverty reduction. Earning from the job supposed to raise their value within the family and strengthen their capacity to negotiate with members but the evidence on the comprehensive impact on women’s empowerment is insufficient. The empowerment of women is an essential precondition for the alleviation of poverty and the upholding of human rights, in particular at the individual level, as it helps to build a base for social change. The data has been collected from a total of 160 employed women from RMG sector using a self-administered structured questionnaire. The questionnaire was reliable as the reliability score indicated was 0.769. This is an empirical study that aims to identify the empowerment level of the married migrant women working in RMG sector. Descriptive statistics were used to portray the status of employed women and cross tabulation analysis were done to recognize the relationship of different demographic factors like age, family size, and family income with women’s empowerment. This study will aid the RMG sector and the policy makers to develop strategy by providing an insight into the factors that needs to be addressed to strengthen women empowerment in society.

Keywords - Women empowerment, RMG sector, Bangladesh.

I. INTRODUCTION

The RMG sector of Bangladesh which accounts for nearly 80% of its exports flourished because of female cheap labor [1]. This industry has provided the largest employment opportunities for female in the industrial sector where out of 4.0 million manpower employed in BGMEA member factories, 3.20 million are women [2]. As Bangladeshi female are traditionally expert in sewing no sectors can bring as much foreign currency (24 billion in 2013-14, which is the 81% of total national export) that Bangladesh earn from this sector. The year of 2013-2014 the contribution of female RMG worker in national economy is 64.93% where as the total contribution of RMG is 81.16% [3]. Despite the visible contribution of women in the national economy, restrictive gender stereotypes persist at home as well as in the workplace. It is evident that in Bangladesh’s RMG industry, women are locked in low wage positions and at the same time, social disempowerment is prevalent.

Recently, the World Development Report 2012 show, gender equality is smart economics as it can enhance economic efficiency and improve other development outcomes. As reducing the gender gap is a challenge in developing countries, it is an important global research issue to improve the rights, economic condition and social status of women [4]. Human Development Report introduced the Gender Inequality Index (GII), which reflects gender-based inequalities in three dimensions – reproductive health, empowerment, and economic activity. Bangladesh has a Gender Inequality Index value of 0.520, ranking it 119 out of 159 countries in the 2015 index which is much behind than our neighboring countries like Bhutan, Nepal and Myanmar [5]. Women in Bangladesh are particularly marginalized, as they are not only poor but also are disempowered vis-à-vis men [6]. Thus, their participation in income activities are important to improve the social status, economic growth, and empowerment. Musokotwane defined empowerment of women as a process through which women in disadvantaged positions increase their access to knowledge, resources, decision-making power and raise their awareness of participation in their own communities in order to have control over their own environments [7].

Many articles in different journals have focused on various dimensions of women workers in Garments Industry of Bangladesh. They concentrated on issues of female workers like their wages and gender discrimination [8], unfavorable working conditions [9][10], security at the work place [11], violence against the workers [12] [13], raising voice in household and workplace [14]. But very few researches have stressed on the socio-economic empowerment of employed women in the garments industry. Thus this paper will focus on the status of women’s empowerment in this sector and how different factors like age, marital status and family income affect empowerment level. The rest of the paper will discuss about the current literature followed by rationale, analysis, and conclusion.

II. LITERATURE REVIEW

The concept of ‘empowerment’ is complex as its meaning varies depending on the socio-cultural as well as political contexts and hence, it is difficult to furnish a unique definition of empowerment. Empowerment can be defined as the expansion in people’s ability to make...
strategic life choices in a context where this ability was previously denied to them [15]. Women’s empowerment is the process and the outcome of the process, by which women gain greater control over material and intellectual resources and challenge the ideology of patriarchy and the gender based discrimination against women in all the institutions and structures of society [16]. Empowerment is about change in favor of those who previously exercised little control over their lives. This has two sides. The first is control over resources (financial, physical and human). The second is control over ideology (beliefs, values and attitudes) [17]. It is discussed in literature as a process of gaining power or a condition of being empowered at individual or group level [18]. Economic factors have the greatest direct impact on empowering women [19]. However, other researchers added that greater autonomy and changes in social attitudes also lead to the empowerment of women, although the magnitude of their impact is, relatively, smaller than the economic factor [20].

Literature reveals that many authors have provided different measures regarding what constitutes women empowerment. It can include her mobility, intra-household decision making power [21] and general attitudes about her children’s lives [22] [23] as well as on her control over resources [21] and incidence of domestic violence [24]. According to reference [25] empowerment of women was achieved by giving them control over assets and increased self-esteem and knowledge. Researchers also analyzed women’s empowerment through the ability to exercise control over their lives, control over their labor, freedom to move and interact, access to leadership positions and control over reproduction [26]. Women's empowerment has five components: women's sense of self-worth; their right to have and to determine choices; their right to have access to opportunities and resources; their right to have the power to control their own lives, both within and outside the home; and their ability to influence the direction of social change to create a more just social and economic order, nationally and internationally [27].

Studies with women in Bangladesh report that paid work is empowering women to have decision- making in the home, control resources, have greater mobility and are better able to accumulate assets and secure their own well-being [28] [29]. The women who earn and contribute to the family expenditure are able to exercise their rights and power that increases their self-esteem and self-confidence [30] [31] [32]. Focusing on rural areas of Jamalpur district, researchers investigated the impact of female participants on their empowerment, came to the conclusion that the project was a success to significantly raise the women’s economic and social status and decision-making power [33]. In another the impact of microcredit on women’s empowerment was analyzed and they found that microcredit positively influences empowerment. Moreover they indicated that credit programs lead to women taking a greater role in household decision making, having greater access to financial and economic resources, social networks, and freedom of mobility and bargaining power vis-à-vis their husbands [34].

Conceptual Framework

II. METHODOLOGY

The population of the study has been selected based on certain criteria. The study targeted married women of RMG sector. A total of 160 women workers were selected using non-probability purposive sampling technique. Data and information has been collected through questionnaire survey. The field survey was conducted in 2016. To collect the primary data the questionnaire was divided into two sections, one is for demographic information and the other part is to collect information regarding empowerment level. To test the reliability the Cronbach Alpha testing was used as it is the most well accepted reliability test tools applied by social researcher [35]. The closer Cronbach’s Alpha is to 1.0, the higher is the internal consistency reliability. Cronbach measures:

1. Reliability less than 0.6 considered poor.
2. Reliability in the range 0.7 is considered to be acceptable.
3. Reliability more than 0.8 are considered to be good.

The questionnaire used in this research is considered acceptable as its Cronbach Alpha score is 0.769 which is more than 0.70.

This study attempts to analyze how the women empowerment is related with age, family size, family income and education of the women working in RMG sector. The analysis of this research was conducted using SPSS 20. The analysis incorporated basic descriptive statistics and crosstab.

III. RESULTS

The demographic profile of the respondent is given in the table 1 below. Here it can be seen that more than half of the respondents (53.8%) have at least primary education followed by secondary education (38.1%). The family size of most of the workers (47.5%) is only 2-3 members followed by (42.5%) whose family size is 4-6 members. The family income of majority of the workers (75%) is below Tk. 20000 per month. Regarding age structure, most of the female workers were between the age group 16-25 years (62.5%) and there were some (34.4%) in the age group of 26-35 years.

<table>
<thead>
<tr>
<th>TABLE 1 DEMOGRAPHIC PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
</tr>
</tbody>
</table>

## References

[1] Reference 1

[2] Reference 2

[3] Reference 3
From the table II it is evident that most of the women take decision jointly with their husband regarding different decision in the household. However, significant portion of the respondents (30%) don’t have any say regarding medical treatment. Table III indicates majority of the respondents have to take permission to go out (58.8%) or to go to their parent’s house (55.6%). With respect to decision for recreation facilities although more than half of the women jointly take decision with their husband (57.5%), significant percentages (36.9%) don’t have any say in this matter.

According to the table IV it can be summarized that almost 60% of the respondents control their domestic expenditure, decision about asset purchase, family income and own property jointly with their husbands but a significant number of respondents don’t have any control over the following issue (33.1%, 31.9%, 28.1%, 27.5% respectively). On the other hand 37.5% of women have control over the saving from family income.

From the table V it is evident that a greater part of the respondent, always belief that being involved in the income generating activities increases decision making power at home. Majority of the respondents can always give their opinion to their husband regarding household decision and purchase of household items. On the other hand it is visible that almost half of the respondents always take food after their husband and children.

### Table II: Decision in the House

<table>
<thead>
<tr>
<th>Decision</th>
<th>Exclusively I decide</th>
<th>Me and my Husband decide</th>
<th>I don’t decide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision About Number of Children</td>
<td>3.1%</td>
<td>86.9%</td>
<td>10%</td>
</tr>
<tr>
<td>Decision About Children School</td>
<td>6.9%</td>
<td>86.3%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Decision About Children’s Marriage</td>
<td>5%</td>
<td>84.4%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Decision About Medical Treatment</td>
<td>11.3%</td>
<td>58.8%</td>
<td>30%</td>
</tr>
<tr>
<td>Decision About Buying Personal Items</td>
<td>23.1%</td>
<td>58.8%</td>
<td>18.1%</td>
</tr>
</tbody>
</table>

### Table III: Mobility

<table>
<thead>
<tr>
<th>Permission to Go Out</th>
<th>Don’t have to inform</th>
<th>Have to inform</th>
<th>Have to take permission</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.8%</td>
<td>32.5%</td>
<td>58.8%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Permission to go to Parents House</th>
<th>Don’t have to inform</th>
<th>Have to inform</th>
<th>Have to take permission</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.8%</td>
<td>35.6%</td>
<td>55.6%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decision for Recreational Facilities</th>
<th>Don’t have to inform</th>
<th>Have to inform</th>
<th>Have to take permission</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.6%</td>
<td>57.5%</td>
<td>36.9%</td>
<td></td>
</tr>
</tbody>
</table>

### Table IV: Control over Resources

<table>
<thead>
<tr>
<th>Control over Domestic Expenditure</th>
<th>Exclusively I decide</th>
<th>Me and my Husband decide</th>
<th>I don’t decide</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>56.9%</td>
<td>33.1%</td>
<td></td>
</tr>
</tbody>
</table>

### Table V: Self Respect

<table>
<thead>
<tr>
<th>Decision</th>
<th>Always</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Generating Activity</td>
<td>56.3%</td>
<td>29.4%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Increases Decision Making Power at home</td>
<td>55.6%</td>
<td>32.5%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Give Opinion Freely to your Husband</td>
<td>51.9%</td>
<td>32.5%</td>
<td>15.6%</td>
</tr>
<tr>
<td>Regarding Household Decision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Give Opinion Freely to your Husband</td>
<td>47.5%</td>
<td>26.3%</td>
<td>26.3%</td>
</tr>
<tr>
<td>Regarding Purchase of Household Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Take Food after your Husband and Children</td>
<td>42.5%</td>
<td>36.9%</td>
<td>20.6%</td>
</tr>
<tr>
<td>Ask Help from Husband for Household Chores</td>
<td>50%</td>
<td>34.4%</td>
<td>15.6%</td>
</tr>
<tr>
<td>or Child Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Get Help from Husband for Household</td>
<td>33.8%</td>
<td>45.6%</td>
<td>20.6%</td>
</tr>
<tr>
<td>Chores or Child Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opinion During Dispute</td>
<td>24.4%</td>
<td>20%</td>
<td>55.6%</td>
</tr>
<tr>
<td>Gender Preference for Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbally Abused by Family Member</td>
<td>6.9%</td>
<td>40%</td>
<td>53.1%</td>
</tr>
<tr>
<td>Physically Abused by Family Member</td>
<td>5%</td>
<td>27.5%</td>
<td>67.5%</td>
</tr>
</tbody>
</table>

### Table VI: Decision about Medical Treatment

<table>
<thead>
<tr>
<th>Age of Respondents</th>
<th>16-25</th>
<th>26-35</th>
<th>35+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>100</td>
<td>55</td>
<td>5</td>
<td>160</td>
</tr>
<tr>
<td>% within Decision</td>
<td>75%</td>
<td>63.8%</td>
<td>22.2%</td>
<td>62.5%</td>
</tr>
<tr>
<td>Count</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>% within Decision</td>
<td>22.9%</td>
<td>35.1%</td>
<td>61.1%</td>
<td>34.4%</td>
</tr>
<tr>
<td>Count</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>% within Decision</td>
<td>2.1%</td>
<td>1.1%</td>
<td>16.7%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

### Table VII: Permission to Go Out

<table>
<thead>
<tr>
<th>Age of</th>
<th>Count</th>
<th>Have to take Permission</th>
<th>Have to inform</th>
<th>Don’t have to inform</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-25</td>
<td>62</td>
<td>35</td>
<td>3</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>
With respect to asking help and getting help from their husband for house hold chores or child care most of the respondents always get help. On giving opinion during dispute majority of the respondents can occasionally give opinion. Here considerable percentage (20.6%) can never give opinion during dispute. Though 55.6% respondents don’t have any gender preference, significant portion (44.4%) have some sort of preference toward a particular gender. The table also indicates that 46.9% of the women are verbally abused by their family members, at the same time 32.5% women are physically abused.

Table VI indicated that decision making ability about medical treatment of women has significant relationship with age as it is observed in the chi-square value ($X^2 = 23.497$, df=4, $p=0.000$). About 75% women who are not involved in the decision of their medical treatment belong to the age category 16-25. However most of the women (61.1%) who can decide about their medical treatment exclusively, fall in the age group of 26-35. The evidence of relationship is also significant.

With respect to mobility, age has significant relationship with age as it is observed in the chi-square value ($X^2 = 15.383$, df=4, $p=0.004$) and decision for recreational facilities ($X^2 = 9.913$, df=4, $p=0.042$). In table VII it is indicated that more than half of the respondents who need to take permission for going out belong to the age category 26-35. The evidence of relationship is also significant.

Table VIII pointed out about the relationship of decision for recreational facilities with age. Almost 60% of the respondents who do not decide about the recreational facilities lie in the age group of 16-25 whereas 66.7% women who exclusively decide on this issue are in the age group of 26-35.

While considering family size it is observed that it has a significant relationship ($X^2 = 15.084$, df=6, $p=0.020$) with giving opinion freely to their husband regarding household decision. Table IX demonstrates that most of the women (48.3%) who could always give opinion to their husband regarding household decision have a family size of 2-3 members followed by those who have a family size of 4-6 members (43.8%).

Next looking into how family income affects different parameters of empowerment it is visible that there is significant relationship with decision about medical treatment ($X^2 = 16.075$, df=4, $p=0.003$), permission to go out ($X^2 = 12.330$, df = 4, $p = 0.015$), permission to go to parents house ($X^2 = 10.789$, df=4, $p=0.029$), take food after husband and children ($X^2 = 10.016$, df=4, $p=0.040$) and gender preference for children ($X^2 = 11.539$, df=4, $p=0.021$). In table X it is seen that most of the respondents (91.7%) who do not decide about medical treatment have family income below Tk. 20,000.

Even with respect to permission to go out, in table XI, most of the women (72.3%) that need to take permission belong to the group with family income below tk. 20,000, followed by those whose family income is in the range Tk. 20,000-Tk. 50,000. Another factor of mobility was regarding permission to go to parent’s house.
Here in table XII it is observed that more than half (67.4%) of those women who need permission to go to parents house have family income below Tk. 20000 followed by those whose family income is in the range Tk. 20,000-Tk. 50,000 (25.8%).

### TABLE XI: PERMISSION TO GO OUT

<table>
<thead>
<tr>
<th>Family Income</th>
<th>Count</th>
<th>Have to take Permission</th>
<th>Have to Inform</th>
<th>Don't have to Inform</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 20000</td>
<td></td>
<td>68%</td>
<td>45%</td>
<td>7%</td>
<td>120%</td>
</tr>
<tr>
<td>% within Income below Tk. 20000 Permitting to go out</td>
<td>72.3%</td>
<td>86.5%</td>
<td>50.0%</td>
<td>75.0%</td>
<td></td>
</tr>
<tr>
<td>20000-50000</td>
<td></td>
<td>20%</td>
<td>6%</td>
<td>7%</td>
<td>33%</td>
</tr>
<tr>
<td>% within Income below 50000 Permitting to go out</td>
<td>21.3%</td>
<td>11.5%</td>
<td>50.0%</td>
<td>20.6%</td>
<td></td>
</tr>
<tr>
<td>50000-200000</td>
<td></td>
<td>6%</td>
<td>1%</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>% within Income below 200000 Permitting to go out</td>
<td>6.4%</td>
<td>1.9%</td>
<td>0%</td>
<td>4.4%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>94%</td>
<td>52%</td>
<td>14%</td>
<td>14%</td>
<td>160%</td>
</tr>
</tbody>
</table>

In table XIII another parameter was measured indicating a relationship between family income and whether they take food after serving husband and children. The respondents, who said that they always take food after husband and children, mainly have family income below Tk.20000 (77.6%). Finally looking at gender preference in Table XIV it is observed that most respondents who always prefer a particular gender belong to the group who has family income below Tk.20000 (61.5%).

### IV. CONCLUSION

Though the women in RMG sector contributes to the economy of the country, a significant number are not only physically and verbally abused but also depend on their family member’s permission to step outside their house. there may exist a possibility of insufficient intake as most of the respondents take food after their husband and children. Majority of these workers prefer male over female children. The research identified relationship of age with medical treatment, mobility and decision for recreation. On the other hand family size only has association with giving opinion about house hold decision. Moreover the family income not only affects participation of women in decision about medical treatment and mobility but also influences their taking food pattern and gender preferences.

The study thus reveals that despite being employed the empowerment is not evident in many areas. Awareness need to be created not only to the women but also their male counterparts through educational programs. The research was conducted only on the RMG sector with limited sample size and concentrated on socio economic empowerment. Further research can be done in other sectors concentrating on women empowerment in their workplace.
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Perceptions of University Students on Building Brand Loyalty through CSR Engagement

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Paper# ICBM-17-371

Abstract - Corporate social responsibility is an additional step that every organization needs to endeavor to improve its local and worldwide communities, which is directly and positively proportional to build up the Brand loyalty of their customers towards them. This paper illustrates how CSR activities influence University Students on building Brand Loyalty. This research is Exploratory in nature where 310 students from various universities in Bangladesh were selected through convenience sampling method. A questionnaire with a set of 22 structured questions was used for surveys through e-mail and social media networks. There were some limitations in terms of accessibility and the unwillingness of respondents. This paper expands the area by directing further exploratory research into the relationship between CSR and brand loyalty. The outcome of this research will also help companies to get an idea about the attributes those would contribute in designing better CSR programs in future.

Keywords - Corporate Social Responsibilities, brand loyalty, University students, Bangladesh, customers perception, customer satisfaction, corporate image, word of mouth

I. INTRODUCTION

In the past, financial performance was the major principle to evaluate a firm's value. Higher positions were given to firms that give more prominent edges monetarily. Expansion of shareholders' wealth was, by a wide margin, the point of convergence of benefit driven associations [1]. In such manner, the emphasis on CSR (Corporate Social Responsibility) in the past was not conspicuous. In this decade, the observation about CSR has changed altogether [2]. The success of a company is now also being measured by its contribution to society [3]. Through CSR, individualistic and corrupt conduct in business can be counteracted [4].

This research explores two areas of marketing, corporate social responsibility (CSR) and brand loyalty. There is lots of research that investigate different parts of corporate social responsibility, yet there is an absence of research in respect to the role of academic institutions in promoting social responsibility [5]. Research suggests that there is a positive relationship between CSR and consumer attitudes [6] but the relationship between CSR and brand loyalty has not been researched comprehensively in the context of Bangladesh. This paper expands the area by directing further exploratory research into the relationship between CSR and brand loyalty.

1) Objectives of the Study: The main objective of this study is to examine the effects of CSR activities to create brand loyalty amongst university students in Bangladesh. This study considers four multidimensional aspects such as customers perception, customer satisfaction, corporate image and word of mouth in case of assessing brand loyalty of university students on CSR. The paper examines that how these four independent variables influence the dependent variable (brand loyalty).

2) Limitations of the study: As a part of research limitation, there were problems and circumstances that affected the research procedure. As the survey was conducted through different social networking media and e-mail, most of the cases there was lack of cooperation and unwillingness amongst the respondents. In case of collecting secondary data, there was absence of information available on the internet regarding CSR activities in Bangladesh.
A. Corporate Social Responsibility: CSR conveys goodwill to the organization as it is committed to its partners, the customers, suppliers, various government and non-government organizations and also its representatives and the society [7]. Research has shown that CSR affects the mindset of the consumers, what they are willing to buy and also the viability of the company [8]. Reference [9] suggests that CSR can be categorized into 5 aspects. These are: 1) what the consumers are expecting regarding the CSR activities, 2) What are the managers thought on those expectations, 3) the organization’s CSR policies, 4) The communication policies regarding CSR, 5) What the consumers think about the present CSR policies. Reference [10] says that a quality product at a low price is not only the demand of the customers. The consumers want the organizations to work for a cause and contribute to the society [11]. Consumers can't be treated just as an economic resource, rather they have the power to assess a company whether the organization works for the social causes or not. The consumers can come forward to help the socially responsible organizations too [12]. Throughout the previous couple of decades, much consideration has been given in aspect of CSR and brand reliability, and in addition to the connection between consumers' behavior and their impression of CSR. However, further and more profound examination of the effect of CSR on brand commitment is required. In the current economic context, both corporate social responsibility (CSR) and brand loyalty speak to critical hypothetical and viable issues, particularly because of the way that they can deliver a few benefits for associations [13]. Consequently, CSR has been demonstrated to upgrade worker fascination and maintenance [14], as well as in associations with customers and stakeholders [15], most consumers anticipating that organizations should take part in CSR [16], also taking this engagement into attention when buying decisions are made [17].

B. Brand Loyalty: It is acknowledged that the loyal customers are the vital source that stimulates an organization irrespective of its size. In strategic marketing, it is an important issue [18]. For maximizing the profit, it is obligatory to keep loyal customers Oliver [19]. Reference [20] suggests that as the customers buy a higher percentage of merchandise from retailers, so a boosted profit margin can be gained from loyal customers. To gain loyal customers, one must ensure customer satisfaction, trust and also quality. Perceived product or service value, perceived customer benefits, customer personal sacrifice and customer personal situation also play an important role in gaining loyal customers [21]. Customer awareness of CSR activity, the purchase intention of the customers and customer loyalty are woven together as one influences the other [22]. Brand identification and brand identity are playing the pivotal role in showing the effects of CSR activities to the customers [23]. If the customers’ thoughts match with the company's CSR support system, then it is likely to boost the loyalty of the customer to the organization [24]. There is a potential area that is quite interesting to work with and explore in the study of the nature of the relationship between customer loyalty and CSR [25]. Through building customer loyalty and sustaining the same, beneficial relationships are developed in which both the customer and the company is benefited in the long run [26]. Proactive CSR and customer loyalty have a positive relationship [27] as well as CSR boosts customers loyalty [28].

III. THEORETICAL FRAMEWORK

Fig. 1. Proposed Research Model

1) Customers’ perception: CSR activities are taken into consideration when assessing an organization or their services [29], and Murphy, 2013). Reference [10] suggests that consumers CSR perceptions build the consumer's support for the organizations who are working for a social cause. The power of negative CSR associations is more than the positive ones as negative ones have more tendency to bring down the reputation of the organization. Again, product evaluations can be elevated through positive CSR evaluation [30]. The impact of CSR on purchase intention is more intricate than thought as CSR can influence it directly or indirectly. Thus, the theoretical and empirical evidence has suggested that CSR activities in consumers evaluation
situation that are perceived more positively lead to higher customer satisfaction and loyalty [8]. Thus, it is expected that CSR and customer perception are positively related to customer loyalty.

Hypothesis H1: Customers’ perception of CSR positively influences customer loyalty.

2) Customer Satisfaction: Customer satisfaction is an important feature of corporate strategy in the marketing literature [31]. It works as a catalyst for long-term profit and market value [32]. Reference [8] suggests that according to the theoretical and empirical data, CSR activities in consumers’ evaluation situation that are perceived more positively lead to higher customer satisfaction. Additionally, a lot of scholars show in different situations show that consumer satisfaction is an antecedent of consumer loyalty [33]; [34]; [35] for low relational customers [36]. Customer satisfaction leads to customer retention, [37], word-of-mouth [38] and purchase intentions [39]. So it is expected that CSR and customer satisfaction are related positively to customer loyalty.

Hypothesis H2: Customer satisfaction positively influences customer loyalty.

3) Corporate image: Customer expectations towards CSR activities lead to stronger evaluations of corporate image [8]. CSR positively impacts product image, quality attributes, corporate image, and consumer purchase intention [40]; [14]. The corporate brand image was analyzed by Reference [41] through store loyalty. Reference [42] found out the relationship between store satisfaction and store loyalty and judged the antecedents of store satisfaction with respect to store image. Their results reveal that store image has a positive impact on store satisfaction and that leads to store loyalty [18]. Therefore, it is expected that customer loyalty is positively related to both CSR and corporate image.

Hypothesis H3: Corporate image positively influences customer loyalty.

4) Word of mouth: According to Reference [43], there are three consequences of CSR, these are: positive word of mouth, positive product evaluation and increased customer loyalty. A research by Reference [44] states that that customers who are concerned about a firm’s CSR are more involved in the marketplace and the sharing of such information, thus it is likely that word-of-mouth would be a consequence. Customer loyalty is revealed from positive word of mouth and also customer recommendations [45]. Hence, it is expected that CSR and word of mouth are positively related to customer loyalty.

Hypothesis H4: Word of mouth positively influences customer loyalty.

IV. RESEARCH METHODOLOGY

This is an explorative research aims to clarify and define the nature of a problem regarding how CSR activities create brand loyalty of university students. The research finalizes four independent variables (i.e., Customers perception, customer satisfaction, corporate image and word of mouth) based on previous research studies. Primary data for the research collected from university students studying in different Universities of Bangladesh.

A. Respondents and Sampling: The population in this study contains the university students' studying in various universities of Bangladesh. Samples are selected randomly considering the convenient accessibility and proximity. Samples in this study follow convenient sampling method under non-probability sampling. The survey questionnaire was sent to students who are studying in various universities through various online social media (e.g., Facebook) and e-mails. Finally, 310 responses of university students from different backgrounds have taken for the research analysis, ensuring a standard of representativeness of 95% (being $e = \pm 5\%; \ p = q = 0.50$).

B. Measurement Instruments: The instrument to measure student’s perception towards corporate social responsibility initiatives undertaken by higher education institutes is taken from [46] who constructed a similar type of research study in the context of Romania. To shed more light in the research, more questions have been added to existing instruments. The new questions inquire about customers’ satisfaction towards CSR and how corporate image and word of mouth create brand loyalty. The close-ended questionnaire was designed with two well-differentiated types of questions including demographic factors and topic related questions. Demographic questions include gender, age, educational qualifications, university category and geographical are where the respondents live in. Topic
related questions comprise 22 questions covering all the dependent and independent variables chosen for the research. Five point likert scale was used from topic related questions anchored by “Strongly disagree” to “strongly agree” and demographic questions followed both nominal and ordinal scales comprising pre-selected categories of answers.

C. Statistical Treatment of Data: The data collected through structured survey questionnaires is put into Google spreadsheet and then transferred into the latest version of SPSS sheet for subsequent analysis purposes. Simple descriptive analyses and frequency analyses are performed in this study to report the results of various questions. To make the analysis more meaningful, the responses are presented in figures and tables. ANOVA analysis is used to calculate means and their comparisons in different demographical profiles. The reliability analysis is also performed to test the appropriateness of data for further investigations. To test the research hypotheses, the main inferential analyses were conducted through regression testing. The significance level (p-value) is set to 0.05 which indicates that not more than 5% error (P < = .05) shall be taken in consideration. If the chance is greater than 5% (5 times in 100 or more), null hypotheses will fail to reject and the alternative hypotheses will not be supported. Furthermore, beta coefficient value is used to measure the relationship between individual variables.

V. RESULTS AND DISCUSSIONS

A. Descriptive Profile of the Respondents

A brief summary of descriptive analysis is presented in this section. Total number respondents were 310 students from various universities. The results indicate students from different universities response towards CSR activities and its attributes that could enhance their loyalty to the brands. The personal characteristics of the respondents show that 62.9 percent of the respondents were male, and 37.1 percent female; 65.5 percent of students were between 16 and 24 years of age, and 34.5 percent of students were between 25 and 34 years of age. Furthermore, 77.1% of students were undergraduate students, 17.4% were graduate students and 5.5% were postgraduate students. 44.2% students were from private universities, 28.4% from public universities, 20% from national university and 7.4% were from medical colleges. Finally, 91.6% of the students were from urban areas, 5.8% from suburb areas and 2.6% were from rural areas.

B. Reliability analysis

The Cronbach alpha coefficiency was examined for the reliability analysis of the scale used in this study. The Cronbach alpha coefficiency for the four items of customers perception is 0.880, suggesting that the items have relatively high internal consistency. Reliability coefficient of 0.70 or higher is considered “acceptable” in most social science research situations [47]. Furthermore, we found Cronbach alpha value of customer satisfaction is 0.884; corporate image is 0.891; word of mouth is 0.864 and brand loyalty is .874 which indicates that all these variables have relatively high internal consistency.

C. Hypothesis testing

We have followed Linear Regression model to check the total model fit. The linear regression also revealed the mathematical value of correlation among Individual independent variables and dependent Variables. The formula for regression model is: y = α + β x + ε, where ‘y’ is the dependent variable, ‘α’ (Alpha) is the constant value, ‘x’ is the independent variable, ’ β’ (beta) is the Coefficient value of ‘x ’ and ‘ε’ for error[48]. To shed more light on the research, we assume Customers Perception= csp, Customers Satisfaction= css, Corporate Image= coin, Word of Mouth= wom, Brand Loyalty= loy, Error= ε, Constant= α, Customers Perception Coefficient = β1, Customers Satisfaction Coefficient = β2, Corporate Image Coefficient = β3, Word of Mouth Coefficient = β4, Brand Loyalty. Therefore, overall mathematical model is: loy = α+ (0.165) csp + css (0.245) + (0.165) coin + (0.261) wom. The linear regression gives a value of R square = 0.490, which means the overall model is moderately fit. The significance value (p-value) for all independent variables compared to the dependent variable (Brand Loyalty) is less than 0.05, which indicates that all the independent variables are supported in the model as the significance level (p-value) is set to 0.05 (P < = .05),

1) CSR> Customers Perception> Brand Loyalty: Here, Customers Perception Coefficient, β1=.165 and the significance level is 0.003, which is below 5%. Therefore, the analysis showed that there is a positive relationship between customers perception and brand loyalty. This states
that integrating positive mindset into customers mindset regarding CSR activities can significantly contribute to creating loyal customers. Therefore H1 is supported for the all components of CSR.

2) CSR> Customer Satisfaction > Brand Loyalty: The coefficient value of customer satisfaction (β2), which is 0.245 with 0.001 of significance level, indicates that customer satisfaction has statistically significant positive influence on brand loyalty. It means that students with higher level of satisfaction regarding CSR activities conducted by an organization tend to become loyal customers of that organization. Therefore, hypothesis H2 is supported.

3) CSR> Corporate Image > Brand Loyalty: Corporate image coefficient, β3 = 0.165 and significance level 0.008 show that there is a positive relationship between corporate image and brand loyalty. Students recognize and value the importance of CSR in considering overall brand reputation or corporate image of the company and that enhance the loyalty of the students towards the company. Hence, hypothesis H3 is accepted.

4) CSR> Word of Mouth > Brand Loyalty: The coefficient value of word of mouth (β4), which is 0.261 with 0.001 of significant level, indicates that word of mouth has positive relationship with brand loyalty. People who have predetermined idea about the product are loyal towards that brand and spread positive words of mouth, try new products of that brand and purchase more frequently. Along with that, customers tend to spread word of mouth about the products/services of an organization which has extensive CSR activities and eventually that leads to brand loyalty. Hence, hypothesis H1 is supported for the all components of CSR.

VI. DISCUSSION AND CONCLUSIONS

The objective of this study was to inspect the university undergraduates' impression of CSR and the socially dependable activities embraced by different organizations in Bangladesh. The findings of the study show that students from different universities have positive mindset on Corporate Social Responsibilities. The aim of this study is to examine if the attributes of CSR (customers perception, customer satisfaction, corporate image and word-of-mouth) could tend to brand loyalty. The findings of the study suggest that customers' perception of CSR activities can make loyal customers. Also, customer satisfaction has statistically substantial positive influence on brand loyalty. That indicates that if customers are satisfied with overall CSR activities of the company they could possibly become loyal customers of that company. Furthermore, the study proves that the majority of students believe that CSR activities indicate that the company has a better reputation as well as the corporate image and that tend them to brand loyalty. Finally, the pattern of results suggests that CSR activities can significantly contribute to creating loyal customers through spreading positive word of mouth by the existing customers to various reference groups.

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Loyalty – An empirical study into consumer behavior on the Swedish chocolate market”, Linnaeus University, School of Business and Economics.


instrument” European Journal of Marketing 35(3/4) pp457-484


APPENDIX

A. Analytic questionnaire

1) Customers’ Perception

1. A company contributing in CSR activities is more socially responsible. (Valérie Swaen, 2003)
2. Companies always provide accurate information about their CSR activities. (Valérie Swaen, 2003)
3. Companies undertaking CSR activities produce environment friendly products/services. (Miles & Covin, 2000).
4. When you evaluate a firm and its product/services, you give importance to its commitment to CSR initiatives. (Oberseder, Schlegelmilch, and Murphy, 2013).

2) Customer Satisfaction

1. A company’s contribution to CSR activities ensures the quality of the product it produces. (Ko et al., 2008; Lee et al., 2010).
2. CSR activities satisfy environmentally conscious customers. (Miles & Covin, 2000)
3. Do you agree that, CSR enhances social values of the customers? (Handelman and Arnold, 1999)
4. Customers are willing to support a socially responsible company than others. (Bhattcharya, Rao and Glynn, 1995).
5. Firms which are contributing into CSR activities improve their products as per customers’ requirement. (Sandhu & Kapoor ,2010)

3) Corporate image

1. It is likely that you buy the products of a company which invests more in CSR activities rather than its competitors. (Chung, Yu, Choi, Shin. 2015).
2. CSR activities provide Competitive advantages to the companies over competitors. Chung, Yu, Choi, Shin. 2015).
3. CSR is more efficient than other promotional activities. (Astara1, Mitoula, Eleni, 2015)
4. CSR activities indicate the overall clean reputation of a company. (Ishaq(2012), Yeo et al.(2011))
5. Customers know more about the companies which are doing CSR than the companies which are not. (Chung, Yu, Choi, Shin. 2015).

4) Word of mouth

1. You are likely to speak positively to surrounding people about a company doing CSR practices. (Ishaq, 2012)
2. Firms doing CSR are more recommended to the potential customers by existing customers. (Ishaq, 2012)
3. CSR activities prevent customers from spreading bad word of mouth about a company. (Anderson, 1998)
4. A positive word of mouth creates brand loyalty. (East et al, 2005)

5) Brand Loyalty

1. Customers tend to be loyal to a brand that is involved with CSR activities. (Ko et al., 2008; Lee et al., 2010).
2. CSR activities influence your buying intention. (Anerson, Mittal, 2000)
3. CSR activities boost your confidence level on a company’s product/service delivery. [Biehal and Sheinin, 2007].
4. You are likely to stay as a customer with a company that is involved with CSR activities. (Anderson, Sullivan, 1993)

B. Demographic Questionnaire:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age Group</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>16-24</td>
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<tr>
<td>Female</td>
<td>25-34</td>
</tr>
<tr>
<td></td>
<td>35-44</td>
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<td>45 and above</td>
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<table>
<thead>
<tr>
<th>Educational Qualifications</th>
<th>Number of Client served</th>
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<tbody>
<tr>
<td>Undergrad student</td>
<td>Bellow 5</td>
</tr>
<tr>
<td>Graduate student</td>
<td>5 to 10</td>
</tr>
<tr>
<td>Postgrad student</td>
<td>10 to 20</td>
</tr>
<tr>
<td>Other degree programs</td>
<td>Above 20</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>University Category</th>
<th>Geographical area</th>
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</thead>
<tbody>
<tr>
<td>Private university</td>
<td>Urban</td>
</tr>
<tr>
<td>Public university</td>
<td>Suburb</td>
</tr>
<tr>
<td>National; university</td>
<td>Rural</td>
</tr>
<tr>
<td>Medical college</td>
<td></td>
</tr>
<tr>
<td>Other degree programs</td>
<td></td>
</tr>
</tbody>
</table>

C. Research instrument: Five point likert scale

<table>
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<tr>
<th>SL</th>
<th>Hypothesis</th>
<th>Standardized Coefficients</th>
<th>p-value</th>
<th>Significance at p&lt;0.05</th>
<th>Result</th>
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<tbody>
<tr>
<td>1</td>
<td>Customers perception of CSR positively influences customer loyalty</td>
<td>0.165</td>
<td>0.03</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Customer satisfaction positively influences customer loyalty</td>
<td>0.245</td>
<td>0.01</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Corporate image positively influences customer loyalty</td>
<td>0.165</td>
<td>0.08</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Word of mouth positively influences customer loyalty</td>
<td>.062</td>
<td>0.01</td>
<td>Supported</td>
<td></td>
</tr>
</tbody>
</table>

R² = 0.496
Consumer Acceptance of Squid In Bangladesh Market

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Paper# ICBM-17-386

Abstract: The conversation of this case study proceeds by identifying problems of promoting seafood product in the community guarded by religious values. It was not conclusive whether Squid is considered Halal or Haram food to consume in Islam- the most practiced religious community in Bangladesh. Halal (legal or permitted) food regulations define what Muslims are allowed to eat. Halal food must follow both religious guidelines in the use of ingredients and processing. This method is controversial and often consumers face challenges in determining which food is Halal to consume. Currently, there are several institutes in Bangladesh that provide Halal certification including one of government agencies. The challenge remains in creating a unified certification method accepted within Muslim community. As there is no unified certification institute for determining Halal or Haram food, we need to rely on consumer insight for acceptance of this product. The outcome of establishing a broad standard and its implementation will have a significant impact on packaged food industry serving the Muslim and Non-Muslim community in Bangladesh.

Keywords: Halal Foods, Haram Foods, Fisheries, Consumer Consortium, Squid, Seafood Industry.

I. INTRODUCTION

1.1 Literature Review

In the 1980s, Bangladesh emerged as a major producer of shrimp, frog legs, and other sea catch fish for export. The seafood industry's sudden success resulted primarily from private entrepreneurial initiatives, in response to a friendly international market. The natural resources to support a growing fisheries sector are abundant, including the enormous potential to develop inland water bodies, as well as even greater productive areas of coastal and offshore waters. Coastal salty-water shrimp farming was more developed and was likely to grow further as investment increased, higher technology was brought to the activity, and the world market continued to be satisfied.

The pace of fishery development was impressive in the 1980s. At the beginning of the 1970s, frozen seafood was responsible for less than 1 percent of exports or US$3.4 million per year. The figure rose to US$40 million in the Fiscal Year 1981, US$113 million in the Fiscal Year 1986 and US$86 million in the first 6 months of the Fiscal Year 1987. At that point, it was suddenly second only to jute as Bangladesh's most valuable export. Fresh and frozen shrimp accounted for two-thirds of Bangladesh's seafood exports in the mid-1980s; Japan purchased more than half. The United States, Belgium, and Britain were the other major buyers; the United States was the prime customer for frog legs, the largest category after shrimp.

Currently, Bangladesh is processing and exporting seafood items like Pomfret, Jew Fish, Indian Salmon, Shad, Catfish, Ribbonfish, Mullet, Tuna, Mackerel, Cockup, and Red Snapper etc. along with shrimps, Hilsha, Crab, and Squid. From the report by Bangladesh Frozen Food Exporter Association (BFFEA) the export of frozen food mount up to 203.45 million (Lbs), in the year 20013-14, earning 543.84million US dollars for the country. Recently, this seafood industry is looking to hit both the international and national seafood market by supplying Squid to the mass population.

In Bangladesh only a niche segment of customer consumes Squid. This is the segment that is habituated to eating out at different ethnic restaurant of the city. Many people travelling abroad for vacation in different exotic location of the globe try Squid as a foreign dish. For many, trying Squid is an adventure and for others it is a fish that can be cooked and served by only Chinese ethnicity. The travelers share their experience with family, friends and colleagues.

Bangladesh has plenty of supply of this exotic seafood i.e. Squid at the Bay of Bengal. The country has been exporting Squid to different location of the earth for decades in fine amount. Different villages in Bangladesh cultivate baby Squid by holding saline water after flood and help the supply chain to export standard size Squid to international market such as Japan. For city dwellers of the country it is an exotic food to try in their weekend dining. We call ourselves “Machey Bhatey Bengali” translated meaning “Fish loving Nation”. Still, we have found doubts among consumers in trying Squid in public eatery. People have different opinion on consuming Squid in terms of religious approval by Islam. Some says it’s Halal (consumable), and to some it’s Haram (not consumable) and for others it was Makru (partially consumable) but no one is sure about the exact status.

Our study is focused on finding the actual status, acceptability by religious principles and consumer’s willingness to try Squid as regular food on Bangladesh.
1.2 Purpose
To understand the perception of the consumer for this exotic seafood segment—Squid and getting an insight to its acceptability in the Bangladeshi society.

1.3 Objectives of the study
- To determine the consumer group for Squid
- To determine the religious acceptability of Squid in Bangladesh
- To suggest ways of improving the product and eliminate drawbacks

II. METHODOLOGY
A holistic approach was initiated in this research to collect data using qualitative and quantitative analysis techniques and solutions were derived based on evidence. The study was well balanced with data collection methodologies such as structured observations, in-depth interviews with industry experts and survey questionnaire for consumers.

The primary data was collected from Halal Bangladesh Service Limited, leading seafood processing plants of the country located in Chittagong and Khulna, In-depth interview of Industry Experts, retail counter sales persons, and spokespersons of the restaurant who are familiar with selling seafood dishes. The secondary data was gathered by visiting retail outlets, Government agencies, Suppliers, Journals and Reference Books. In addition, a survey of 120 consumers of Squid from different location of Dhaka city was conducted to support the evidence of conclusions and recommendations. The major findings of this research will add significant value to the packaged food industry and encourage private sector investment.

III. OUTCOME OF QUANTITATIVE STUDY

Bangladesh is a developing nation with plenty of opportunities to grow in different economic sectors like food, agriculture, roads, highway, infrastructure, technology etc. The world is going through global food crisis and country like Bangladesh suffers the most in such situation. The initiative of a new source of energy is the focus of today’s world e.g. solar energy, natural gas etc. Overlooking the food energy might cause greater damage in near future and it is crucial to add the new list to existing food items.

Bay of Bengal in Bangladesh is a huge source of marine food. Recently, Bangladesh has won territory of Bay of Bengal from India and Myanmar, which is now three times larger than the previous count. The opportunity for production growth expands as the deep-sea territory increase. Bay of Bengalis an abundant resource for seafood which supplies Squid in different shapes and sizes. Bangladesh is yet to create an inland fish culture for Squid but it will grow as market demand strikes.

IV. THE INDUSTRY INSIGHT

The seafood industry of Bangladesh has growing potential to produce packaged seafood product for the national economy. Bangladesh is already a matured industry in the production of Shrimps and other seafood like crab, lobsters, tuna etc with a heavy focus on exports. In fact, seafood is the second largest product after readymade garments in the export domain of the country. The industry has state-of-the-art machinery, infrastructure, and technology, labor force, the supply of raw material etc to fulfill the need of overall supply chain. Entering a new production segment with packaged Squid product will create new horizon in the seafood industry.

4.1 Opinion of Industry Experts
In Bangladesh, only higher income class of the society prefers to consume Squid alongside to expats working in different international NGO’s and multinational firms. Bangladeshi people who are in association with international agencies or exposed to foreign culture are also habituated to consuming Squid. People, who like to dine in the international restaurant, consume Squid frequently and its one of their favorite dish as well. Overall, the education level of a consumer is the determinator factor for liking Squid.

When asked about the religious acceptability of Squid to expert, he claimed that in the Holy Quran it is clearly stated that all deep-sea food is consumable or Halal food. Squid is full of nutrition and does not create any health damage. Therefore, almighty certainly do not restrict human beings from consuming this tasty seafood.

In the capitalist society, a customer is the king and only they should dictate what type of product they want to consume. Therefore, a consumer should be asked questions such as if they are satisfied with existing product packaging, what should be the ideal quantity per package, the design of the package etc. This will eliminate drawbacks for acceptability of the product. An exclusive market research should be initiated by the government before moving into mass production and help private investors to make right choices.

4.2 Opinion of Retailers
Mostly expats purchase Squid from their stores. The foreigners know how to cook Squid properly on their own and need no occasion to consume this exotic seafood segment. They purchase their grocery items from stores in the weekly basis. These people live in the diplomatic zone of the country. Another segment that purchases Squid is higher income Bangladeshi people working in private sectors, businessman, well-educated
housewife and young adults from universities. These customers follow the urban lifestyle and spend a lot of money in trying out new items. Many people come to store to purchase Squid but often don’t know how to prepare a dish out of it. Overall, there is a niche but loyal customer base of Squid product in the capital city and better packaging will increase customer base.

When asked about the religious acceptability of Squid to retailers they said that people who like to consume Squid are not at all concerned about its religious acceptability. These consumers follow global culture and believe in western trends. They enjoy their life, try all new items that come to the stores and purchase repeatedly if they like it. Halal food certification will earn credibility of new and existing customer who is in confusion. At the end of the day, those who prefer to consume Squid will consume it regardless of its religious acceptability.

4.3 Opinion of Restaurant Manager

Squid is consumed by people from different ethnic background and by higher income class of the society in Bangladesh. They are the loyal customer to the restaurants and spend leisure time with friends and family. These customers prefer to try out new and different food items while at a restaurant. In business gatherings Squid is served frequently as a main dish and people enjoy having it. Regular visitors love Squid in their Soup and Noodles. They also prefer to try out international cuisine for this exotic seafood item.

Bangladeshi people who consume Squid are adapted to the international culture and believe that they are free from religious creed. These people are well educated and have plenty of wealth to spend in trying out food items popular over the globe. They are not at all anxious about Halal or Haram food issue. For instance, women who walk into this restaurant may drink alcohol which is not permitted in Islam but she may ask for one so long it is not violating the law of the country.

4.3 Opinion of Government Agency

The government of Bangladesh does not provide any Halal certification of food items. The ongoing project is undertaken by Islamic Foundation of Bangladesh which is a widely accepted Islamic Institute. Mostly, Seafood industry should maintain food standardization program to be operated in and outside of the country.

4.3 Opinion of Certification Body

Every fish and animals in the shape of fish are permissible. According to the Hanafi sect, fishes such as turbot, carp, flipper and eel are permissible to eat. However, sea vermin such as crab, mussel, oyster, lobster, crawfish and prawn are not eaten. Also, other water animals which are not in the shape of fish such as walrus, sea pig etc. are not eaten as well. According to other three sects (Shafi, Maliki, Hanbali), all of the seafood are eaten.

The meaning of the ayahs which are “It is He Who has made the sea subject, that you may eat thereof flesh that is fresh and tender” (1) and “Lawful to you is the pursuit of water-game and its use for food, - for the benefit of yourselves and those who travel” (2) state that seas are a divine benediction storage and man can benefit from them.

With the mentioned ayahs, Allah Almighty informs the permission of all sea animals without exception of a certain kind of them and without putting the condition of slaughtering. In this way; He provides His servants the easiness and wideness. Moreover, He gives a man the permission of using anything in order to entrap them, on condition that not causing animals pain.

As it is known, in point of where they live, animals separate into two as land and sea animals. In regard with which animals of land are permissible, it is explained in the fiqh books. As for the sea animals, there are different views between sects. Complying to the ayahs of which we gave the meanings above, according to Shafi, Maliki and Hanbali sects’ scholars; all the sea animals, all of the animals which live only in the sea but not in the land, -it does not matter where they are available, whether they are in the shape of fish or anything else; they are permissible, they can be eaten. Nevertheless, according to the same sects, it does not matter whether the name of them different or they are alive or dead or a Muslim cached it or a non-Muslim; the judgment does not change. While the sect of Maliki does not accept any sea animal, Hanbali sect accepts eel as Haram and Shafi sect accepts frog, crab and crocodile as Haram because they live both on the land and in the sea.

And according to the Hanafi sect, eating the flesh of the animals which are not in the shape of fish is Haram. Accordingly, animals which perpetually live in the water can be eaten. Turbot, carp, flipper and eel are in this group. But other water animals are not permissible. Mussel, oyster, lobster and crab are not accepted as permissible, they are accepted as Haram. (3) According to the above explanations, while animals such as mussel, carb may be eaten in the sects of Shafi, Maliki, and Hanbali; according to Hanafi sect they are not eaten. The reason why Hanafi sect accepts them as Haram is because these kinds of animals are accepted as dirty both in the respect of appearance and the flesh they have. (Mehmet Paksu Halal- Haram)

Summarizing statement from certification body:

- According to three different sects (Shafi, Maliki, Hanbali), Islam permits consumption to all seafood’s for Muslims including Squid
According to Shafi, Maliki and Hanbali sects’ scholars; all the sea animals, all the animals which live only in the sea but not in the land, it does not matter where they are available, whether they are in the shape of fish or anything else; they are permissible, they can be consumed.

Shafi sect accepts frog, crab and crocodile as Haram food because they live both on the land and in the sea.

Reference of sects:
(1) The Surah of an- Nahl, 14
(2) The Surah of Maida, 96
(3) Al-Mazâhibu’l-Arbaa, 2: 5.

IV. SUMMARY OF SURVEY

A survey of 120 people was conducted in the premier location of the Dhaka city to see if they would like to try Squid, do they consider Squid to be Halal or Haram food and if Halal certification increases their credibility to consumption. All these questions were made after the exploratory research on this topic. The findings of the survey will be discussed in the next segment of this report.

When asked to respondents if they have ever tried Squid, 83 people (36 Students, 13 Business professional, 17 Service professional and 17 Housewives) out 120 people tried Squid. We found no negative answers by the respondents but 37 people (17 Students, 2 Business professionals, 12 Service professional and 6 Housewives) would like to try it. The result opened the door for further investigation of this survey. Among the 120 randomly selected respondents, 63 were Muslim and 20 were Non Muslim who already tried Squid and 32 from the Muslim population would like to try it in future. The populations surveyed were highly educated as 31 people were either has Master degree education and above and 89 holds a bachelor degree. A male to female ratio (58 Male and 62 Female) was carefully maintained in this survey.

5.1 Finding from the Cross Tabulation tests:

From the above findings a cross tabulation test was conducted to check the dependency/independency, association /non-association, relationship/no relationship and connection/no connection of trial by consumer in accordance to their occupation, religion, level of education and gender. From the test it was found that consumer tendency to try squid is independent from their respective occupation. The second thing found from the test was trial of squid has no association with consumers religion and the third was there was relationship of consumer trialing squid with their level of education. Finally, there was no connection found trialing squid with relevant gender.

5.2 Finding from the T-Test:

The t-test is carried out to check whether consumer is aware of squid being Halal or not and if Halal certification increases their credibility to consumption of squid. From the test, it was found 37.6% strongly agree and 36 % agree (73.6% overall) that squid is a Halal food to consume by population regardless of their religion. For all the sample population, Halal certification has no impact on the credibility of consumption. Then again, another t-test was run among only Muslim population from the sample to check whether Halal certification has any impact on consumption reliability. It was found that Muslims consider that Halal certification increases acceptability of consumption. Muslim population also considers squid as a Halal food to consume.

5.3 Finding from the Frequency Test:

Several frequency tests were run to fulfill the objective of the study. A test was run to see how much consumers are willing to pay for the new improved ready to cook packaged product. Over 64% of the population are ready to pay taka 500 and above for the new improved packaged product. The second test was run on consumer ideal quantity of squid per pack. Majority of population choose to have either 250 gm or 500 gm per pack as their right fit. Types of package consumer want to see in the market test hit the ceiling with tin can by 61.6 %. Maximum number of consumer thinks that promotions guide their choices on purchase of product or services. When consumers were asked about preference of purchase location departmental scored the highest (47.2%) on the poll and 12 % pick the dedicated seafood shop. The test run on frequency of shopping showed that consumer favor to shop in weekly basis for grocery items. Finally, a frequency test was run on the selection of media vehicle consumer prefer for the new improve packaged product. The most popular media for Squid promotion voted by target audience was TV media by 32.8%, then in store promotion by 22.4%, 19.2% newspaper, 11% online media and 8% on billboard.

V. RECOMMENDATION

Islamic Institution Bangladesh is devising the process for Halal certification on food items for Bangladeshi consumers. If Squid is launched in Bangladeshi market as packaged food product it should carry Halal certification label. Halal certification will increase authentication to consume Squid by Muslim population and it can also play a vital role in generating new customer base for Squid.
From our survey analysis, it was also found that no ready to cook Squid product is available in the market. The opportunity should be seized by the investor to take the first mover advantage and gain competitive advantage over upcoming competitors. The findings also state that, some unsorted and non branded Squid product is sold in the market. Therefore, initiative should be taken to launch branded Squid product in the market. The market for grocery items like Squid is already saturated with non branded products.

Matching the demand of the consumer with accurate supply and price can only generate repeat purchase. Squid is acceptable and appreciated by the niche segment of patron. The manufacturer will not only gain profit by branding but can also create loyal customer base. A prompt decision making to such quickly changing market environment will aid investors to retain customer and remain competitive in the long run.

VI. CONCLUSION

An in-depth marketing research is required in this topic to understand consumer insight to try out Squid. This will open the door of an entirely new product segment in Bangladeshi market. There is evidence that the product has demand and it will perform well in the market. Squid is a product for premium and niche segment of customer. The people in this segment demand for high quality of food product. They want good quality packaging and labeling to know all the information regarding the product. The factors of packaging and labeling should carefully consider, if the new product commence.

The contingency plan for investing in Squid production and marketing is, if by any chance the product gets rejected by the national market, the International market is ready to import Squid from Bangladesh in bulk quantity and in continuous basis. The overall study supports the idea of producing, supplying and venturing Squid in large quantity in Bangladesh.

VII. REFERENCE

Web usability: a Study on websites of Private Universities of Bangladesh

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Abstract: This research presents the result of an investigation of website-usability based on nine criterions. It describes the usability of university-websites based on an expert review guideline and focuses specifically on 21 private university-websites of Bangladesh. The study takes the entire university websites into consideration and compares among them according to the score they achieved in each criteria. This research also ranked and clustered the private university websites according to their usability score in the following criterion: Home page usability, Task orientation, Navigation and IA, Forms and data entry, Trust and credibility, Writing and content quality, Page layout and visual design, Search usability and Help, feedback and error tolerance. Some of these university websites were found to have unique characteristics like, using graphs to describe information which made them distinct from others. The research found that, the university websites have successfully ensured trust & credibility and received an average of 80% in this section. Moreover, in the home page usability section, the websites also received an average of 70% score. However, it was found that only 15 websites included search option for users and 11 websites had form & data entry section for registration for admission. These findings can help the 21 private universities design their websites by addressing the lacking found in different website usability areas.

Keywords – website usability, private university of Bangladesh, university websites, web design

I. INTRODUCTION

Usability is the estimation of quality of the user experience and convenience while interacting with any product or system. Improving usability of a website can help gain advantage according to research. Considering usability of sites can cut down the number of errors, improve precision, and support uplifting attitude (1), (2). Moreover, in educational websites, it can increase students’ learning experience, confidence, and encourage them to use the website more (3).

Some studies had been done before on web usability of educational websites but none of them focused in the Usability Expert Review (4). However, some studies were done on capturing the point-of-view of the users for e-commerce sites, automobile manufacturers, online bookstores etc. using this method (5), (6). Thus, this research has been specifically done on the educational websites using the Usability Expert Review guidelines.

II. RELATED WORKS

Most of the studies evaluating the usability of educational websites employed either user-based or evaluator-based methods. For example, the usability of academic websites was evaluated by Gonzalez, Granollers, & Pascual (2008) through the heuristic evaluation and cognitive walkthrough methods using the Spanish-Speaking Context of Use (SSCU). 69(Sixty Nine) academic websites’ usability was calculated by a specialized software tool and this was developed to give support to the SSCU usability evaluation. This was developed based on the heuristic evaluation techniques. The research contained twenty-five questions related to four categories: design, content, navigation and search.

The evaluation was done by two experts on web usability and two students who have advanced knowledge on evaluation of heuristic. To evaluate the usability of the website of the Hellenic Open University, Kostaras & Xenos(2006) also utilized the heuristic evaluation method. Five specialized evaluators conducted the research. Ten usability heuristics were used (7). Here these results identified many previously unfound usability issues and problems.

Papadopoulos & Xenox(2008) used the heuristic evaluation on Hellenic Open University (HOU) website’s recent versions in order to evaluate usability by implementing the ten usability performance measurement and rules of Nielsen (7). The evaluation was performed by specialists and different users. The mix of these two assessment strategies distinguished a few usability issues and problems that were not found in the development part of the website and showed how users’ were unsatisfied about some of the features in the site.

Toit & Bothma(2010) explored University of South Africa’s marketing department’s website-usability utilizing heuristic technique of assessment and this was directed by couple of master evaluators. These web usability guidelines were adapted from an earlier research (Mustafa & Al-Zaou’a‘bi, 2008). Meanwhile, Lencastre & Chaves(2008) used questionnaires to evaluate the usability of a website which is made for educational purposes and used by students of Master’s Degree at Minho University, Portugal. Five students from the Masters course were chosen to
participate. Here seven categories contained 49 (forty nine) questions on visual clarification, navigation system, content of the website, control over the site, feedback options, errors shown, and consistency. This questionnaire was made to find students' reactions by gathering data and to find out their perceptions about that educational website. The study conducted by Mustafa & Al-Zoua’bit(2008) also employed a questionnaire specifically to evaluate the usability of websites of nine Jordanian universities which was also done on students. However, he had used a couple of automatic online tools, html toolbox and analyzed webpages to find out website’s internal attributes. The questionnaire was made on the basis of 23 (twenty three) usability sectors which were segmented into some categories, like: content of the website, organization and readability of information, proper navigation and link system, user interface design, overall performance and successfulness and educational information provided in the websites. These results found that, though the overall usability status was acceptable, the content, organization and readability of the websites got the highest score, and then the navigation and linking got the second highest score. However, the other categories, like, user interface design, educational content, performance and successfulness were evaluated as “moderate”.

III. AIM AND OBJECTIVE
This study aimed to do research on some particular design categories and usability of 21 private university websites of Bangladesh. This study used Usability Expert Review guidelines for evaluation. After the evaluation is done, then a comparison has been conducted among the websites. The study also attempted to rank the websites according to their usability scores. The report also clustered the universities into a number of clusters based on their scores in different factors/criterion.

IV. METHODOLOGY
A. Research Instruments
Criteria for evaluating the usability of educational websites were constructed based on Usability Expert Review [http://www.userfocus.co.uk/resources/guidelines.html]. Criterion for Evaluating the Usability are: Home page usability, Task orientation, Navigation and IA, Forms and data entry, Trust and credibility, Writing and content quality, Page layout and visual design, Search usability, Help, feedback and error tolerance.

This is basically a guideline for scoring a website based on 9 (Nine) criterion. There are 20(twenty) guidelines to evaluate the usability of home pages, 44(forty four) guidelines to evaluate how well a web site supports the user’s tasks, 29(twenty nine) guidelines to evaluate navigation and information architecture, 23(twenty three) guidelines to evaluate forms and data entry, 13(thirteen) guidelines to evaluate trust and credibility, 23(twenty three) guidelines to evaluate writing and content quality, 38(thirty eight) guidelines to evaluate page layout and visual design, 20(twenty) guidelines to evaluate search and 37(thirty seven) guidelines to evaluate help, feedback and error tolerance. In total there are 247(two hundred and forty seven) guidelines which can be scored to evaluate a website’s usability. After scoring the websites based on the points listed in the web usability guideline, we have clustered the sites based on scores. For clustering we have used R studio, an open source tool for statistical analysis and programming.

B. Selection of the Websites
http://www.webometrics.info, an international university ranking website, was used to select the top 21(twenty one) private universities of Bangladesh to conduct the study. The selected universities are:

1. BRAC University (BRACU)
2. Independent University Bangladesh (IBU)
3. American International University Bangladesh (AIUB)
4. Daffodil International University (DIU)
5. North South University Bangladesh (NSU)
6. International Islamic University Chittagong (IIUC)
7. East West University Bangladesh (EWU)
8. United International University (UIU)
9. Ahsanullah University of Science & Technology (AUST)
10. Southeast University
11. University of Asia Pacific Bangladesh (UAP)
12. University of Development Alternative (UDA)
13. IBAIS University
14. ASA University Bangladesh
15. Northern University Bangladesh
16. Eastern University Bangladesh
17. University of Liberal Arts Bangladesh (ULAB)
18. Stamford University Bangladesh
19. Prime University
20. Manarat International University
21. Bangladesh University of Business and Technology (BUBT)

C. Procedure
We went through all of the guidelines in each list and mark the websites with a positive or negative score in each of the guidelines. For each checklist item, if the guideline doesn't comply with the website we entered a rating of -1, if it complies, then +1 or if it ‘kind of complies’ we gave 0. As the guidelines are context specific, not all of them were necessarily applicable to review a particular university website. Thus, some of the guidelines were kept blank.
D. Criteria for Evaluating the Usability

- Home page usability
- Task orientation
- Navigation and IA
- Forms and data entry
- Trust and credibility
- Writing and content quality
- Page layout and visual design
- Search usability
- Help, feedback and error tolerance

V. RESULTS

After the scoring is done, then a relative score is computed, where the universities were scored between -1 (negative one) to +1 (positive one). Here is the overall result of all the universities and they are ranked based on their websites’ usability:

Table 1: Overall usability scores in relative measures

<table>
<thead>
<tr>
<th>Ranking (Serial)</th>
<th>University Name (Abbreviated)</th>
<th>Relative Score (0~1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Prime</td>
<td>-1</td>
</tr>
<tr>
<td>18</td>
<td>Stamford</td>
<td>-0.88235</td>
</tr>
<tr>
<td>13</td>
<td>IBAIS</td>
<td>-0.52941</td>
</tr>
<tr>
<td>20</td>
<td>Manarat</td>
<td>-0.23529</td>
</tr>
<tr>
<td>16</td>
<td>Eastern</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>ASA</td>
<td>0.068966</td>
</tr>
<tr>
<td>15</td>
<td>NUB</td>
<td>0.16092</td>
</tr>
<tr>
<td>11</td>
<td>UAP</td>
<td>0.183908</td>
</tr>
<tr>
<td>6</td>
<td>IIUC</td>
<td>0.241379</td>
</tr>
<tr>
<td>2</td>
<td>IUB</td>
<td>0.367816</td>
</tr>
<tr>
<td>17</td>
<td>ULAB</td>
<td>0.425287</td>
</tr>
<tr>
<td>21</td>
<td>BUBT</td>
<td>0.436782</td>
</tr>
<tr>
<td>10</td>
<td>Southeast</td>
<td>0.528736</td>
</tr>
<tr>
<td>9</td>
<td>AUST</td>
<td>0.54023</td>
</tr>
<tr>
<td>12</td>
<td>UDA</td>
<td>0.609195</td>
</tr>
<tr>
<td>1</td>
<td>BRACU</td>
<td>0.62069</td>
</tr>
<tr>
<td>4</td>
<td>DIU</td>
<td>0.850575</td>
</tr>
<tr>
<td>8</td>
<td>UIU</td>
<td>0.850575</td>
</tr>
<tr>
<td>7</td>
<td>EWU</td>
<td>0.862069</td>
</tr>
<tr>
<td>3</td>
<td>AIUB</td>
<td>0.885057</td>
</tr>
<tr>
<td>5</td>
<td>NSU</td>
<td>1</td>
</tr>
</tbody>
</table>

The above result is also shown in graph format here:

Figure 1: Overall relative scores in chart

Short summaries of data found on each of the 21 universities are given below:

1. BRAC University (BRACU): According to the results, BRACU has got an overall score of 63% with above 80% score in trust and credibility and in the home page section. Search usability of this university’s website got the poorest score among the 9 criterion.

2. Independent University Bangladesh (IUB): The overall usability score of IUB is 59% and this website has above 80% in writing and content quality and in the home page section. However, the search usability part has got only 13% which is the lowest score for this website.

3. American International University Bangladesh (AIUB): With total of 69%, the website of AIUB has got the highest score in the homepage section. They scored their lowest in search usability section just like most other websites.

4. Daffodil International University: Again, out of the nine criterion, this website scored highest in trust and credibility and writing and content quality. The overall usability score is 69% but the navigation and IA section received the poorest score for this website.

5. North South University Bangladesh (NSU): NSU has a rating of 72% on their web usability with score of 80% and more in 3 criterion: writing and content quality, trust and credibility and page layout and visual design. However, the website was not found to have any search option.

6. International Islamic University Chittagong: The usability score of this website is 56% and it has good score in the trust and credibility section.
However, the website was not found to have any online application form.
7. East West University Bangladesh (EWU): The results show that EWU website has an overall rating of 68% with above 80% score in 4 criterion: home page, trust and credibility, writing and content quality and page layout and visual design. The admission application form was not available for free, so, it could not be evaluated.
8. United International University: Overall score is 67% for this website with a really good score in home page and trust and credibility section. This website did not score lower than 40% in any criteria.
9. Ahsanullah University of Science & Technology: According to the results, the usability total is 60% with above 80% score in trust and credibility and in page layout and visual design criterion. This university’s website did not contain any online application form.
10. Southeast University: Overall score is 64%. However, there was no search option provided for the users. Online admission forms were also not available in this website.
11. University of Asia Pacific Bangladesh: The results show that the website had an overall rating of 55% and only reaches just above 70% in the writing and content quality section. There was no search input box found in this website.
12. University of Development Alternative: The usability score of this website is 64% and it has good score in the trust and credibility and in page layout and visual design section. However, the website did not have any online application form.
13. IBAIS University: This website scored highest in trust and credibility and scored 52% in overall consideration. Task orientation received the lowest score and there was no online application form available in the website.
14. ASA University Bangladesh: With total of 54%, this website got the highest score in the trust and credibility criteria. It has its lowest score in the forms and data entry section.
15. Northern University Bangladesh: The results show that the website had an overall rating of 56% and had above 70% in 3 criterion: home page, writing and content quality, trust and credibility. Search usability of this university’s website got its poorest score.
16. Eastern University Bangladesh (EUB): The overall usability score of EUB was 52% and this website scored above 80% only in the trust and credibility section. However, the forms and data entry section got the lowest score.
17. University of Liberal Arts Bangladesh: This website scored highest in home page section and got 59% in overall score. Search usability scored the lowest among the other criterion and there was no online application form available in the website.
18. Stamford University Bangladesh: Overall score was 48%. However, there was no search option available. Online admission forms were also not provided in this website.
19. Prime University: According to the results, the overall score is 49% with above 70% score in trust and credibility section. There was no search input box found in this website.
20. Manarat International University: With the total of 51%, this website got the highest in writing and content quality criteria. They scored their lowest in help, feedback and error tolerance section.
21. Bangladesh University of Business and Technology: The results show that, this website had an overall rating of 61% with above 80% score in trust and credibility criteria. They scored their lowest in search usability criteria.

VI. CLUSTERING OF THE WEBSITES
Using R programming tool we have clustered the websites among three clusters based on their scores in different usability aspects. The results, after loading of data and running of R clustering functions, are provided below.

<table>
<thead>
<tr>
<th>Cluster means:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1] 0.7496807</td>
</tr>
<tr>
<td>2 0.1833070</td>
</tr>
<tr>
<td>3 -0.8039216</td>
</tr>
</tbody>
</table>

Clustering vector:
[1] 1 2 1 1 1 2 1 1 1 2 1 3 2 2 2 3 3 2 2

Within cluster sum of squares by cluster:
[1] 0.2430381 0.3826238 0.1199539
(between_SS / total_SS = 88.2 %)

Figure 2: R Studio Output
The following table lists down the name of private universities in different clusters with mean score of the clusters:

Table 2: Universities in different clusters

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>UIU</td>
<td>Manarat</td>
<td>IBAIS</td>
</tr>
<tr>
<td>EWU</td>
<td>BUBT</td>
<td>ASA</td>
</tr>
<tr>
<td>IITC</td>
<td>Prime</td>
<td>NUB</td>
</tr>
<tr>
<td>NSU</td>
<td>Stamford</td>
<td>Southeast</td>
</tr>
<tr>
<td>DIU</td>
<td>Eastern</td>
<td>AUST</td>
</tr>
<tr>
<td>AIUB</td>
<td>ULab</td>
<td>UAP</td>
</tr>
<tr>
<td>IUB</td>
<td></td>
<td>UDA</td>
</tr>
<tr>
<td>BRACU</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VII. FINDINGS

As the paper focuses on website usability, we have found scores for each website in relative measure. Moreover, the research has identified many common and unique factors in the university websites and in this indicates the factors which need to be developed more to ensure better user experience. While most of the university websites had high scores in the trust & credibility and the home page usability sector, many of the websites failed to ensure search option and form & data entry section. The university websites scored an average of 80% in the trust & credibility section and 70% in the home page section. However, the lowest score was received in the search section which had an average score of 35%. Moreover, the second lowest score was found in the help, feedback & error tolerance section with an average of 45% and the rest of the sections had moderate scores which ranged between 50%-70%. Thus, these factors need to be kept in mind while modifying the websites as these are important factors in a university website.

Additionally, some examples of unique features are shared in this section. While most other university websites failed to address the important issues, some of the websites were successful in considering these factors. For example: only 7 universities stated their value proposition in the home page with a tagline or welcome blurb. Moreover, only 4 private university websites are successful in keeping their websites requiring minimal scrolling and clicking. However, some university websites failed to adopt the guidelines which were followed by most others and some of these examples are stated here. 4 out of 21 university websites included irrelevant, unnecessary and distracting information in their websites. However, in order to explore all these points, further research needs to be conducted.

VIII. CONCLUSION

This research investigated the performances and designs of websites of private universities of Bangladesh according to the guidelines listed down in Usability Expert Review guidelines. This research has explored how university websites have performed in different usability criterion. Moreover, a comparison of the university websites’ performance has been done.

This research has some limitations. Firstly this research was limited to only the top 21 private university websites of Bangladesh and did not take all into consideration. Secondly, the research only followed the Usability Expert Review guidelines to judge a website and no other factors have been considered. Lastly, a lot of websites did not have an online admission application form or search option, so those criterions could not be evaluated for all of these 21 university websites.

The usability assessment, which has evaluated 21 private university websites in Bangladesh, provides guidance to the designers of such educational websites. The website designers can get a clear idea from this paper on what usability factors the websites usually lack. Moreover, further research on website users can help determine which of these usability factors affect the user perception the most. Moreover, future research can also be focused on the remaining private university websites which will provide a better view of comparison and evaluation between the usability factors of the websites. This paper helps identify website features that need to be taken into account while evaluating and designing university websites and provides a direction for future analysis.

REFERENCES


Using Data mining technologies in increasing efficiency of garments manufacturing processes in Bangladesh

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Abstract: In the competitive marketplace of the garment industries, the objective requirement to hold position in the market is to be efficient. To survive in this marketplace, data mining can be the new solution. Data mining can be used to analyze and identify hidden patterns in the parameters that control manufacturing processes or to determine and improve the quality of products. The technology can play a role in management of material purchase, distribution centers, inventory, transportation and sales logistics in the garment industry. This paper discusses the prospects of applying data mining technologies in designing optimized processes in garments manufacturing industries in these specific fields. By conducting relevant research articles, this paper tried to find out the prospects where data mining can be applied in the garments manufacturing industry of Bangladesh. This research has found six different areas, such as, purchase of materials, sales system, inventory management, transportation system, distribution center management and management implications in operations management in which data mining can be applied to have a more efficient system.

Key words: data mining, garment industry, operations management

I. INTRODUCTION

The garments industry of Bangladesh has not only played a big role in the development of the economy by fetching billions of dollars from export earnings but also ensured jobs for millions of unemployed people. According to Export Promotion Bureau data (1), the export earnings from the clothing industry in Bangladesh was valued at $28.09bn in the fiscal year 2015-2016 which resulted in a growth of 10.21% from the previous year. In the garment industry, the overall supply chain consists of the process of raw material purchase to the finished goods reaching the consumers. In the ever growing competitive market, it is very important to have a complete management system which can reduce the production and operating cost and increase profit along with meeting the low market price. The apparel industry has been catheterized as variable, fast changing, short cycled, easily influenced by coincidental factors etc.

There are many operations factors that play a vital role in the industry, such as, the procurement system of the raw materials, transportation process, storage facilities of the semi-finished and finished goods, distribution facilities, sales activities etc. Operations management governs the supply chain functions, which deals with the planning, implementing and controlling of the efficiency and effectiveness of the onward and backward flow and inventory of products. It also considers the information related to the flow and storage between the production starting point and the consumption point in order to effectively serve the requirements of the customers. By upgrading the overall manufacturing process, the garments industry can reduce their cost and increase efficiency. In this economy, the supply chain and operations processes are considered essential due to change in demand of customers, orders, communication, machines and transportation system (2). In a paper, (3) explained that, In textile manufacturing, the operations of the business includes the activities of all purchasing, production and selling process and discusses the flow of physical products through the supply chain. The production facilities have to deal with sourcing the products, warehouse concerns, transportation issues, distribution system, marketing and all other activities relating to operations in the flow, which begins with procumbent of raw material to reaching the end customers. To further improve the operations of these enterprises, it is necessary to consider the large amount of complex data and information that is produced from the entire process of the operations of garment industry. After finding the complex and vast data, it needs to be transformed into information and from this the useful knowledge can be extracted. Data mining is the technology that can be used to effectively mine information hidden in the operations of the garment industry and can help construct new strategies to improve the garment sector of Bangladesh.

II. AIM AND OBJECTIVE

This research aims to find significant areas in the garment industry of Bangladesh to apply data mining technologies in order to enhance the production
processes and increase efficiency. The objective of this paper is to use previous research on data mining applications for identifying possible uses of it in the context of Bangladesh’s garments industry.

III. METHODOLOGY
In order to achieve the aim of the paper, we have collected and analyzed articles related to data mining from many different top journals of the world. We have focused on the data mining concepts and most advanced research issues of data mining. We have conducted the research based on literature review approach and studied different issues relating data mining to the operations management of the garment industry to provide a better understanding in this field.

IV. DATA MINING
Data mining is the process of turning unorganized data into useful information. It is done by the use of software which can find patterns from huge amount of data and businesses can take that information into account to develop strategies to make operations more efficient, increase sales and minimize cost. During the daily operations, the large batches of data that is collected after generation, contains a lot of attributes. Data mining can provide the previously unknown information which is valid and usable for the industry and can play a role in improving and optimizing the decisions of the business. Many industries such as banking, communication, insurance, retail, finance etc. has been known to use data mining and even in the manufacturing industry mining is used to improve business performance. Data mining technology can turn large scale data into usable information and support the smooth functioning of the entire operations of the business. It is used in many sectors including, pharmaceutical industry, energy production, biotechnology and chemical process industry etc. (4).

V. OPERATIONS MANAGEMENT
It is very important that the garment industry not only focuses on their production and sales but they also must make sure that the operation of the business is efficient. Neglecting the need for effective management in this field can lead to drawbacks in productivity of the business. The ever increasing competition in the garment industry has now forced the businesses to think about minimizing operations costs of the enterprise and the tasks that can help minimize the cost can be detected by effective management. In this economy, the supply chain and operations processes have been identified as an essential activity due to change in demand of customers, orders, communication, machines and transportation system (2).

According to (5), Operations management is the management function of the direct materials and resources which are needed to produce and add value to the original product through a firm’s goods or services. According to (6), an operation is the entity which deals with material’s physical movement from the producer to the customers. This contains a chain of time and space estimates which creates an economic activity and it includes transportation, inventory, distribution processing, handling material, packaging and information processing activities. Operations management is a complex process and consists of various aspects and to analyze the data properly, data mining is an appropriate solution (7). By implementing data mining in the garment sector not only the service level can be accelerated but also will increase the profit in the businesses (8).

In the complex garment business process, every part of the operations contains a large amount of data. A platform for operations information regarding apparel needs to be built to establish a highly efficient garment operations management. This will help make better decisions regarding business processes by sharing information and connecting all the activities in the supply chain (9). Quality and time management need to be prioritized to earn a stable advantage in the market and in order to do this, the information and analysis obtained from data mining should be used appropriately for design of cloths, orders, logistics and sales through the whole process in the garment sector.

VI. POSSIBLE APPLICATIONS OF DATA MINING IN OPERATIONS MANAGEMENT
The garment sector of Bangladesh faced with many challenges in the competitive global market regarding labor issues, raw materials and different trade barriers. Thus, the garment sector is forced to compete with other countries to receive the maximum orders in the market and in order to win in this sector; the industry must have the best operations strategy. The different ways of integrating data mining to operations management was explained by (10) which stated two different approaches where one was to provide inputs to optimize the procedure and another was to analyze outputs for optimization. To optimize the operation process of garment industry, data mining is an effective way to establish a process that can respond to the market changes rapidly and earn the industry the competitive edge in the international market (11).

A. Management of purchase
Customer satisfaction is now the most important factor for achieving success in business. In this competitive market, it is necessary to reduce defects in batch production, build long term relationships with both suppliers and buyers and develop a scientific plan for procurement and production. Data regarding the purchase orders, list of suppliers,
contracts with the suppliers, invoices and ledger entries are the type of procurement data which the organization needs to maintain and manage (12). Although purchase is an important function, most firms do not implement proper processes to monitor and audit the information and this can lead to leakage of spending. However, many organizations have noticed the need to manage such information and have known to use mining tools to keep track of transactions (13). In a research (14), it was analyzed that how data mining techniques like, clustering and text mining can play a role in improving patterns of purchase and give the decision makers the correct information they need to develop an efficient strategy for saving cost and efforts. Data mining is applied in fields such as, market search, management of emails, e-procurement, gathering business intelligence, automated helpdesk, claim analysis etc. and has been proven to be successful (15). Moreover, in another paper, (16) discusses how essential data can be extracted through the use of clustering from the raw data sources. Procurement in garment sector depends on many different factors such as timing, materials, quality etc. and the production is done in bulk amount. Thus, if any company wants to maximize in this sector, it needs to ensure the best as the market competition is fierce and this is why the internal and external factors need to be analyzed properly to understand and create strategy for the company. Multidimensional method of gray evaluation can be used to evaluate and select suppliers and this can help eliminate the subjective factor’s impact on the result of assessment to a certain degree (17). This paper also suggested that the method can identify the quality, price, level of service and delivery information to improve operations in manufacturing. In another research (18) explained two problems regarding purchasing and they are, raw materials consumption prediction and developing the plan for optimal procurement. The paper suggested, data excavating methods for purchasing optimization after optimization algorithm investigation.

B. Management of distribution center

The distribution center in the garment industry plays a big role in the entire process of sales and it needs to receive response rapidly as it mainly deals with the management of every single product with different operations of distribution processes. It is important to construct a rational and scientific design for the distribution centers as the operations need to consider many factors like, quantity of the product being distributed, the place where the goods need to be sent, sources of receiving the finished products etc. In one research (19), the problems regarding evaluation of economy regarding operations within the distribution network was analyzed. This evaluation founded a data map in which graphs explained different algorithms on the basis of different mining conditions. This was done to find relationships between different levels of the distribution network and indexes. According to (20) transportation of goods need to have improved service while driving cost down and due to this the value chain needs to respond to multichannel distribution patterns. This paper also suggested that algorithms found through analysis of data mining can improve focus on special areas of need and improve the system. A technique of data mining known as predictive analytics have been known to make small but incremental development throughout the organization and the benefits can be seen in almost every department including the distribution system of the organization (21). To decide on the best location to locate the distribution centers (22) discussed the use of data mining through the classification tree methods to find the center locations and the transportation process between each individual spots every year. This process will help guarantee the essential amount of sales needs while the total cost of long term distribution process is kept at a minimum. Moreover, one literature study (23) stated methods that can help locates distribution center in both home country and abroad. The paper look into use of various methods such as, comparing many mathematical programming, different categories of decision making, method of simulation and heuristic algorithm for deciding the location of the centers by quantitative analysis. Another research (24) found 3 (three) criterion to be used for location the distribution centers and they are, ‘analytical methods, planning methods and heuristics methods’. This paper also explained how the 3 (three) methods have the scope to be used and also analyzed the advantages and disadvantages of each method.

C. Management of inventory

In any manufacturing industry, the cost of inventory can put an affect in the business decisions. Thus, in supply chain of garment industry, it is required to have a high level management system of inventory. As management of inventory is a critical part of the supply chain, understanding the trend and developing the context for processing data can be beneficial for an organization (25). Through the application of advanced inventory management using data analysis studies have shown to improve the service level of an organization and reduce the cost of inventory. Calculation and data changes during the processing of records of inventory involve operations performance methods and electrical apparatus for inventory management (26). However, a research by (27) identified the challenges and problems associated with the use of data mining for inventory control and stated that the most problems are faced.
during the data preparation stages. This paper also suggested that the problems can be solved and this should not be stopping the application as the system is clearly going to improve with the use of data mining. Having large amount of goods stocked in inventory can result in high cost but having less can lead to scarcity of product when demand is high. Thus, a clear analysis and estimation is needed to understand how much inventory should be kept at a certain time. For example, an estimate based on China showed that even after closing all production of clothing industry, there will be still enough cloths left for selling the warehouse stored cloths to the domestic market for 2-3 years (28). To end the problems of the traditional inventory management methods, (29) found that ‘artificial neural network technology’ is a mining method that can be used to predict demand and improve forecast accuracy by ‘MATLAB simulation algorithm’. This research also suggested the use of ‘inventory control model’, ‘artificial neural network technology’ and ‘tentatively strategy’ to control inventory in garment industry. In the paper (30), a model for mining data was established for multi item management of inventory in the retail business. Another researcher (31) has found ‘BP algorithm’ to be more appropriate to be used as inventory management technique. Moreover, (32) proposed ‘OLAP and data mining technology’ and explained how it can be used to make decisions regarding inventory control system. Through techniques such as, time series clustering and prediction businesses can promote better development of inventory management (33).

D. Management of transportation

Transportation system in garment industry is also a very complex and essential link in operations. There are a lot of factors that need to be considered while developing the plan such as, logistics network, designing the optimal path, mode of transportation, scheduling etc. With the ever increasing competition in the garment sector, clothing enterprises have been asked to reduce operations distribution cost as much as possible. By the use of ‘data excavating method’, the garment transportation management can be optimized and this can reduce the overall cost and price in the market. The operations of an organization focuses on mainly three areas, location facilities, warehousing, and transportation system and delivery of products and this study seeks to find ways to optimize the system and find better solutions to improve the service (34). In order to determine the correct operations program for the organization, data needs to be analyzed properly before making any decision and data mining is the perfect solution for this (35). In a study, conducted by (36), a genetic algorithm was constructed to optimize the transportation issues like, the number of distribution centers, the process of transporting goods from production house to distribution center and the system for products reaching customers. By using many mining techniques such as, ‘actuarial method’, ‘heuristic algorithms’, ‘modern heuristic methods’ etc. operations scheduling of transportation can be done (37). An analytical model for the transportation system was developed by (38) for planning, controlling and managing the system. A more focused study to solve the vehicle route problems was done by (39) and it used ‘Operation Research (OR) approach’ and discovered techniques to apply data mining to solve the issues. To deal with the dynamic scheduling plan of vehicles, combining ‘genetic algorithm’ with other methods can provide the enterprises with the solution they need for optimizing the route for distribution (22).

E. Management of sales

The operations of the garment industry have to deal with the activity of moving goods to customers by corporate sales. It has to manage orders, inventory, transportation, distribution, and sales returns etc. in the process of transferring goods to the customers. The enterprise operations along with the sales target of each product category needs to be fixed and data mining can help establish the distribution operations. Data mining is known for its application in determining the sales volume in a company and this helps estimate and control the activities related to sales (40). A research done by (41) established a system to control and manage the sales, service, customer and other different types of information of the company on the basis of sales activity. Another paper by (42) proposes an algorithm for calculating the customers’ interest rate on the basis of their placed order history and purchases in the past on any given product to find a percentage rate of interest of the customers. In the garment industry, huge amount of data is generated which needs to be analyzed to reflect and act according to the market and sales needs. A research done on China’s clothing industry found that, a lot of clothing enterprises, in order to collect operations information of sales have appointed manpower and other resources (43). The paper also stated that, sales logistics requires the system of computer network that can support database administration along with ‘High-Tech information technology’ such as, the bar code, POS, EDI, RFID etc. The sales information system of clothing industry becomes a simple searching tool without the use of mining according to (44). He also explained the importance of establishing and applying the clothing information system for sales through the technology of data mining in order to construct the framework the measures and evaluated
the enterprise processes. In a paper (45) talked about data mining on individual services and provided an example of brand loyalty of clothing industry. Item management is another term in operations that needs attention from the companies and it stands for the effective control system of every item to get the maximum use of resources and increase the product sales volume. Techniques like ‘data mining clustering’ and other statistical tools can be used to analyze and aggregate the degree of current situation of the enterprises. ‘K-means clustering algorithms’ is used to mine data to analyze the market by quality, share, price, and other categories, which helps the companies find the best market for sales (46).

F. Management implications

Data mining is at present in a condition of development and it needs advance enhancements to achieve the improvements that businesses need. More products and services are being constructed as more organizations are joining the endeavors of data mining into their basic decision making ways. The greater part of the effective business choices are produced using dependable information source and their approval through the utilization of instruments and methods. The majority of the papers and writings on data mining centers around its advantages and weights in settling on business choices and decisions. As indicated by (47), the search for important data in vast volume of available data is the process of data mining. Data Mining has been referred as a factual procedure of examining information put away in a distribution center (48). Moreover, (49) characterizes the this strategies as apparatuses for looking databases with uncommon calculations to recognize general examples which can be utilized as a part of the characterization of the individual perceptions and making forecasts from there. As per (50), data mining is the procedure of auxiliary investigation of extensive databases working to find unsuspected connections which are of premium or incentive to the organization. Data mining, distinguishes patterns and connections in the gathered data. The greater part of the effective business choices are produced using solid information source and their approval through the use of devices and system (51). Statistical measurements can be utilized for breaking down this data and create significant information which can be useful to the decision makers of an organization.

VII. FINDINGS

Through this research, a link between the operation processes of the garment industry and data mining technology has been developed. The research has found that data mining can be an important tool for gaining competitive advantage in the garment sector as it can help make an organization more efficient. The paper has discussed five possible areas in which data mining can be applied in a garment manufacturing organization. Some specific findings of each area are described below:

- In the purchase of materials section, raw material needs assumption, monitoring supplier relationships, finding optimal procurement point can be optimized by the use of data mining
- The sales system can use item management concept to utilize the facilities
- For inventory management, techniques such as time series clustering can be used to predict the space needed
- By using mining techniques to schedule the vehicles the transportation system can be improved
- Selection of the distribution center for the most efficient results can also be done through data mining
- Data mining can give important information which can be used for making good decisions

VIII. CONCLUSIONS & SCOPE OF FUTURE WORKS

In order to maintain the position in the competitive market of garments, the technique of mining must be put to use for analysis of different data that is generated in the operations process. Business operations now requires more scientific approach towards decision making and with the development of different data mining methods, it is now easier to extract information and respond to the situations in garment industry more effectively. Thus, the garment industry of Bangladesh must focus more on analyzing and effectively using the information available through scientific research methods to keep up with the international market.

This research has found several points of limitations which can lead to the scope of future research. First of all, this research only focused on the literature review of other papers which has been published earlier and because of this real application in the Bangladesh garment industry was not analyzed here. In future research, the current situation of data mining application can be analyzed through industry survey. Moreover, the possible application of data mining should not be only limited to the sectors discussed in this paper and future research can address this issue. This study also had to generalize the application process in the operations management field as there were not many research previously done specifically focusing on garment manufacturing industry’s operations and no research was found linking this with data mining technology, thus, further research needs to be done in this field to develop theories and models for the application of this system.
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Application of Knowledge Management in Garments Manufacturing Industry in Bangladesh

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Abstract: Bangladesh holds a leading position in garments domain and it is essential that the garment industries of Bangladesh focus on ensuring quality and standard in production throughout their supply chain. Similar to any other manufacturing business, the garment sector has a growing volume of data which is now becoming a challenge for the businesses to extract information from those data. For this reason, the application of knowledge management (KM) in this industry can bring sustainability in the production sector. After analyzing the importance of use of knowledge management in garments manufacturing businesses, this paper is dedicated to explore the idea of how KM can be implemented and can transform the manufacturing practices of the garments sector in Bangladesh. By conducting literature review on research works around the word this paper has found seven prospective sectors in the supply chain of this industry in which KM can be implemented.

Keywords - knowledge management (KM), garment industry, supply chain management

I. INTRODUCTION

In global economy, knowledge plays a critical role as the work based on knowledge keeps on increasing with the businesses and a lot of scholars have identified it as a sustainable method of gaining competitive advantage. As the business world entered the knowledge era a few decades ago, it developed new terms which didn’t exist before. In the academic and business sectors, the concept of knowledge management is becoming more and more popular. Development of technology and globalized market has made knowledge management a suitable solution in the competitive context and currently businesses rely on innovating and improving their systems to survive in the long run (1). Manufactured goods represent an expression of competitiveness and innovation in this advanced developing economy. In context of Bangladesh, garment industry has rapidly grown in the last decades and is ranked one of the largest exporters of garment in the world. Even though the early success of this industry has come from the transfer of initial technology from South Korea, it is not the mere reason for the explanation of such growth over these past decades (2). The garment industry of Bangladesh accounts for the 75% of earnings from export of the country and 25% of the GDP while ensuring thousands of job opportunities for women.

The garment industry has some unique features which separate the structure of these businesses from others such as the faster turnover of inventory, shortened lead time of material and high customer order fulfillment requirements (3). This industry forces to lower cost due to competitive market and also makes the companies move with the trends (4). Thus, the operations require high level of responsiveness and efficiency. The growth of the industry has been studies by a lot of researchers over the decades and it was first widely known from the book of (5) and another previous paper of (6). The operations of global chain of commodity provides continuous learning opportunities and local industries such as the garment manufacturing companies of countries like Bangladesh and Philippines are responsible to find such knowledge and learn the advanced techniques and know-how (7). Another study has found that, the success and high profit margin of the garment industry has not only relied on influence of vast availability of human capital but it is also dependent on the ongoing learning and knowledge sharing of industries abroad from highly qualified entrepreneurs (8). To investigate the possibility of using KM in garment industry of Bangladesh, this study tries to explore and analyze the overall practical implementation with the reference of theoretical models of previous studies. By this analysis, the paper aims to combine theories with practice and derive the possible opportunities of using KM to improve the supply chain of the garment industry.

II. AIM AND OBJECTIVE

The aim of this research is to find and assess possible areas for applying of KM in the garment industry of Bangladesh. The objective of the study includes:

- Review previous research work on knowledge management to find fields in which KM is applied
- Analyzing the possibility to use KM in the garment manufacturing industry
- Finding solution to current lacking in the industry that can be controlled through knowledge based process
III. METHODOLOGY
To discover and obtain the evidence to the aim of the paper, we have analyzed more than hundred articles based on research of knowledge management from top journals around the world. For this research paper we have followed the literature review approach and analyzed previous study done on the supply chain of manufacturing industries to identify how KM can be used for improving processes in garment industry of Bangladesh.

IV. SUPPLY CHAIN MANAGEMENT
The flow of products, services, information, monetary value among the entities of the business including the customers, manufacturers, suppliers and the internal system of the company is defined as the supply chain (9). This concept holds all the operations including procurement of materials, sourcing, production scheduling, processing orders, manufacturing activities, management of inventories, warehousing and customer service. The main objective of supply chain management is to meet the customer demand efficiently by managing the right product, quantity, location, time and condition (10). The supply chains of modern businesses have become more complicated as the operations of the businesses have expanded. All the new business world developments triggers the necessity for new studies, theory building, case analysis, metric creation, surveys etc. and it also makes it essential to find better ways to improve the business processes to keep ahead in the market. As the production of textile and clothing in the Asian region expanded, it increased both competition and the need of integration among the global supply chain. To improve the responsiveness and competitiveness, new strategies are being formed of the supply chain of the increasing diversified product lines (11). The supply chain of textile and garment industry is complex and it consists of many different activities which are scattered all over the world. There are also requirements to develop the technology and skills to improve the operations and management of business by adopting new strategies.

V. KNOWLEDGE MANAGEMENT
The definition of KM in the beginning stages was “knowledge management is the process of capturing, distributing, and effectively using knowledge” (12). A more recent definition of KM describes it as, “performing of the activities involved in discovering, capturing, sharing, and applying knowledge so as to enhance, in a cost-effective fashion, the impact of knowledge on the unit’s goal achievement” (13). KM is basically the process which identify, captures, retrieves, evaluates and shapes the information asset of an organization and then this information are shared with the enterprise to allow effective decision making. In order to gain competitive advantage, effective use of knowledge management can play a vital role in an organization. A study has found that, a 5% increase of return on assets, sales, operating income to assets and sales can be seen in companies which have applied knowledge management within the organization (14). There are two aspects of KM, explicit and tacit knowledge. Explicit knowledge consists of the processes, instructions, secrets, documents, copyright, patent etc. while tacit knowledge is the specific knowledge of an enterprise which is gained from experience (15). Although tacit knowledge is considered to be more powerful than explicit knowledge, it does not flow freely, difficult to be transferred, cannot be easily understood and often ignored until it is no longer available (16). The benefits gained from effective knowledge management includes, acquisition of advanced knowledge, good storage and retrieval process, sharing and better decision making (14). The employees of an organization are responsible for how well the flow of knowledge will run within the firm. Unless there are any activities conducted such as, training, discussion, research, monitoring etc. to encourage the process of learning within the organization, the knowledge tends to be idle and is confined with the individual employees (15). Even though all knowledge is not distributed equally, the more a company focuses on action and performance of knowledge sharing, the more competitive advantage it can gain (17).

VI. POSSIBLE USE OF KM IN THE SUPPLY CHAIN OF THE GARMENT INDUSTRY
Analyzing the role of KM in product innovation was presented in the paper of (18) and this paper focused on two variables, the extent of the system of knowledge creation and the process of managing knowledge. By unifying the demand and supply focused methods in a study done by (19) it was seen that the KM of an organization can bring in more profit. The study also discussed a new substructure for combining the two methods by KM procedure. A research done by (20) on exchange of service and the effect it has on innovation analyzed how the transfer of knowledge plays an important role in the supply chain interchange. Moreover, this study focused on technological architecture of knowledge centered organization and the role workers play on the maintenance of the knowledge (21). In another study done by (22), a certain method of knowledge transfer was analyzed to see the explicit knowledge influence in the outsourced performance and this paper introduced the ‘strategic Level Agreements (SLA)’. A multiage system framework for sharing tacit knowledge in a manufacturing industry was analyzed by (23) which focused on unifying and distributing...
the knowledge within the supply chain of the business.

The paper of (24) studied the link between KM and success of an organization in total. The study was done on an organization’s environment of strategic operations and found out how the distribution of knowledge clarification flows though the circulation while analyzing the interaction of the KM procedure with the execution of business processes. Communities of practice (CoPs) were discussed in the paper of (25) and the study also showed how the collecting and sharing of knowledge can improve the structure of supply chain and performance of production. It is very difficult to understand the structure and meaning of the stored information, but it is necessary to model the data so that the information needed can be found easily and quickly while taking decisions (26). In the present era, knowledge is views to be a significant organizational resource and is the principle source of value creation and sustainable competitive advantage for many different types of organizations (27). By emphasizing on monitoring and controlling businesses by knowledge that is derived and shared from different data sources, the new age organizations has successfully differentiated themselves from the organizations of the last millennium (28). Thus, it is very important to understand how KM can be applied in the supply chain management and can be used to stimulate knowledge creation, sharing and application across the corporations to keep up with the new world. In a research done on Indian manufacturing industry showed that, KM can ensure competitive advantage but financial and cultural constraints is posing a barrier against its implementation (29).

The complications of knowledge distribution in the supply chain were researched by (30). The ‘knowledge Supply Networks (KSNs)’ was studies by (31) and they focused on capacity and design problem issues on the paper. The study also assessed risk and the scope and capacity of technical innovation through research and academic environment. A study done by (32) highlighted the complicated practices of supply chain management and the use of knowledge maturity model along with substructures for gathering knowledge revealed that the policies and strategies must be developed according to the organizational environment. The compatibility of the supply chain and KM was discussed by (33) and it analyzed the external links of the organization and showed how knowledge can be created and shared through this network.

A. Resource-based view

The capabilities and resources of a company characterized by the values, its ability to imitate, rarity and un-substitutable values which stands as the company’s competitive advantage, is explained in the resource-based view theory (34). Resources of a company consists of both tangible and intangible goods like, contracts of trade, employment practices, in house technology knowledge, efficient processes etc. which need to be managed properly (35). Thus, it is necessary to extend the traditional system of the company’s capability of resources to its KM functions. The capability of KM can be defined as the ability of the firm to mobilize and execute the resources based on KM in collaboration with the other capabilities and resources of the organization (36). Researchers have developed various KM related resources by observing the resource based view, which can bring competitive advantages to the company. In a paper, (37) described that structural, technological and cultural resources of a company are firm specific and so these can be labeled as organizational capability sources. Knowledge enablers such as, structure, technology, people and culture and the performance of the organization have a strong relationship along with the competent KM skills (38). Moreover, these enablers were also labeled as the primary source for the growth of the business and competitiveness improvement (39). Similar to this, in the garment manufacturing industry, KM can be used to identify and utilize the resource based view.

B. Buyer-supplier relationship management

Supplier segmentation has been identifies as an important segment in the supply chain of a business and different criteria have been presented to segment and classify the relationship between buyers and suppliers. ‘Svensson model’ was used by (40) to analyze this relationship which was studied based on an automotive industry. This study indicated that a business must move from an ‘operational relationship’ to a ‘strategic partnership’ in order to achieve the mission and goals of the business. In the field of supply chain management, KM is considered to be an essential managerial tool and a research done by (41) is focused on finding the KM capacity of an organization for improving the relationship between buyer and supplier. In another study of (42), KM was analyzed to see the possible use for it to improve the ordering process of a manufacturing company. The atmosphere of sharing knowledge in an organization can ensure cooperative relationship between the clients of the business which can lead to better client satisfaction and improve the competencies (43). The garment industry has to rely on a lot of suppliers for getting the raw material and with the help of KM the business can manage the relationships better and improve business efficiency by finding the key suppliers.
C. Customer relationship management (CRM)
To manage individualized relationships with the customers of a business with the aim to gain more profit, achieve customer satisfaction, identify profitable customer segment and give quality service, customer relationship management is necessary. CRM helps increase revenue, customer satisfaction, retention rate, loyalty along with the information employees require to build long term effective relationships with the customers to provide better service (44). KM can be used for the marketing segment of a business which means the organization using the database technology for assessing customer information, finding profitable segments, positioning the goods and connecting to the market by the use of integrated strategies along with measurement of the results (45). As satisfied customers are key factor for increasing organizational success and market share, a research done by (46) focused on finding how KM practices link to CRM for increasing loyalty among customers which stated that KM can convert the unorganized customer information to a medium for competitive advantage for the firm. The data can reveal information regarding buying behavior of customer, selection of brands and product preferences. Similarly in garment industry, these information can later be used to customize the goods according to the customer need which ultimately results in better customer relationship.

D. Strategic Cost Management
In current market, one way to be ahead of the competitors is to have reduced cost and maximum product value. The paper of (47) focused on reviewing how KM can be used to manage costs in different projects and leverage the benefits for the organization. The term strategic cost management stands for value management integrated process which improves the ration of price performance (48). By introducing new processes cost can be reduced and the ability to create strategies which fit the organizational need can be found by analyzing necessary information and this can also be the case in the garment manufacturing industry. Strategies need to be developed to identify the costs of an organization along with managing the cost drivers which need to be controlled, minimized or terminated. Strategic Cost Management can be applied to the assessment of quality, design, transportation, inventory and avoidable costs of the product life cycle (49). Different organizations follow different methods to reduce cost, for example, by cutting down on their resource allocation, labor expenses, reducing operational costs and so on. In a study it was seen that after applying the new mechanism, almost instantly there were changes seen and a huge cost reduction was in place which helped organizations to gain cost leadership and maximize product value (50).

E. New product development (NPD)
In the garment industry, NPD can be a key source for increasing competitiveness and innovation is now a necessity to sustain in the global market. In modern corporations the NPD processes are the most ‘knowledge intensive endeavors’ (51). To find when to market the new product, functionality, cost of manufacturing, customer needs and product features while developing the new product KM needs to be used (52). In the paper of (18), application of KM in product development was analyzed and it is said to be a continuous process and NPD is thought to be a key area for applying knowledge management in an organizational development. The process of knowledge transfer and Information and Communication Technology application was also linked to the NPD process while analyzing its relation with KM (53). A research done on the Taiwanese garment manufacturing industry by (54) found that ‘twofold NPD’ is the source of achieving the required competitive edge in the market. Knowledge management methods such as, meeting, workshops, interviews of experts etc. can ensure a better NPD process (55).

F. Decision support system
As the structure of organizations are becoming more complex, need for decentralized decision making is increasing and this has encouraged decision support systems (DSS) to help make effective decisions with the help of knowledge management. By combining DSS and KM a firm can also find new opportunities to enhance their quality of support in each sector (56). In the paper of (57) explained the decision making process by saying it has to be based on numerical value processing and because of this, knowledge must be extracted from data and KM can help make the appropriate decisions. KM can fill the gaps between the information the decision maker has and the information required to make the decision and give the person a better chance at making the right decision (58). In order to construct a better supply chain system, (59) suggested the use of DSS as a tool for the assistance of management while including KM for more beneficial results. The same can be done in the garment industry to improve the decision making in the supply chain.

G. Risk management
Knowledge has been introduces as a factor for reducing risk in an organization by (60). Most risks are the cause of human actions but knowledge can help control the risk associated with business strategy and processes. Knowledge transfer within the organization can help tackle unavoidable risks such as, legal actions, outsourcing data etc. which was
identified by (61). The transfer of knowledge depends on the organizational structure and the employees might need assistance in knowing how to transfer the practical experience knowledge but sharing this information throughout the organization can result in fewer mistakes (62). In order to manage risk, the garment industry must also rely on KM to identify the possible threats and solutions to the problems. In the paper of (31), the design issue was explained and on the basis of linguistic operations, an evaluation process of risk was proposed. Knowledge creation, storage, transfer and application are the main criteria for analyzing the risk of the organization and developing new methods to control the risk (63). This paper also stated that the quality of communication and willingness to share information among the members of an organization is the most prominent factor effecting the risk management of the business.

VII. FINDINGS

The findings of the paper suggest seven different sectors in the supply chain in which KM can be used to make the system more efficient.

- To identify the key resources of a company KM can be used.
- KM can also contribute to finding and analyzing the best suppliers for a company.
- By storing and utilizing customer data, such as preferences, a firm can ensure higher satisfaction.
- Through KM, expenses can be monitored and reduced to gain competitive advantage.
- In the new product development sector, KM can contribute by providing past data analysis.
- Better and faster decision process can be achieved when knowledge is available.
- Previous data analysis can show the pattern of problems and the company can tackle it better.

VIII. CONCLUSION

By assessing the link between KM and its use in different sectors of the manufacturing industry, this study contributes to the literature in context of garment industry using review based research methodology. Although knowledge management has been studied for decades, there is a few articles available based on exhaustive research and most of the KM practices are not well documented in theory. Thus, analyzing the application of KM has been made difficult and the progress of developing new solutions for firms to use has been on hold (64).

This study points out several limitations which can lead to possible future research. First, due to the complexity of the functions of the supply chain, a detailed operationalization assessment needs to be done on the concept to construct a measure for analyzing the knowledge use in different sectors of the organization. Second, each of the sectors relates to KM for their need of knowledge but the impact of this evaluation requires reinvestigation to validate the findings of this study. Third, the common limitations of the review based study has also been faced in this paper including lack of direct material linking knowledge management to garment industry and further study regarding this field can overcome this problem. Fourth, the study generalizes the concepts found in supply chain of manufacturing industry due to lack of information regarding how the garment industry is currently implementing KM in their operations. Lastly, other possible opportunities can be revealed with future studies based on qualitative research in this field. By exploring the in depth study new dimensions can be found or developed in sector which can lead to a better understanding on how to use knowledge management to its limit to improve the supply chain of the business.

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Measuring the Customer Satisfaction of Telecommunication Sector in Bangladesh: A Study on Customers of Grameenphone and Banglalink

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Abstract –

The development of telecommunication sector in Bangladesh is a symbol of digital Bangladesh. Telecommunications network has a good connection of economic growth and development of Bangladesh. But the customer satisfaction is the prime issue for creating a good number of loyal customers. Young (Y) generation is using mobile phone for different purposes of communication. The purpose of this paper is to measure the level of satisfaction of Grameenphone and Banglalink telecommunication sector in Bangladesh. The nature of the study is descriptive, based on the basis of both primary data and secondary data. The primary data were collected from the relative mobile phone companies’ users from Rangpur city. Total number of respondents was 200 (100 user of Grameenphone and 100 users of Banglalink). Here sampling method was used for data collection with a prescribe questionnaire from the November to December, 2016. The questionnaires consisted of 35 questions. After collection of all primary data, SPSS 20.0 version was used to analyze the data. It has found that the overall customer satisfaction towards the Grameenphone is 3.457, where Banglalink is 3.314 (mean value). Grameenphone users are more satisfied in case of 20 variables. On the other hand, Banglalink users shows the positive opinion about 15 variable of satisfaction. The most of the cases, customers show positive opinion towards the grameenphone than the Banglalink. However, concern parties may be benefited by the use of prescribe recommendations and outcomes of this study. The study suggests that Grameenphone operator should minimize the call rate and Banglalink operator should build the strong network service to retain existing customers and attracting new customers. The result of the study also generate new thoughts for researchers. The study also find improvement areas for telecommunication investors and sellers for serving better than the before and help to achieve remarkable progress.

Keywords- Customer satisfaction, Telecommunication, Grameenphone (GP), Banglalink.

i. INTRODUCTION

This is the age of ICT and digital Bangladesh. Our people are dreaming digital Bangladesh. Mobile phone the most useful device for communication. Socio-economic development dependents on some basic physical infrastructures and telecommunication are one of them. Mobile phone or Cell phone is the most lucrative weapon that helps to keep in aware about the changes of information (Huq et al., 2015). Cell phone is one of the easiest, efficient and useful media of communication. It always saves time, cost and energy. The role of telecommunication is very remarkable for fasten economic growth and improving standard of living. The mobile operators have created more than one million job and contributed over 13 percent to the national budget of Bangladesh. The present Government has identified ICT as one of the trust sectors for rapid economic development, unemployment and poverty alleviation. Tele communication has added a new dimension in our modern life. Today, nothing can be imagined without this communication device. In Bangladesh, six companies are running as mobile phone operators. These Companies are Grameenphone Ltd. (Gp), Orascom Telecom Bangladesh ltd. (Banglalink), Robi Axiata ltd. (Robi), Airtel Bangladesh ltd. (Airtel), Teletalk Bangladesh Telecom ltd. (Teletalk ) and Pacific Bangladesh Telecom ltd. (Citycell) among this first five operators are using GSM Technology and last one is using CDMA Technology. Right now these operators are selling not only voice call but also different types of mobile entertainment or content such as sms, mms, news...
updates, welcome tune, sports news, share market update, breaking news, health line, miscall alert service, cell bazar, job search etc. Today’s customers are very aware about this self-satisfaction. Customer satisfaction is the result of comparison between customer expectation and the product performance, if a customer gets more than his expectation level then customer are dissatisfied. On the other hand when a customer receives more than his expectation then he/she will be delighted. In the age of competition it is no longer enough to keep your customer satisfied try to make them delighted. The telecommunication brand manager and other policy maker have to measure continuously the actual level of customer satisfaction. The total number of Mobile Phone subscriptions has reached 129,584 million. Grameenphone Ltd. (GP) has reached 59,306 million and Banglalink Digital Communications Ltd has reached 31,309 million at the end of February, 2017.

Now Grameenphone is the market leader and Banglalink is the market challenger as per their market share. The competition among the six companies is increasing day by day because of them are try to increase their new customers and trying to retaining existing customer by providing Quality Service in an affordable price. This study actually conducted between Grameenphone and Banglalink.

ii. OBJECTIVES OF THE STUDY

The main objective of the study is to compare the overall performance between Grameenphone and Banglalink in the telecommunication sectors of Bangladesh. The other objectives are.

RO 1. To get an idea about the various factors that can affect the subscribers’ satisfaction or dissatisfaction.

RO 2. To find out the level of customer satisfaction towards the services provided by Grameenphone and Banglalink.

RO 3. To give some recommendations to increase the performance of Grameenphone and Banglalink.

iii. REVIEW OF THE RELEVANT LITERATURE

There are a lot of researcher have been conducted on measuring customer satisfaction mobile phone users. Kotler and Keller (2009) define satisfaction as “a person’s feeling of pleasure or disappointment resulting from comparing a product’s perceived performance (or outcome) in relation to his/her expectations”. Satisfied customers will repeat the purchase, be brand loyal, convey positive word-of-mouth advertising, and all these will enhance sales (Dispensa, 1997; Aaker, 1992; Fornell, 1992; Oliver et al., 1997). Customer satisfaction is explained by customer services, personal and market factor, perceived quality, perceived value, technological advantages and company image have positively related with customer satisfaction except for customer services (Uddin et al., 2014). Cell phone is one of the easiest, efficient and useful media of communication. Today’s telecommunication is an inseparable part of our everyday life. Besides, nowadays cell phone is becoming more popular and user-friendly device due to its convenient using and availability of low cost to communicate with all classes of people. Gender, occupation, education, and income level of consumer have a strongly significant influence on attitudes towards the usage of smartphone (Nekmahmud et al., 2016). In Khulna city, overall customer attitude towards Grameenphone is 166.1923 whereas Teletalk is 78.939. In most of the cases (17 out of 20) customer show positive attitude towards Grameenphone than that of Teletalk (Islam, 2011). Another study was conducted on Customers satisfaction towards the service of customer care centers of Grameenphone: a study on Dhaka and Khulna cities (Siddique et al., 2012) reveals that on the basis of nine factors among them customer are more satisfied on the availability of GP service center of GP. Akteruhammad et al. (2011) has conducted on performance of Grameenphone and Robi in telecommunication sector of Bangladesh. They concluded that among the fourteen variables customer of Grameenphone were more satisfied in case of strong network and customer of Robi were more satisfied in case of call rate. Ashaduzzaman et al. (2011) revealed that among the six companies GP users were more satisfied about (90%) followed by other operators. Theory of reasoned action is applicable in the Bangladesh setting to significantly explain intension to use mobile phones (Azam, 2008). Core service, product variation and promotion have significant influence on customer experience that significantly affected by core activities of telecommunication services like network, promotion and product variety (Islam and Rima, 2013). Six factors- communication, price structure, value-added service, convenience, sales-promotions and customer service and the result indicated that except for sales-promotion, all other five factors have positive correlations with customer loyalty in Bangladesh.
(Hossain & Suchy, 2013). Payments and savings (such as offers, rents and charges) are the most significant in determining satisfaction, retention, and likelihood of switching from one mobile provider to another. There are some factors like quality of air time, service of helpline, service of information centers, high billing rate etc. that are acting behind customers’ dissatisfaction and need to be improved for higher market share (Hossain et al., 2012). Service quality is the determinant of customer satisfaction (Cronin and Taylor, 1992) and by ensuring good service quality; telecom operators can enrich customer satisfaction (Kuo et al., 2009). Many factors have impact on customer satisfaction, but price fairness (mostly important), coverage (secondly important) and customer services (thirdly important) were three major factors which can highly affect the customer satisfaction (Khan, 2012). Brand image and perceived call rate, to have the most influence on the consumers’ selection decision of a mobile service provider in Bangladesh (Alom et al., 2010). The higher levels of call quality, value-added services, and customer support were associated with higher levels of customer satisfaction while higher level of the pricing structure, mobile device and convenience in procedures didn’t affect customer satisfaction (Kim et al., 2004). Customer satisfaction plays a significant mediating role in relationships from service quality, corporate image, and perceived value to loyalty (Alireza et al., 2011). Promotional value, quality of customer service at shops and corporate image play the most important role in determining customer satisfaction (Leelakulthanit & Hongcharn, 2011) investigated that. Brand image, service quality and price to be correlated to customer satisfaction. Among these, there was a negative correlation of customer satisfaction with the price but positive correlation with brand image and service quality (Malik et al., 2012). Payments and savings (such as offers, rents and charges) are the most significant in determining satisfaction, retention, and likelihood of switching from one mobile provider to another. Customer service, friendly employees and user-friendly websites were found to be the least significant (Almossawi, 2012).

A number of study had conducted related to the field but till no study was found on the basis of Rangpur district. By considering 35 variable researchers would like to measure the customer’s satisfaction between Grameenphone and Banglalink. So that policy maker and stakeholder can take more important decision about customer satisfaction and retention.

iv. METHODOLOGY OF THE STUDY

1) Nature of the Study: The study has been intended to know the generation Y consumer’s state of mind towards the mobile phone in Bangladesh. This study is descriptive in nature. It is directed in view of essential and optional information

2) Target population: The designated population for the study includes all generation Y customer’s ages of under 20-30 years who is regularly using a Mobile phone.

3) Sample size: The sample size was 200. Here 100 respondents from Grameenphone user and 100 Banglalink users, where male 58% and female 42% subscriber.

4) Sampling Method: In this study researchers exercised the convenient sampling technique. Because it involves the choice of subjects who are in the best position to provide the information required (Sekaran, 2000). Although it may restrict the generalization of the findings. It is the only viable sampling method to obtain information from a specific group(s) of people (Sekaran, 2000).

5) Survey Instrument: In this study a self-administered structured questionnaire was used to gather the data. Prior to administer the final version of the survey, a pretest had been conducted; based on which few minor changes were made in the wording of the questions. The questionnaire was only Part A included 35 statements using five point Likert Scale, Where, 1 = Highly dissatisfied, 2 = Dissatisfied, 3 = Neither satisfied nor dissatisfied (neutral), 4 = Satisfied and 5 = Highly satisfied about consumers, opinions with regards to the factors affecting the satisfaction of mobile phone.

6) Justification of using research variables:

There was 35 relevant research variables used to collect the appropriate data. So that researcher can avoid the errors. Here 35 variables help to make the findings more representative and easy to understand about the present scenery of GrameenPhone and Banglalink. Researchers considered all these variables (from the previous literature and company markets offerings) to get real idea about customer’s satisfactions.

7) Data collection and analysis: The study was conducted during the period from November to December 31, 2016. Primary data were collected from the respondents by conducting face-to-face survey. The
surveyors were the MBA students of the Department of Marketing, Begum Rokeya University, Rangpur. To conduct the analyses the authors ran the SPSS, a well-known statistical package for analyzing the data.

v. FINDINGS OF THE STUDY

A. Reliability Analysis

Reliability analysis is measured via Cronbach's coefficient alpha to check for internal consistency of the constructs. A commonly accepted following rules of thumb for describing internal consistency is: “\( \alpha \geq 0.9 \) - Excellent, \( 0.9 > \alpha \geq 0.8 \) - Good, \( 0.8 > \alpha \geq 0.7 \) - Acceptable, \( 0.7 > \alpha \geq 0.6 \) - Questionable, \( 0.6 > \alpha \geq 0.5 \) - Poor, \( 0.5 > \alpha \) - Unacceptable” (George, 2003). The Table illustrates that calculated value of the Cronbach Alpha of the factors is 0.080 that means data is good, reliable because the pragmatic value is relatively higher than the standard reliable value of Cronbach Alpha. Thus, the survey instrument is reliable to measure all constructs consistently and free from random error.

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<th>Table 1. Reliability Statistics</th>
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<td>Cronbach's Alpha</td>
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Table 2. Measuring customers satisfaction towards the existing attributes of Grameenphone and Banglalink

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<th>N (%)</th>
<th>S (%)</th>
<th>HS (%)</th>
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<td></td>
</tr>
<tr>
<td>33</td>
<td>Health Insurance coverage</td>
<td>Grameenphone</td>
<td>5.0</td>
<td>60.0</td>
<td>35.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Banglalink</td>
<td>15.0</td>
<td>55.0</td>
<td>25.0</td>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Prepared subscriber</td>
<td>Grameenphone</td>
<td>5.0</td>
<td>60.0</td>
<td>35.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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From the above table-2, it is observed that the overall customer satisfaction towards the Grameenphone is 3.457, where Banglalink is 3.314 which indicates that Grameenphone customers are more satisfied in terms of various factors than the Banglalink users. It is also noted that Grameenphone customers are more satisfied in terms of network, availability of SIM card, low price of SIM card, SIM replacement facilities, E-payment system, Customer care service, availability of Flexiload, internet facilities, emergency balance facilities, International SMS and call rate, Miss called alert and call block facilities, MMS, E-service, polite behavior of staffs, E-shop, Health insurance coverage, call drop, prepaid service and help line. Whereas customers is hold satisfaction towards Banglalink in terms of call rate, FnF number facility, value added service facilities, free talk time and bonus, special offer to customers, free SMS, free data for internet, free faceooking facilities, Speed of internet, Mobile entertainments facilities, content facilities, Tips facilities and postpaid service, Instant recharge.

As per the industry data, Grameenphone occupied first position from 1997. On the other hand Banglalink occupied second largest position in case telecommunication Business in Bangladesh from 2007. Previous literature review also indicates in case of customer satisfactions Grameenphone is clearly ahead than the others telecommunication operators.

vi. DISCUSSION

1. Grameenphone spent a large amount of money in the establishment year for the tower purpose and is doing better for the network coverage than that of Banglalink. Most of the customers of GP have given their opinion in favor of effectiveness of Network.
2. Grameenphone is in a strong position than Banglalink regarding availability of SIM card.
3. It is found that the opinion of the customers of Banglalink is less scattered than Grameenphone i.e Banglalink offer low price SIM card.
4. The customers of Banglalink perceived low call rate than that of Grameenphone.
5. Grameenphone is in a better position in providing solution of the problems related to SIM replacement than Banglalink.
6. Grameenphone has good number of customer service center that the Banglalink. The customers of both the operators are satisfied in case of location of the service center.
7. Flexi load facility of Grameenphone is more available than that of easy load facility of Banglalink surrounding the country.
8. It is found that most of the customers’ of Grameenphone and Banglalink are showing their neutrality regarding Internet and GPRS connection. But in comparison between these two operators Grameenphone is in better position.
9. The performance of both Grameenphone and Banglalink are satisfactory regarding friends and family number facilities to the customers.
10. It is found that the customers’ opinion of Banglalink is less deviated than Grameenphone in case of value added services. That is Banglalink provides more value added services than GP.
11. The customers of Banglalink are enjoying more free talk time & bonus facilities than Grameenphone customers.
12. It is observed that Banglalink is in a better position than Grameenphone in providing special offers to the customers.
13. The availability of emergency balance facilities have both operators. Grameenphone provide available emergency balance facilities than Banglalink.
14. Customers are dissatisfied about free SMS. Banglalink provides more free SMS than Grameenphone.
15. Both customers are dissatisfied with free GB for internet. The operators are not provides the free internet. Sometimes they provided free internet but speed of internet is not up to mark.
16. Customers are dissatisfied regarding the free Facebook internet facilities.
17. The study found that international SMS and call are available but call rate is higher for both operators.
18. It is found that both operator’s customers are satisfied with missed call alert.
19. The customers of Grameenphone and Banglalink are satisfied regarding call block facilities.
20. The most of the customers of Grameenphone and Banglalink are neutral position regarding with MMS.
21. They result of the study shows that customers of Grameenphone and Banglalink are dissatisfied with the economy ISD. But in comparison GP is better than Banglalink.
22. The customers of Grameenphone and Banglalink are not satisfied with internet speed. Although operators are told, they provide 3G speed but they are actually provide 2G speed.
23. Grameenphone and Banglalink provide better electronic payment system and customer are satisfied with electronic payment system.
24. The result of the study reveals that both customers of Grameenphone and Banglalink are satisfied regarding with instant recharging. Both operators provide available instant recharge.
25. Both operators provide mobile entertainments facilities like wallpaper, ringtone, games, SMS, MMS) but customer are not satisfied regarding facilities.
26. The result shows that the cost of receiving media content facilities are high. So customers are dissatisfied of this facilities. Banglalink provides better service than Grameenphone.
27. Customers are highly dissatisfied with the various tips and its cost of both operators. Banglalink has better position than Grameenphone.
28. It is found that customers of Grameenphone and Banglalink are satisfied with E-service. Grameenphone provide better E-service than Banglalink.
29. It is found that most of the customers’ of Grameenphone and Banglalink are satisfied regarding staff behavior. But in comparison between these two operators, Grameenphone is a better position.
30. The most of the customers’ of Grameenphone and Banglalink are satisfied regarding E-shop facilities. But in comparison between these two operators Grameenphone is a better position.
31. The study shows that most of the customer of Grameenphone are satisfied regards with call drop. Other hand, customers of Banglalink are not satisfied.
32. The comparison of two operators, Grameenphone has better position than Banglaling in case of help line service.
33. GP provide health insurance. Customer of Grameenphone are satisfied other hand customer of Banglalink are dissatisfied. Because this service is not available in Banglalink operator.
34. Grameenphone prepaid subscriber are more satisfied than the Banglalink prepaid subscriber.
35. Grameenphone and Banglalink postpaid subscriber are same satisfied.

vii. RECOMMENDATIONS

A) Recommendations for Grameenphone: The authors have suggested some recommendations for improving the performance of Grameenphone are as follows-
1. The high level management of Grameenphone should immediately reduce its high call charge. At the same time, the reduced call charge should be applied for all operators, not only for GP to GP, but also from GP to other operators. The validity and quantity of data of Grameenphone should be high than the present.
2. It should provide more friends and family number facilities with GP to GP and other operators.
3. The Company should focus more to the prepaid subscribers than the post-paid subscribers.
4. SIM replacement (in case of lost or damaged SIM) charge should be zero Taka.
5. Most of the value added services (VAS) are not friendly for general handset users. Grameenphone should take some steps so that general handset users get an opportunity to have that VAS.
6. Internet speed of Grameenphone should be high because most of the cases academic and researchers need to communicate with others through easy internet.
7. Grameenphone should establish 4G facilities to survive in the completion with the others.
8. For ensuring continuous power supply during the time of loadsheeding in rural area, Grameenphone should establish solar energy to their each network tower.
9. Thank you partner service is very popular items to the customers. So it should be continued.
10. Flexi plan facilities of Grameenphone is very acceptable content, it should be continued.
11. Sufficient and effective customer care center of Grameenphone in Bangladesh should provide more services to the customers than the existing.

B) Recommendations for Banglalink: The following are the provided recommendations by the authors to improve the performance of Banglalink-

1. Existing customers have been switching to other operators as a result of their poor network infrastructure. So, Banglalink should have quick expansion in effective network development all over Bangladesh if it wants to keep its customers to stay with them.

2. Time duration of I-top up facilities and scratch card should lengthen. I-top up facility should be made easily available.

3. Charge should be reduced or zero taka than the existing charge to take a new SIM if it is either damaged or lost.

4. The privilege services of the customer retention scheme of Banglalink should be launched as soon as possible as ‘djucie’ of Grameenphone has already started to saturate a certain segment of the market through its ‘X-tra Khatir Card’.

5. The Value Added Services (VAS) department should be coming up with more ideas to entertain its customers. This department has its potential but should be using it to the full range to provide more useful services to customers’ needs.

6. Customer Care has turned out to be one of the most focused points in the telecom industry. Survey results show subscribers expect a lot of it and would appreciate special care facilities.

7. Now Banglalink customers are facing a lot of call drop problems which should be solved permanently and immediately.

8. Banglalink operator should introduce health insurance facilities for their loyal customers.

9. Banglalink should establish more customer care center so that they can provide good customer service than the others operators.

10. Banglalink should be more careful about E-service and E-shopping to survive in the competition.

11. They should introduce high technology and recruit efficient personnel. So that they can provide superior value added service to their target customers.

viii. CONCLUSIONS

The research has provided insights like what are positive and negative aspects of both of the operators. For instance, the total number of customers of Grameenphone are very high than Banglalink. Grameenphone Company spent a large amount of money in the establishment year for the tower purpose and is doing better for the network facilities. On the other hand, Banglalink is doing better in case of call rate, low price SIM card, friends and family number facilities, bonus system etc. Banglalink needs to improve its poor network coverage, problem related to SIM replacement, insufficiency of the scratch card and easy load facilities, lack of convenient location of the service center and discount facilities etc. On the other hand Grameenphone is in a better position in comparison to Banglalink. It is doing better in case of following services like network coverage, effectiveness of network, solution of the problem related to SIM replacement, reconnection and migration, availability of the scratch card and flexi load facilities, location of the service center etc. But it cannot be said that its services is much attractive to the customers. It has some other problems like lack of limited friends and family (FnF) number facilities and lack of bonus system (Free talk time, SMS), high call rate, lack of special offers to the customers, lack of pulse facilities etc. If Grameenphone takes initiative to remove or reduce these drawbacks, then it will be more successful in the telecommunications industry of Bangladesh.

REFERENCES


The Factors Affecting the Spectators of Zoo: A Study on Consumer Satisfaction Level of Dhaka Mirpur Zoo

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¹BRAC Business School. BRAC University, Dhaka, Bangladesh
Paper# ICBM-17-398

Abstract: Zoo is one of the most prominent recreational source in our country provided by the Government. The benefits of zoo are recreation, conservation and basic knowledge about animals which people may not get otherwise. Inspire of having all these benefits, Mirpur zoo is losing its visitors day by day. The reason is that Mirpur Zoo is not up to the mark regardless of any class of people. For these reasons, people are not comfortable to visit the Mirpur Zoo. So, this research intends to do an analysis on visitor’s perception on Zoo now-a-days. This research shows visitor’s perception on zoo in comparison to other recreational centers of Bangladesh, their problems and the reasons why they are not willing to go there.

This is a descriptive study which identifies differences among study variables about the services provided by zoo and visitor perception or attitude towards those services. Here, we did the research work on 120 potential/previous customers using 20 survey questions. The research result showed that proper management of zoo, healthy environment and some other facilities are really very important to increase the number of the visitors. Literature review and survey data suggest some facilities which will influence the perception of the people in terms of visiting zoo. The recommendation part of the study focused on what are the mains issues regarding less number of visitors on zoo and what to do to solve this problem.

Keywords: environment, management, satisfaction, spectators

I. Introduction

Zoo is a Zoological Garden or Zoological park of public or private Park where living animals are kept for exhibition, research, recreation and study. Dhaka zoo is the largest zoo in Bangladesh situated at Mirpur, Dhaka. On 26 December 1950, the agricultural, cooperation and aid ministry officially declared to establish a zoo in Dhaka. Hence the zoo started that time near Dhaka high court with several spotted deer, monkey and elephant. The zoo later shifted to present Eid-gahmaidan with more animals. Later in 1961 a board was created to ensure proper management of the zoo. After acquiring animals from internal and from foreign countries, the zoo inaugurated at its present location in 23 June 1974. It was ceremonially opened for public on that day. The name of Zoo has been changed 5th February 2015 from Dhaka Zoo to Bangladesh National Zoo.

Dhaka Zoo has always been one of the major places for recreation. People from all over the country visit Mirpur zoo no matter what the condition of the zoo is. Zoo has always been a childhood memory to many people. During the 1971, there were only a few places to visit like Shishu Park, some picnic spots botanical garden and the zoo. Thus, Bangladesh national zoo is a very significant place for the city.

The Area of this zoo is about 75 hectares. It has two lakes of about 13 hectares, which receive thousands of waterfowls every year in winter. The total number of vertebrate fauna in the zoo is about 2,150 of 191 species. Included in these animals are about 551 mammals of 64 species, 1,543 birds of 90 species, 73 reptiles of 15 species, and about 104 aquarium fishes of 23 species. To attract visitors besides many fascinating animals, there are 15 tigers, 21 lions, 9hippopotamus, about 200 monkeys, and 33 pythons. A visit to Dhaka Zoo is not only entertaining, but educational too, as visitors get to know more about animals found in Bangladesh as well as animals from other parts of the world.

Background of the project:

People are becoming busy now a days. However, from our survey we noticed there is not sufficient public spaces for recreation in Dhaka. As a result the city dwellers have no place to interact, spend time with family. They are mostly busy in their lives and often do not get chance to go somewhere peaceful. A place where the people can get close to nature, observe variety of animals, can study on them and enjoy being there for some time. So Bangladesh national zoo can be a good place for recreational purpose because it has huge space, trees and some playgrounds for children. But sadly the poor condition and unpleasant environment in the zoo leads to an unsuccessful zoo visit since the animals barely interact. Zoo has a land area of 186.6 acres of which mostly is unused. The open grounds look untidy. Cages look as if they aren't cleaned and washed for years. The pathways are not well defined, and pavement in many areas is missing. It's sad, such a zoo site with beautiful surroundings and topography are not attracting people due to poor collection of animals and negligence of the management. Grubby cages, inexperienced keepers and poor equipment
have been dishonoring the reputation of Dhaka's zoo for long. So we choose Bangladesh national zoo at Mirpur for our research problem to identify factors that motivate visitors to visit Dhaka zoo, to analyze the attributes that motivate visitors for visiting that particular zoo, and finally to suggest what has to be undertaken to motivate the visitors to come to the Zoo individually or with family.

II. Statement of Research Problem

Background
Zoo is not only one of the most popular places for entertainment but also it is one of the most favorite places of kids. For many reasons, popularity of zoo is getting lower day by day and now people do not prefer going there. The main reasons behind this are the environment of zoo and its nearby places and also the mismanagement of the zoo authorities. It is also seen that people from upper middle class to upper class do not usually prefer going to the zoo. Our research mainly focuses on this part and also on how to improve the environment of zoo and the nearby areas.

Purpose of the Study
The purpose of this study is to know why people are avoiding zoo and what are the main reasons behind this are. Zoo is one of the major medium of entertainment, but the current scenario of zoo is not very satisfactory. The mismanagement of zoo authority and also indecent behavior of some people are restricting others from visiting zoo. Hence, people often hesitate to go there for refreshments. That’s why it is important to know the actual reasons behind the unwillingness of mass people in visiting zoo so that these issues can get solved.

Research Questions:
Necessary information has been gathered through in-depth interview. A survey has been conducted to get all the required information from the customers about their view, ideas, demands and needs. We selected some research questions on Mirpur zoo which are given below:

1. To identify the factors that influence the spectators of Mirpur zoo
2. To determine the factors that need improvement to increase the spectators of Mirpur zoo

Here the spectator’s satisfaction level is the only dependent variable and number of animal, ticket price, Management of zoo and environment of zoo are the Independent variable.

III. Literature review and Component analysis:

The word Satisfaction refers to the meaning which is “Fulfillment of one’s expectations or needs” (Oxford Dictionary). In brief, satisfaction defined as a person’s feelings of pleasure or disappointment that result from comparing a product’s perceived performance or outcome to the expectation [5]. There are different magnitudes of satisfaction, generally differ in service, product context and by industry. In addition, in service organizations, satisfaction is considered as a powerful measure [6].

In service business, customer satisfaction is a significant factor to estimate the product or services supplied to customer [7]. Briefly, Customer satisfaction usually means customer reaction to the state of fulfillment, and customer judgment of the fulfill state [5]. Besides, Service quality is considered as one of the top priorities of firms at the present time because it gives the company a competitive advantage, helps to build sustainable growth and increases efficiency which helps to increase customer satisfaction too [7]. Again, study shows that an increment in satisfaction is linked to an increment in repetition of usage and the willingness to recommend it to other customers [4]. Higher level of satisfaction will lead to high retention of customer; therefore, operators should be satisfying the customers in order to retain those [8].

Zoos have been proved to be consistently capable of attracting large number of visitors. Mirpur zoo was established in 1974 and many visitors were interested to take the experience to visit here. It was a great opportunity for parents to visit here with their children for entertaining them. Researcher has suggested a model of tourist–wildlife interactions associated with ecotourism, and he located zoos within the model as a means by which visitors could observe and learn about animals [1]. Zoo need to change their functions to reflect not only changing conservation roles, but also to better reflect public perceptions of what those roles are. However, managers of zoos, they might wish to concentrate on issues of animal well-being, have to manage sites that are entertaining and tourism attractions [3]. Researchers found that this zoo motivated to its visitors base on the importance of family togetherness, enjoyment, education and relaxation [2]. Satisfaction is very important variable for zoo business as it is a service provider. If people didn’t get any satisfaction, they won’t visit zoo and this is the current scenario of Mirpur Zoo.

Number of animals:
People expect to see animals in the zoo living in their enclosures designed to be as close to their natural habitat as possible. It is also supposed to be entertaining and educating. But when they go to the Bangladesh National Zoo in Mirpur, they really become disappointed. In almost every cage of the zoo, the captive animals look weak and sick. The way two thousand animals are
maintained there would give people just one impression that these animal’s lives are valueless. Since establishment in 1974, the concept of zoo management has changed globally. But these concepts have never reached this zoo or the zoo keepers. Wild life experts say, the types of cages being used in the zoo are suitable for domesticated animals. The wild animals are given treatment by veterinary doctors—whose knowledge is limited to domestic animals. More than 50 animals in the zoo are sick and have a very short time left. Zoo authorities have marked several Bengal Tigers, Indian lions, Asian Black Bears, the only dingo dog and some other species as dying animals. Though the salt water crocodile in the zoo is miraculously 85 years old, whereas their normal life span is 70 years at most. Birds in the aviary are in no better condition [3].

Ticket price:
The ticket price of zoo is comparatively low than other refreshment and entertainment zones of Dhaka. People often come here just because the ticket price is low. Though this doesn’t have that much impact on the upper and middle class people as they are willing to pay higher price if they find it worthwhile.

Management of zoo:
The Zoo authority has taken projects for upgrading the environment and the facilities of the zoo. The most important among them is upgrading the zoo so that it look more like Safari Park so that the animals may move openly and people would visit them according to zoo policy. Another plan is providing battery regulated client cars for old persons and children. The other plans include developing the children park of the zoo, to improve the zoo museum and to start zoo education. A new dolphin corner and a butterfly garden will be set up at Dhaka Zoo to attract more visitors. A master plan was accepted in 1960 for establishing central zoo. An advisory board was constituted for establishment According to that master plan present zoo is developed [1].

Environment of zoo:
“When I was a child, I used to be mad at my mom for not taking me to the zoo once every week. These days, I choose not to go to the zoo. Because, to put simply, it’s not safe anymore.”[2].

The reason people loved going to the zoo is simple: It provides with a calm and quiet environment like no other place. Well, the Botanical Garden that’s next to the Zoo does offer a calmer place, but they miss the charm of being surrounded by friends from other species. But in Mirpur zoo, environment is not up to the mark.

IV. Methodology:
Questionnaire formation:
As we have lack of publication which is focusing on the satisfaction level of customers of zoo, so we have to collect primary data and satisfy the objective of the study. The structure of the questionnaire was constructed through the in-depth interview, which was help in Dhaka. In our research paper we mostly used Likert scale which is a very popular means for measuring attitudes as the respondents can understand the questions very easily. Respondents indicate their own attitudes by checking how strongly they agree or disagree with particular statement. Response alternatives were: 1)Strongly agree 2)Agree 3)Neutral 4)Disagree 5)Strongly disagree

Sample and Data Collection:
We used Google form and also printed copy of questionnaire for conducting our survey to collect our primary/raw data and for secondary data we have gone through different journal papers, conference papers and online databases. Our sample size 120.

For this study we have used a popular Statistical Tool, SPSS (Statistical Package for Social Sciences) to sort the data that we have collected from the survey into tables and charts. With the help of SPSS, we did a descriptive study of the demographic information of the respondents and their satisfaction level and reason of dissatisfaction toward Zoo and explain it statically and graphically.

V. Presentation of Data and Critical discussion of Results

Descriptive analysis for demographic factors

<table>
<thead>
<tr>
<th>Do you think Zoo is a good place for family hangout?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Valid YES</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Missing System</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Would you like your children to visit zoo (if you have any)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Valid YES</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Do you prefer visiting zoo over other refreshment spots?

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid YES</td>
<td>73</td>
<td>24.3</td>
<td>60.8</td>
<td>60.8</td>
</tr>
<tr>
<td>Valid NO</td>
<td>47</td>
<td>15.7</td>
<td>39.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>40.0</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing System</td>
<td>180</td>
<td>60.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You visit zoo to:

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid To be entertained</td>
<td>26</td>
<td>8.7</td>
<td>21.7</td>
<td>21.7</td>
</tr>
<tr>
<td>Valid To spend time with family</td>
<td>25</td>
<td>8.3</td>
<td>20.8</td>
<td>42.5</td>
</tr>
<tr>
<td>Valid To see different kind of animals</td>
<td>30</td>
<td>10.0</td>
<td>25.0</td>
<td>67.5</td>
</tr>
<tr>
<td>Valid For children’s recreation and knowledge</td>
<td>27</td>
<td>9.0</td>
<td>22.5</td>
<td>90.0</td>
</tr>
<tr>
<td>Valid Others</td>
<td>12</td>
<td>4.0</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>40.0</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing System</td>
<td>180</td>
<td>60.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Following there is a data showing the peoples’ opinion regarding zoo:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am satisfied with the number and variety of animals in the zoo</td>
<td>8.3</td>
<td>20%</td>
<td>44.2%</td>
<td>17.5%</td>
<td>10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The ticket price is comparatively cheaper than other refreshment zones.</td>
<td>15%</td>
<td>18.3%</td>
<td>39.2%</td>
<td>20.8%</td>
<td>6.7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The service by the zoo stuffs and management team is satisfactory</td>
<td>12.5%</td>
<td>40%</td>
<td>40%</td>
<td>5.8%</td>
<td>1.7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The environment is clean and well maintained</td>
<td>30%</td>
<td>43.3%</td>
<td>23.3%</td>
<td>3.3%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Zoo is a comfortable place for every class of people</td>
<td>19.2%</td>
<td>54.2%</td>
<td>19.2%</td>
<td>5.8%</td>
<td>1.7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I am satisfied with the zoo environment</td>
<td>10.8%</td>
<td>47.5%</td>
<td>30.8%</td>
<td>8.3%</td>
<td>2.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Healthy foods are available inside the Zoo</td>
<td>5%</td>
<td>52.5%</td>
<td>35.8%</td>
<td>5.8%</td>
<td>0.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Animals are properly taken care by authority</td>
<td>19.2%</td>
<td>54.2%</td>
<td>19.2%</td>
<td>5.8%</td>
<td>1.7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Zoo is properly decorated for the children</td>
<td>6.7%</td>
<td>9.2%</td>
<td>55.0%</td>
<td>9.2%</td>
<td>0.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When do you visit to zoo last time?

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Last month</td>
<td>10</td>
<td>3.3</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>Valid Overall I am satisfied with the service</td>
<td>10.8%</td>
<td>44.2%</td>
<td>33.3%</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

| % | % | % | % |
| --- | --- | --- | --- | --- | --- | --- |
| Valid | NO | Total | Missing System | Total | 120 | 40.0 | 100.0 |
| Valid | 86 | 28.7 | 71.7 | 71.7 | | |
| NO | 34 | 11.3 | 28.7 | 100.0 | | |
| Total | 120 | 40.0 | 100.0 | | |
| Missing System | 180 | 60.0 | | | |
| Total | 300 | 100.0 | | | |
a. List wise deletion based on all variables in the procedure.

According the Cronbach’s Alpha, the data is acceptable.

### V. Summery, Conclusion, Recommendation

“The millennial generation has a wider range of choices than any generation before them”- as told by Steve Easterbrook, Global Chief Brand Officer for McDonalds in 2014. People will buy what they find attractive for them and attractiveness doesn’t always depend on the product only, it also depends on some supporting surrounding factors. When it comes to entertainment zones, people of all ages need some entertainment in their leisure time. From our survey on the zoo environment and the factors which are affecting the consumers of zoo, it was clear that the zoo environment is not offering much to its consumers. In spite of having all the potentials for being one of the best recreational places for almost all classes of people it is not serving the consumers as it should. This is really saddening that despite of having all the resources of being one of the greatest places for entertainment, zoo is not being considered as a place for enjoyment now for many people. It is just because of not having a sustainable environment plan, lacking in management system, care and attention towards the place and the animals in it. People are dissatisfied with many of the things regarding zoo which can be improved with a little willingness. Once the condition is improved, zoo can definitely be one the best place for recreation for almost all classes of people.

After doing this research, we have come up with some decisions what should be changed in order to attract more consumers or visitors to the zoo and also increase their satisfaction level. The main objective of our research is to determine what people think about Dhaka zoo and how much they are comfortable with the recent environment of our zoo and what is their expectation from this place.

From this survey we can say that, firstly, a sustainable environment plan should be implanted to maintain a minimum level of hygienic environment. The green marketing policies should be practiced to demolish the environmental issues. Secondly, improvement in management system can attract more visitors. Manager can focus more on rare animals and cleanliness of the environment. Consumers feel uncomfortable to go with their family to the Mirpur zoo because of these issues. If proper environment is maintained there, people will automatically come to visit Zoo. Additionally, people agreed that ticket price is comparatively cheaper so Government can increase the ticket price and they can invest it in the development of the zoo. People want additional features and decoration in zoo. If these things improve, then people will surely visit Zoo as there is lack of recreational park in Dhaka city. What comes in front of us after conducting this research is that People are actually willing to go to zoo but they are not going there for above mentioned reasons, so development in service and other stuffs will increase the number of spectators in the zoo.

### Further Research:

Our research on “Mirpur Zoo” gives us many insights about this topic. By following few research methods, we found out important data, findings and observations. There were some limitations while doing the research. Hence, further research is needed to get more valuable and important data that are relevant to this research. In future, if anybody wants to do research on this topic, for them this research paper will be helpful enough. Future researcher can focus on demographic factors that also affect the zoo’s customer behavior with the large number of sample. Further research can be based on the animal’s welfare issue so that animals of the zoo can live their natural life.

### V. Reference:


An Overview of the Shipbuilding Industry: A Literature Review

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Abstract - Shipbuilding is recognized as one of the firstborn, most open and extremely competitive markets in the world. Shipbuilding industry performs a significant role in supporting national defense, stimulating shipping and industrial development, rising employment and overseas currency inflow. Shipbuilding has been assumed as one of the most promising industry in the current time of global prospect and a country might achieve the strong economic development within a short period of time by continuing the upward trend of this industry. The basic objectives of this study are to overview the potentials, performances and identifying the problems related to this industry. Secondary data are used in this paper from the various reviews of literatures, journals, conference papers, newspapers, magazines and wide use of internet etc. This study will establish the national and international issues and factors in comparison to the potential which may significantly encourage the shipbuilding industry performance, as well as the problems will also be addressed to assess and measure the effect within the industry and finding the answers accordingly.

Key Words: Shipbuilding, Class ship, Potentiality, Productivity, Employment

1. INTRODUCTION

The geographical location presents Bangladesh the distinctiveness as a riverine country. In addition, it is a delta island which is adjoining to the Bay of Bangle. A sea area of 1, 66,000 sq. km is the pathway to compose Bangladesh as a maritime nation, abundance with living and nonliving resources. More than 200 rivers flow around the country with the overall length of around 22,155 km, which is capturing about 11% of the entire area of the country [1]. According to the observation of famous Moroccan traveler Ibn Batuta who visited Bengal In 14th century, numerous boats in the rivers carrying passengers, commodities and also the presence of the gigantic fleet of war boats. A primitive European traveler Caesar Frederick noticed that in the mid-15th century Chittagong became the focal point of shipbuilding of ocean going vessels [2].

Shipbuilding is recognized as one of the oldest, most open and extremely competitive markets in the world. The topographical location of Bangladesh in a swiftly growing globalized world prompts the ship building industries by exporting the ocean going ships as well as in the inland transportation segment.

The major portion of the exported and imported commodities is carried by the sea, which is more than 85%. In present condition more than 5000 coastal vessels in service to transport 90 % of total oil product, 70% of other cargos and 35% of passengers. Passenger vessels are the key component to connect people from the remote island to the mainland of the country. Furthermore 1, 00,000 skilled manpower and 1, 50,000 semi-skilled manpower are providing their effort in this labor demanding industries [3].

Due to upcoming population the commerce, business and economic activities will be increased as the expenditure increases. The world economy is directly interrelated with the seaborne trade. The globalize world necessitates a large amount of energy support and raw materials for their own business, trade and living. The uneven distributions of natural reserves and population make the role of shipping very fundamental. So the demand of shipbuilding will be amplified for sure.

2. METHODOLOGY

The existing study presents a cumulative overview and aptitude outline of the shipbuilding sector in Bangladesh. The study is going through with document analysis of shipbuilding. The character of data collected for the explanation of this research is qualitative data for a knowledgeable analysis. The descriptive survey research involves in the level of research design of this study. Qualitative research design is developed for the purpose of the study to allow researcher achieve data from existing literatures on this subject for analysis. The data attained in this study from secondary data. Secondary data were gained from the journals, conference papers, and wide use of the internet, newspapers and other related materials which were either published or unpublished. The obtained data were analyzed for motion of the study in qualitative method. Qualitative data analysis was used here to acquire absolute reasonable perceptive to arrive at the precise conclusion.

This research is performed as following diagrams:
3. RESULT AND DISCUSSION

3.1 Worldwide trend of shipbuilding industry

When wood was replaced by iron and steel, control of the global shipbuilding went from hand to hand: from Great Britain to Japan, then to S. Korea, and lastly to China. Britain took over the leading position in shipbuilding in the 1850’s and lost this leading because of failure to technically develop their shipyards. In the 1950’s position was progressively being taken over by Japan, primarily due to the rapid growth of the Japanese financial system after the Second World War and well coordinated State shipping and shipbuilding initiative. Japan dominated the world in shipbuilding for more than three decades. [4]

Japanese shipyards meet complexities in engaging efficient young engineers and experiencing high labor cost. Japanese shipbuilders were not flexible and did not adapt to changes with the competitive global market. Moreover, 60% of Japanese ship production based on the domestic market. That didn’t encourage technological development and realization of innovative production management techniques. It created the chance for South Korea to take the leadership in the middle of 1990’s. High cost of labor, inadequate quantities of domestic steel and increasing prices of imported raw materials and machineries diminished the opportunity to uphold the leadership of South Korea.

Sophisticated and specialized technologies, combination of shipyards with specialized industry for improving, qualified technical employees and researchers, Chinese labor cost open the door to become a leader of global shipbuilding market.

<table>
<thead>
<tr>
<th>Decades of the leadership</th>
<th>Country</th>
<th>Stage of business cycle</th>
<th>Cause(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1860’s - 1950’s</td>
<td>G. Britain</td>
<td>Lost leadership</td>
<td>Failure to modernize shipbuilding industry</td>
</tr>
<tr>
<td>mid1950’s - mid1990’s</td>
<td>Japan</td>
<td>Post-maturity, weakening of competitive power</td>
<td>Aging and high cost human resources. Reduced by shipyards R&amp;D budget to less than 1%. The gap between the demand and supply for steel, increased prices of steel.</td>
</tr>
<tr>
<td>From mid1990’s</td>
<td>S. Korea</td>
<td>Post-growth, maintenance of competitive power</td>
<td>High cost human resources. The gap between shipyard and domestic supply increased steel prices. The appreciation of Korean Won has worsened the competitiveness of Korean shipbuilding.</td>
</tr>
<tr>
<td>Since 2010, earlier than it was planned</td>
<td>China</td>
<td>Acceleration of growth</td>
<td>The lowest labour cost, Ambitious State programmes for the development, growing shipyards capacity, governmental subsidies.</td>
</tr>
</tbody>
</table>

It’s a labor intensive industry so the future leader of shipbuilding industry will lead the market in the course of low labor cost with technical improvement and well management techniques. Vietnam, India and Bangladesh will be the next Key players of the world’s shipbuilding.

3.2 Key Factors influencing the development of shipbuilding industry

3.2.1 Globalization

In the 1940s the world moved on from Colonial System to Globalization. This movement was accompanied by swiftly increasing trade and the need for effective means of transport and its systems. Shipping industry has discovered every chance and secured in the world trade. Over the 50 years, seaborne trade increased by 64 per cent faster than GDP. Globalization involved with remarkable quantity of energy and raw materials. Unequal allocation of natural resources, growing population and water covering more than 70% of surface, shipping provided a vital role in the development of combination global economy and involving the world into a single market place. Nowadays sea trade is 8 billion tons that is 17 times...
larger than in 1950. Since 2000 to 2008 seaborne trade increasing even at 5% per annum. In the long term point of view until 2050, due to the expansion in world population and the emergence of new economies, the movement of commodities should grow at 2.4% per annum. It is forecasted that seaborne trade will arrive at 23 billion tons in 2060 [5].

3.2.2 Population

The world population of July 2010 was approximately 6.83 billion [6] and is increasing up: the mid-range estimate is 9.08 billion people by 2050 [7]. That will release the door of enormous maritime trade for the additional load of the people over the world. Because of upcoming population the trade, business and economic activities will be increased as the expenditure increases. The urban population of the world continues to rise more rapidly than the total population of the world. At present approximately 3 billion people or just over 50% of the world’s population are living in urban settlements. Consequently, a rise in urban population is expected to reach 5 billion by 2030 [7]. This reality could also have a positive impact on seaborne trade because a large urban population not only generates a domestic market for goods and services but also forces the economic growth and innovation. Next probable positive consequence of the increasing urbanization is the progress of strong middle class that tends to have higher utilization of goods and services. As shipbuilding is directly connected to trade, with the grown population, this industry will flourish more positively.

3.2.3 Labor Cost

Shipbuilding as it is a labor intensive industry has exposed prospect for countries having low labor cost advantage. Also, China took this same advantage. Presently, world trade has been very much dependent on labor intensity. Among the production costs, labor cost is the key determinant of the competitiveness of shipyards.

3.2.4 Expansion of Global Trade

The principal indicators of real trade growth are up in the early months of 2017, signifying a increasing of trade at the beginning of this year. Container throughput of key ports has improved from its droop of 2015-16 to reach a record high level, with year-on-year growth of 5.2% in the first two months of 2017. A key indicator of world export orders has also ascended to its uppermost level in several years in February; indicate to faster trade growth in the coming month. Finally, estimates of world GDP growth at market exchange rates have raised from 2.3% in 2016 to 2.7% in 2017 and 2.8% in 2018[8]. This is a major indication that more orders are coming to shipyards to mitigate the demand of expanded global trade.
3.2.5 Obligations of New Regulations

As new regulation imposed by the IMO which made almost impossible the older ship for sailing and that would be replace by the new ship. All over the world the new ships’ would be delivered to the country having competitive rate advantage. Old energy inefficient ship will be replaced by the technologically developed energy management efficient ship. These open the prospect to develop new industries in the country.

3.3 Potentiality of Shipbuilding industry in Bangladesh

Bangladesh has vast prospect to generate a robust situation in global shipbuilding market and to offer hard competition with other shipbuilding nations. As ship construction is a high return investment, if a healthy market of shipbuilding could introduce, there is an enormous opportunity for economic expansion by man power engagement, export earning opportunity etc. As there is a huge demand for quality vessels of small and medium size in the global market, shipbuilding could be one of the major bases of earnings export oriented foreign currency. Bangladesh has already attained the position to exporting ships to Denmark, Mozambique, Germany, Netherlands, Finland, Holland, Sweden, and Pakistan and in other Middle East countries.

3.3.1 Wage costs and Lower effective cost

Wages have a major impact on the competitiveness of a shipyard: labor accounts for a large part of the costs of a ship [9]. The labor share powerfully depends on the wage levels in total production cost and the labor intensity of the production process. The fast growing young workforce Bangladesh has comparatively lower cost human input ensuring the best amalgamation of cost, quality and productivity. Productivity of Bangladesh in shipbuilding is almost similar to India. The cost and productivity in comparison of shipbuilding industry with its closest competitors India is 2.5 times and Korea is 4 times expensive than Bangladesh in relations of labor force [10].

3.3.2 Expertise

Bangladesh has a significant number of qualified graduates in naval architectures and marine engineers. More than 50% of them are working with their full effort in abroad. In percent 60 of them are working in the shipyard. There are a large number of experienced ex-mariner also involve in these industries. In Singapore more than 30 % of the total work forces are from Bangladesh. Dubai and in Persian Gulf shipyards have 20% workforce from these country [10]. Now a day skilled personnel and highly experts are also increasing in number country like USA, Australia and Canada. Many of them, who returned, could be utilized as advisors, consultants as well as high level qualified manpower.

3.3.3 Backward linkage industries

Bangladesh is currently exporting a few items meeting quality of international standard, which may be used in shipbuilding. Furniture, pipes, iron chains, wire and cables, light fittings, glass sheets, synthetic ropes are mentionable. Smaller industries such as for ship outfitting, safety accessories and signs, anchor & anchor cables, shafts, propellers & stern tubes, switch gears, panels etc. may be quickly developed in Bangladesh. Certainly the size of investments required for these industries suit most to the present state of industrialization in Bangladesh.

3.3.4 Extended shore line & river falls

Extended shore line and river mouth falling to the sea propose outstanding places for development of shipyards and shipbuilding area. The topography of rivers and river banks bestow special advantages for building small and medium size ships. Mongla basin and Meghna basin are good examples with standard Least available draft (LAD) for shipbuilding industry.

3.4 Basic Problems of Shipbuilding Industry in Bangladesh

3.4.1 Financial problem

Financial problem is often acute in shipbuilding industry. A shipbuilder requires huge working capital for constructing the ships. This cannot be met by the company's capital or clients’ down payment. On the other hand, as the loan's amount is very huge and there is no significant solid guarantee, the banks are not interested to take that much of risk by proving such huge amount of loan to a single firm. If they do, they charge high interest rate [11].

3.4.2 Technical problem

There is insufficiency in the number of backward linkage as auxiliary industries to support the shipbuilding industry as by providing service and supplying ships' machineries and equipments. Electric supply is not sufficient in all ship yards. There are some lacks in basic design ability of the shipyards. R & D and innovation have the strategic importance for the competitive position of shipbuilding sector. Bangladesh shipbuilding industry is still developing in this area.

3.4.3 Marketing

Bankers, stakeholders, custom house, foreign affair departments, government monitoring and regulating
bodies, etc are not fully aware of the local shipbuilding industry[3] That interrupt smooth activities to introduce the country as a shipbuilding nation. In 21st century, all nations will be considered as global village due to the result of globalization. Now it is extremely essential good reputation for export related shipyards to stand in the international business field.

3.4.4 Quality control issue

Eligible quality control divisions are essential to establish with their complete capability. Without presence of the division the quality questions are raised by the foreign ship buyers or by their agents. So a number of shipyard owners are unable to convince them. Shipyards must keep in mind that qualities help the whole process to receive the afterward agreement. Quality is the major prerequisite of shipbuilding industry.

3.4.5 Safety, health and environmental consciousness

The shipbuilders are more involved in improving their ability in technology, management, marketing and financing. Safety, health and environment are yet to be standardized as vital concerns in all domains of the society. The long term outcome of safety, health and environmental dealings are yet to be unstated. Only few shipyards are aware on the topic of safety, health and Environment.

4. CONCLUSION & RECOMMENDATIONS

4.1 Conclusions

Traditional players of market of global shipbuilding industry are over engaged in schedule mainly for constructing of large ships; consequently the ships’ buyers are searching for progressive new, appropriate and dependable markets in Indonesia, Vietnam, Bangladesh, Brazil, India etc. Bangladeshi shipbuilding is competitive in terms of low labor cost and lower effective cost of productivity. It has geographical advantage to establish the shipyards for small, medium size vessels easily. Backward linkage industries might take a crucial part to support the shipbuilding industry to reach its peak. So Bangladesh can create itself as a focal point of shipbuilding in the global perspective for small and medium-sized vessels.

Government should take strong initiatives to enter in international business as a shipbuilding nation. It is the government who has to take initiative directing and inspiring the financial institutions to lessen present interest rate, commission and other charges. Both government and private sectors should work together to establish technically developed and environment friendly shipyards as well as quality ships in a cost effective manner to enter into the world shipbuilding market.

4.2 Recommendations

Recommendations should be met instantly to turn Bangladesh more competitive than other neighboring countries and to attract and encourage new entrepreneurs:

a. Bangladeshi shipbuilding wants a positive financial and environmental regulatory framework to support shipbuilding and maritime industry.

b. It deserves appropriate government support for the growth of backward linkages of this industry, opportunities for employment expansion, a key new source of higher export revenue earnings.

c. The development could be sustainable of this industry by incorporated to upgrade the level of R & D and to promote the technological expansion.

d. Trained Worker and modern management practice provides technological enhancement, removes Low-productivity and make a huge improvement in terms of productivity.

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REFERENCE


Smart Health Management System for Rural Area of Bangladesh Utilizing Smartphone and NID

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Abstract—Ministry of Health and Family Planning is responsible for the Healthcare system of the urban and rural area of Bangladesh and responsible for building health facilities in urban and rural areas. However, it is a matter of fact that Bangladesh is still suffering in the sector of proper health management in the rural area. Rural health care taking centers have the limitations of inadequate medical supplies and are not capable of managing the number of patients in time. Private health care systems are not available and affordable for poor people of rural areas who are not getting advantages of modern health management system because of various issues. One of the main issues is that they are not being able to properly use modern technology to access various health services. Proper use of information and communication technology with proper training can be the best solution to solve this problem. This paper states the various problem that people of the rural area as well as low developed cities of Bangladesh are facing to get the health services and proposes a smartphone based system, which will ensure proper health management in the rural area of Bangladesh.

Keywords—health management; rural area; smartphone; NID

I. INTRODUCTION

Bangladesh is one of the most densely populated countries in the world which is unable to serve proper health care facilities to its people especially who live in rural areas. The health care system of Bangladesh is predominantly controlled by the Ministry of Health and Family Planning. According to the World Health Organization (WHO 2010), in Bangladesh, only about 3\% of the Gross Domestic Product (GDP) is spent on health services. However, government expenditure health is only about 34\% of the total health expenditure (THE), the rest (66\%) being out-of-pocket (OOP) expenses. Inequity, therefore, is a serious problem affecting the health care system [1]-[3].

Health care system is a measure of the socio-economic and technological advancement of a country. The availability and accessibility of health services are the keys to its effectiveness. In Bangladesh, a large number of people live in rural sectors but the majority of health care professionals serve in urban sectors. In addition, most of the well-established and well-equipped hospitals, health care and diagnostic centers, NGOs are situated in urban areas [4], [5].

However, the prompt increase of private medical system indicates that fewer professionals remained in the public sector to take care of the masses. People of rural areas are too poor to afford the costly services of the private medicals. The doctors of Bangladesh have a tendency to serve mostly in urban areas than the rural ones. Not only that, some semi-skilled and informal health care providers most commonly treat rural patients. This demarcation is one of the main culprits of poor health management in villages of Bangladesh.

The government of Bangladesh is constitutionally stuck to “the supply of basic medical requirements to all levels of the people in the society” and the “improvement of the nutrition status of the people and public health status” (Bangladesh Constitution, Article- 18) [6]. The health services of Bangladesh were limited to curative services but at present, with some development in modern science and technology, health facilities have focused mainly on primitive and preventive care rather than curative care. Still, more than half of the people of rural areas have no or restricted access to the proper health facilities. That is why the rate of death from diseases and improper treatments is higher in rural sectors than urban sectors of Bangladesh [4],[5].

In this paper, we have proposed a concept for rural people in Bangladesh, which is called Mobile-based Health Management System. The main feature of this concept is that rural people can enjoy the advanced medical services by using their smartphones and by providing their NID numbers for verification. For getting these services, they will just have to download an app and putting their NID number into that app for verification and then they will get a voice recording containing names and mobile numbers of expert doctors, address of nearby hospitals, number of ambulance drivers for emergency cases, tips on healthy lifestyles, knowledge of primary treatments and so forth.

II. PRESENT PROSPECTS OF HEALTH MANAGEMENT SYSTEM IN BANGLADESH

Bangladesh has a pluralistic health system in which government health facilities and a wide variety of private actors provide health services and drugs [7]. The private actors comprise of formal and informal sectors, non-governmental organizations (NGOs), private hospitals etc. The formal sectors include experienced doctors and dentists, skilled nurses and these sectors are mainly concentrated in urban areas. On the other hand, informal health care providers are more prevalent in rural areas and mostly include semi-skilled allopathic providers such as community health workers, trained midwives, medical assistants, unqualified allopathic providers...
such as drug shop retailers, rural doctors, and traditional birth attendants, faith healers etc.

Most of them do not have any educational background in medicine and have very little knowledge about diseases, treatments, and drugs. In spite of the fact, these informal health care providers are the only hope for the majority of the poor rural population, which is proved by a statistic that almost 75% people of rural people are dependent on them. In fact, 42% of outpatient visits are too informal providers and drug sellers [7]. Bangladesh Health Watch pointed out in 2008, there were only 0.58 qualified health workers for every 1,000 Bangladesh and only 16% of them were located in rural areas [7],[8].

Moreover, small pharmacies or drug sellers are scattered across all areas of human settlement in Bangladesh and many of these display adverts informing people of possible treatments as well as supplying antibiotics and other drugs. In Bangladesh, the majority of drugs are issued and sold without prescriptions. Not only that, dosages of drugs are determined by the amount of client can pay and the patient can stop taking drugs without completing the dosages. Besides all these negativities, a fact of hope is that Bangladesh has experienced substantial reductions in maternal, infant and child mortality during the past ten years it is on track to meet its health and other MDG targets [9].

Still, most of the people in Bangladesh buy unnecessary medicines without knowing about the side effects. At present, there are 64,434 registered doctors, 6034 dentists, 30,516 nurses and 27,000 nurse midwives in Bangladesh (cumulative figures unadjusted for attrition due to deaths, retirements, migration, and change of profession or inactivity)[10],[11]. In addition, World Health Organization (WHO) recommended a ratio of doctors to nurses to technologists is of 1:3:5 whereas in Bangladesh the ratio is only about 1:0.4:0.24. However, in Bangladesh, 13% of treatment-seekers use government services, 27% use private/ NGO services and 60% use unqualified services [7], [12].

Unavailability of doctors and nurses, their attitudes and behavior, lack of drugs, travel time to the hospitals are the major drawbacks of health management system of Bangladesh. In the face of significant shortages of highly trained health care personnel, there has been a growing interest in the possible ways that ICTs, in particular, the use of mobile phones (m-health), can improve access to safe, effective and affordable health services and advice in low- and middle-income countries. The Royal Tropical Institute (2013) categorizes the relevant m-health applications as follows [7], [13]:

- Education and awareness (disease prevention, educational programmers, health promotion, community mobilization)
- Point of Care Support and Diagnostics (support in diagnostics, screening and clinical care)
- Patient monitoring (treatment adherence support and appointment adherence)
- Disease and Epidemic Outbreak Surveillance (real-time tracking of cases of infectious disease)
- Emergency Medical Resource (emergency obstetric care, disaster management)
- Health Information Systems (supply chain management, procurement information)
- Human Resources for Health (distance training and continuous professional development)
- Health Financing (smart cards or vouchers using mobile payments)

III. RAPID GROWTH OF MOBILE PHONE USERS

Bangladesh uses mobile phones and around 130 million have access to the internet [14]. Whatever is the number of mobile phone subscribers, the wideness in the availability of mobile phones opens many opportunities in terms of health care provision, which may bring some health care benefits for people who live in the rural and slum areas. For example, mobile phone, if more accurately told smartphones can be used to seek health advice and health tips from health care providers or trusted friends and family persons. Some interviews, which were carried among 38,000 rural women in Bangladesh [7],[15], showed that around 20% used a mobile phone to seek emergency health care.

Moreover, another survey on malaria, which was conducted among a population of around 22,000 in a remote hill tract area of Bandarban district [16], suggested that 23% of household owned a mobile, 56% used for medical purposes and nearly 84% used their mobile for emergency treatments. Not only that, some of them used their mobile phones to learn about the sign and symptoms and diagnosis of malaria. All these data indicate that there is a huge possibility of improving health care facilities in rural areas of Bangladesh by using smartphones.

IV. PROPOSED SMART HEALTH MANAGEMENT SYSTEM FOR RURAL AREA OF BANGLADESH

The proposed method of this paper is aimed to develop an effective mobile health care system, which will be able to assist, and response to emergency and critical situation to the patient of underdeveloped cities and villages of Bangladesh. The proposed model is divided into several components.

The basic block diagram of the proposed system is demonstrated in the block diagram. In the proposed system, the user will be able to seek health assistance using a smartphone with internet access or any normal mobile phone, which has the ability for sending text messages and voice call. The user will have the ability to choose from both government and private service holder.

After accepting the assistance request from the user via apps, text SMS, helpline or web service, the request will be sent to the both govt. service provider and private service provider for processing using user’s mobile network service provider. The identification of the user will be verified using their NID.

After identity verification, requested service will be selected for providing and the chosen service provider will check the availability of the service. If one provider cannot provide any individual services, then there will be a facility of exchanging services between both providers. Finally, the service will be provided to the users.
V. COMMUNICATION BETWEEN USERS & SERVICE PROVIDERS

The user will be able to use several methods to contact the service provider. The user will have the opportunity to choose from government and private service. The figure is showing the functional block diagram of the communication process between the user and the service provider.

A. Using Smartphone, Apps and Web Services

One of the effective methods of contacting the service provider is through smartphone having access to the internet. An app is proposed for this purpose, which will guide the user to ask for proper assistance according to the user’s need. The proposed User Interface (UI) of the app is shown in the figure. In addition, the user will be able to communicate with the service provider using web services.

B. Using Text Messages and Voice call

Users having no smartphone will be able to call for assistance using text SMS and direct calling to a helpline. A cell phone has a service provider network is sufficient to contact the service provider. A helpline number will be created which will assist the user how to choose a proper health service for him and how to get emergency service.

VI. OPERATING PROCEDURE OF THE SERVICE PROVIDERS

A. User Verification using NID & Service Provider Selection

Verification of user is needed to provide proper health service and to ensure that service is not being wasted due to the false call. For this purpose, we proposed verification through National Identification number. The service provider will have access to the NID database from where they will be able to verify a user’s original identity. The proposed UI of the app is showing how a user will ask for assistance using Name NID and current location. The user will be able to choose between private and government service provider through the first step.

B. Service Selection and checking Availability

The user will be able to select following health services using proposed health management system.

a) Instant Call for Medical Attention: The service will provide instant medical support for the emergency case. The user can ask for assistance for emergency purposes like maternity, sudden accident etc.

b) Helpline for medical advice from expert medics: This service will provide health related advice and suggestion for
basic health assistance. Professional health caretaker will be appointed for providing this services.

c) The door to door medicine supply system: This service will provide user emergency medicine delivery at home during any time of the day. The medicines will be provided need to be prescribed by a professional health caretaker or doctor.

d) Emergency Ambulance Service: This service will provide user emergency ambulance service at any time of the day. The user needs to mention and prove his emergency state to use this service for preventing any false call for this service.

C. Service Exchanges and Providing services

The complete process of service provider and exchanging is shown in figure 4. The user will be able to select following services from the App UI as well as SMS and helpline will be able to provide similar services to the user.

![Functional flow diagram of the overall system](image)

After verification of the user, selected service provider will check the availability of the desired service of the user. If the selected service is not available for instant, there will be an opportunity to exchange services from another service provider. It will ensure proper health assistance for the user and also the collaboration will open a lot more opportunity for providing proper health services. Maintaining the Integrity of the Specifications.

VII. CONCLUSION

In conclusion, it can be said that the proposed system has the capability of bringing a breakthrough in terms of health management in rural areas of Bangladesh. If the above-mentioned system is implemented appropriately and accurately, then rural people, as well as the entire mass of this country, will be able to enjoy modern and convenient health care facilities and healthy lifestyles. Not only that, people can also get emergency medical services and experts' advice at a very reasonable cost by using only their smartphones. The proper execution of this system can also bring noticeable advancement in the total health sector of Bangladesh. Both Government and private healthcare sectors can earn profit from the proposed system. Therefore, this mobile-based health management system should be showcased and executed as early as possible in Bangladesh for the betterment of the health of its entire population.

REFERENCES


Inter-Professional Collaboration in Healthcare Management: Inter-Professional Teamwork Constructs

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Paper# ICBM-17-340

Inter-professional collaboration practice (IPCP) is necessary for all healthcare industries to support integrated delivery of healthcare service to focus on the health and social care needs of the citizens. Teamwork is known as a significant factor that is important in IPCP aspects of health care delivery. However, limited research has been conducted to evaluate the strong elements of inter-professional teamwork that are promoting to positive inter-professional collaboration practice. The purpose of this paper is to propose a framework on Teamwork constructs that related to this issue. The framework suggests two elements of inter-professional teamwork and its items that change inter-professional collaboration practice among healthcare professionals. The framework focused on the elements of trust and respect to synthesize the best elements that affect IPC practice. A comprehensive search was conducted of peer reviewed articles published in English from 2000 to 2014 using several relevant databases including Medline, Research Gate, Emerald, Pubmed, and Science Direct. There were 112 studies relating to inter-professional collaboration (IPC) practice and inter-professional teamwork (IT) were identified and only those 29 studies that related specifically to IPC and 23 studies of IT were applicable for this review. This paper highlights on the important elements of inter-professional teamwork in organization to influence the positive results of the effective inter-professional collaboration practice among healthcare industry.

Keywords: Teamwork, inter-professional collaboration, trust, respect, healthcare professionals.

I. INTRODUCTION

The organizations viewed teams as one of the important factors that can contribute to positive IPC practice and this is poorly conceptualized among healthcare professionals. Research suggested that the inter-professional teamwork and collaboration improve patient outcomes and access to healthcare [2] [65][66]. However, IPC requires continuous interaction, coordinated efforts and knowledge sharing among health care professionals. According to Haire [37], introducing inter-professional collaboration within health care organizations affords the potential for health care professionals to work collaboratively to provide high quality patient care. So, the purpose of this study investigates the elements of inter-professional teamwork that particularly affect the inter-professional collaboration practice among healthcare professionals.

II. INTER-PROFESSIONAL COLLABORATION PRACTICE

World Health Organization [65] was defined inter-professional collaboration (IPC) as “the multiple health workers from different professional backgrounds work together with patients, families, caregivers, and communities to deliver the highest quality of care”. Martin et al.,[45]stated that IPC may enhance the effectiveness and efficiency of health care delivery already been proved that can improve patient outcomes[45]. Furthermore, working with professionalism and open minded can create the successful of inter-professional collaboration practice among healthcare professionals. Recently, IPC has become a vital concern among hospital leaders in order to improve the quality of patient care while at the same time reducing health care cost [61].

III. INTER-PROFESSIONAL TEAMWORK

According to Reeves et al., inter-professional teamwork can be defined as follows: type of teamwork which involves different health and/or social professionals who share a team identity and work closely together in an integrated fashion and interdependent manner to solve problems and deliver services [55]. A good understanding among team members is really important in inter-professional teamwork to make sure the goals of organization are successful achieved. Chang et al., pointed out working in teamwork provide benefits to health care providers, including reducing extra work and increasing job satisfaction [21]. Furthermore, many of studies suggest inter-professional teamwork provides more comprehensive and effective services for patients [11][44][65].

In addition, this study will focus on the elements of inter-professional teamwork that give their impacts toward IPC practice. There are two key elements that have been focused by many studies and there are trust and respect. The following sections describe those elements and how trust and respect will affect the IPC.

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III. (A) TRUST IN INTER-PROFESSIONAL TEAMWORK

Trust among team members is seen as an important factor for teamwork [5][18][59]. It is also related to the concept of time where building positive inter-professional working relationships within teams takes more time than activities carried out within disciplined when relationships may already be well established [64]. In another way, trust also affects the performances of the team and the performances of the organization as well, both directly and indirectly.

Some of the items of trust are described below. There are four items will be discussed and how this items give the impacts towards IPC. In table 1, there are four items of trust under inter-professional teamwork which are positive working relationship, job satisfaction, team performances, and sharing information. About 22 studies in inter-professional teamwork believed that these items affect IPC.

There are benefits in trust relationship when it can decreased waiting time, better conflict management, improved healthcare in rural areas, improved chronic disease management and the provision of a healthy workplace environment [12]. In addition, a study has found that trust is considered the foundation of positive organizational cultures and, in essence, it can define healthy work-place [47].

Trust in teamwork can promote job satisfaction and reduce human errors in healthcare organizations. Healthy work environments have been describes as practice settings that maximize staff job satisfaction of trust: trust between staff and their leaders [45][58]. In another studies, have revealed that trust also leads to citizenship behaviours, organizational commitment, job satisfaction, positive attitude toward the organization and greater levels of performance[13][29][43][46].

Moreover, trust improves the team performance as well. Tseng and Ku [62] found that the level of trust has a strong positive relationship with team performance and also has a strong positive relationship with teamwork satisfaction. However, some studies do not support a strong connection between the level of trust and its effect on team performance, [1] in turn some other studies support a significant connection[43].

Aubert and Kelsey’s, [1] study did not find that trust would directly influence team performance, but they did find many elements where overall effort is lower in teams who also trusted their teammates. The study by Chong [22] characterized high performance with trust, good communication, high commitment and good time management amongst team members, whereas low performing teams were associated with mistrust, a lack of commitment and poor leadership.

Sharing opinions, information and feelings then giving suggestions between team members help to increase trust in any organization including healthcare organizations. Ståhle and Laento [60] highlighted that trust increases openness, which is an important factor in shared value creation. Robertson et al., [56] noted that trust strengthens knowledge sharing and transactional memory systems, and these dimensions have an effect on job satisfaction and team performance. In addition, trust supports people’s willingness to participate in open discussions, and also supports seeing the other’s point of view [38].
Table 1: items of trust in inter-professional collaboration practice

<table>
<thead>
<tr>
<th>REFERENCE</th>
<th>INTER-PROFESSIONAL TEAMWORK</th>
<th>Trust</th>
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<tbody>
<tr>
<td>Robertson et al. (2013)</td>
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<tr>
<td>Bandow, D. (2001)</td>
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<tr>
<td>Hakanen &amp; Soudunsaari (2012)</td>
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<td>x</td>
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<tr>
<td>Khatri, Halbesleban, Petroski &amp; Meyer (2007); Lowe (2006)</td>
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<td>Kramer &amp; Schmalenberg (2008); Rogers (2005)</td>
<td></td>
<td>x</td>
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<td>Lewicki, Tomlinson, &amp; Gillespie (2006)</td>
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<td>Lewicki et al. (2006)</td>
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<td>x</td>
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<tr>
<td>Canadian Inter-professional Health Collaborative[CIHC], (2009)</td>
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<td>x</td>
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<tr>
<td>Aubert &amp; Kelsey (2009)</td>
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<td>x</td>
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<tr>
<td>Weaver (2008)</td>
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<td>x</td>
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<tr>
<td>Tseng and Ku (2011)</td>
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<td>x</td>
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<tr>
<td>Callaway et al. (2007)</td>
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<tr>
<td>Kramer &amp; Schmalenberg, 2008; Rogers (2005)</td>
<td></td>
<td>x</td>
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<tr>
<td>Stähle and Laento (2000)</td>
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<td>Isaksen &amp; Lauer (2002)</td>
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<td>x</td>
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<td>Colquitt, Scott, &amp; LePine, (2007); Costa, 2003; Dirks &amp; Ferrin (2002); Kanawattanachai &amp; Yoo, (2002); Kirkman, Rosan, Telsuk &amp; Gibson, (2006); Langfred, (2007); Webber, (2008)</td>
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<tr>
<td>Tseng and Ku (2011)</td>
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<tr>
<td>Aubert &amp; Kelsey 2009</td>
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<td>Chong (2007)</td>
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<tr>
<td>Robertson et al. (2013)</td>
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<td>Hartsalo &amp; Miettinen (2010)</td>
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<td>Raab CA et al. (2013); Abramson JS (1996)</td>
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<td>Total paper</td>
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<td>7</td>
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In modern healthcare, respect in collaboration practice among teamwork is required in order to deliver a good understanding of what is expected of each other and develop a good interaction among professionals. In addition, collaboration occurs when individuals have mutual respect for one another and one another’s professions and are willing participants in a cooperative environment [9]. Besides that, Braford [8], pointed out that the lack of understanding, respect or appreciation of the contribution of other professionals thus constitutes a very real barrier to collaboration between healthcare professionals.

However, the table 2 shows the items of respect that also give their contribution towards IPC. There are 12 studies in Table 2 which discloses many researchers believed that the items of respect can contribute to positive or negative IPC practice.

People like to be respected especially during working time because they can gain some self-confidence when working around positive people. Delaney [26]; Duchscher [30]; Deppoliti [29] stated that some relationships-critical thinking and inter-professional respect may boost self-confidence among new graduate nurses. According to Pullon [54], confidence in professional competence underpinned trust and respect.

Regarding interdependence and knowledge exchange, inter-professional practitioners talk about the need for equality in terms of power relationships between professionals [35] and their willingness to share information [5]. The aim of inter-professional collaboration in practice is to provide an equal opportunity for each profession in the inter-professional collaborative team to share information and knowledge in a respectful and trusting environment [48][51].

Hall [36] describe a collaborative inter-professional team requires each member to have a respectful attitude for each other while sharing knowledge and responsibility, understanding the functions of each team member, and working together to deal with different client situations. Lack of respect in teamwork, emerged as an important barrier to engagement in inter-professional collaboration. A collaborative and
inter-professional setting prepares the individuals for accepting each other’s roles and understanding the necessity of teamwork for achieving the desired healthcare outcomes. In addition, inter-professional education allows for sharing experiences, skills and ideas, understanding different values, respecting the roles of other professions, and communicating better to improve the healthcare outcomes [62].

Same element to the trust whereas respect between team members also seen as an important factor for teamwork [5][15][59] and it is related to the concept of time to build positive inter-professional working relationships within teams will takes more time than activities carried out within disciplines where relationships may already be well established [63]. Piquette et al., [53] found that professionals will collaboratively provide a higher quality of care for their clients if they have inter-professional relationships comprised of mutual respect and positive interactions.

### Table 2: items of respect in inter-professional teamwork

<table>
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<tr>
<th>REFERENCE</th>
<th>INTER-PROFESSIONAL TEAMWORK</th>
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<tr>
<td></td>
<td>Respect</td>
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<td></td>
<td>Egalitarianism</td>
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<td>Khalili et al. (2013)</td>
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<td>Pullon (2008)</td>
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<tr>
<td>Delaney (2003); Duchscher (2003); Deppoliti (2008)</td>
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<td>Hall (2005)</td>
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<tr>
<td>Clark (2011); Atwal &amp; Caldwell (2002)</td>
<td>x</td>
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<tr>
<td>Weaver (2008)</td>
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<tr>
<td>Belanger &amp; Rodriguez (2008); Clements et al. (2007); San-Martin-Rodriguez et al. (2005)</td>
<td>x</td>
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<tr>
<td>Dyess &amp; Sherman (2009)</td>
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<tr>
<td>McCormark (2001); Nowdsilski-Vasilios &amp; Poole (2001)</td>
<td>x</td>
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<tr>
<td>D’Amour et al. (2008)</td>
<td></td>
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<tr>
<td>Wong &amp; Cummings (2009)</td>
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<td>Laschinger &amp; Smith (2013)</td>
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<td>Total paper</td>
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### IV. Conclusion

Inter-professional teamwork is an effective factor that can contribute to positive inter-professional collaboration (IPC) practice. There is a limited study of inter-professional teamwork and inter-professional collaboration practice in Malaysia. This issue has been the focus of researchers in recent years but less focused has been placed on it in Malaysia. Although this issue is a global concern, findings have shown that many studies are based on the Western environments and less attention was given to Asian countries.

In addition, much of the findings are based on the relationship between physicians-nurses or general
practitioners—community pharmacists. We also encourage other researchers to widen the study scope by looking at the elements under inter-professional teamwork with more specific and focus on the overall healthcare professionals such as physicians, hospital administrators, nurses, therapists, and other allied health staff.

However, there are limited studies that are focus on quantitative methods and most of the studies are focus on the qualitative methods. So, we are suggested to focus on the quantitative method for this study.

Acknowledgment

We would like to express our sincere gratitude to the Ministry of Education, Malaysia, Universiti Teknologi MARA (UiTM) Shah Alam and the Faculty of Business and Management, Universiti Teknologi MARA (UiTM) Selangor, Puncak Alam Campus, for their support and contributions. This research work was supported by the Fundamental Research Grant Scheme (FRGS) 600-RMI/FRGS 5/3 (0030/2016).

References


Determinants of Customer Loyalty Among Mobile Subscribers: A Conceptual Paper

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Abstract - Within the telecommunications industry, the mobile network service has a good potential for increase in growth. However, the mobile network subscriber’s growth rate in developing countries is slowing down due to market saturation. Hence, it is a challenge for service providers to retain and gain loyalty, as the competition among them is aggressive. Even though customers are satisfied with their service providers, they still turn away to other competitors. Therefore, this study is conducted to investigate the determinants of customer loyalty among mobile subscribers in Malaysia using the Expectation Confirmation Theory (ECT), as well as to fill the gap of information in this area. This study focuses on postpaid subscribers in selected areas in Kuala Lumpur.Employing a quantitative approach, the respondents include 300 postpaid subscribers from three service providers; namely Maxis, Digi, and Celcom. The variables in this study are duly operationalized and measures are developed and adapted based on an extensive literature review. Necessary modification is done accordingly following the pre-test and pilot study, prior to the actual data collection. Partial Least Square (PLS) is used to analyse the data. The findings of this conceptual paper contribute to greater understanding of the determinants of customer loyalty among mobile subscribers in Malaysia. In addition, the service providers and marketers can focus their efforts on the areas identified to meet customer expectation that can build customer loyalty and satisfaction.

Keywords - Customer expectation; customer loyalty; customer satisfaction.

I. INTRODUCTION

The competitive business environment demonstrates the significance for organisations to create and maintain their customer loyalty. Many researchers unanimously agree that customer loyalty benefits the organisation [1]–[3]. For instance, customer loyalty decreases the cost of marketing and increases profit. Furthermore, loyal customers will engage in word of mouth, advertising and promoting the products and services to others. Added to the point, they will subscribe to or use new services or products and perhaps make suggestions for organisations to improve on certain services or products [4].

Many service providers spend their resources to improve services in order to achieve their goal in retaining customers for a longer period of time. Past studies have disclosed various factors that contribute towards customer loyalty such as satisfaction, switching cost, trust, and service quality. It is pertinent to highlight that even though studies on customer loyalty have been an interest for the past decade, however, it is still challenging to understand the context of customer loyalty in the service industry due to the significant changes in measurement [5]. In the telecommunications industry, customer loyalty is a critical issue, because service providers lose about 27 to 30 percent of their subscribers every year [6]–[8]. It is estimated that these service providers lose around 2.2 percent of their subscribers almost every month. The matter is made more urgent with the cost of acquiring new customers is estimated to be around $600 and $800, which include advertising, marketing sales, and commissions [8]. Thus, this study is conducted to understand customer loyalty among mobile subscribers in Malaysia.

This paper is structured into several parts. The first part introduces the research; this is followed by the second part, which discusses past research. The third part deliberates the research problem. The proposed research model is illustrated in the fourth part, and the fifth and last part concerns the research method and conclusion of the study.

II. RESEARCH PROBLEM

Malaysia is facing the same issue with regard to retaining customers within its telecommunications industry, as the country’s three giant telecommunication companies; Maxis, Celcom and Digi, compete closely to maintain their current customers. The literature has revealed that Celcom’s profit was reduced by 5% in 2015 due to two main factors, which are price war and the goods and service tax (GST) implementation [9]. In addition, by the end of 2015, there was a decline in the number of mobile subscribers for all three giants companies [9]. It was recorded that 230,000 subscribers turned away from these three service providers in preference for other competitors, for instance U Mobile, TuneTalk, Aitel, Speak Out, and other virtual mobile network operators.

In 2015, MCMC conducted a study on consumer satisfaction through the Consumer Satisfaction Index (CSI) among five mobile service providers, which are Maxis, Digi, Celcom, Umobile, and Tunetalk. The result showed an increased rate of consumer satisfaction index.
(CSI) from 2006 to 2015. The result also revealed that CSI increased to 4.12 in 2015, implying that 91.2% subscribers were satisfied with their service providers. [10] Hence, the level of satisfaction among mobile subscribers positively increased.

However, Maxis and Celcom lost a significant number of their customers to other service providers in 2015. This leads to the question why, even though customers are satisfied with their service providers, they still turn away to other competitors. It is due to that question that this study is conducted in order to understand the phenomenon, and to figure out how companies can retain their customers longer in the current market.

II. PAST STUDIES

Past studies have shown that the cost of attracting new customers is far more expensive than in retaining the existing ones. Therefore, the organisation’s capitals are better spent on the existing customer rather than on gaining a new customer [11]–[14]. Furthermore, many studies have emphasised on the importance of customer loyalty in various industries, such as the banking industry [5], [15]–[17], the hotel industry [18], [19] supermarkets [20], [21] recreation agencies [22], as well as hospital and medical tourism [14], [23]. These studies suggest that loyalty is a product of satisfaction, either directly or indirectly.

A study was conducted by Sagib and Zapan (2014) addressing the importance of customer loyalty among 216 mobile banking customers in Bangladesh[24]. In addition, Tabaku and Çerri’s (2015) research in Albania among 350 mobile network subscribers supported the relationship between satisfaction and customer loyalty [25]. Furthermore, a previous marketing research also highlighted the significance of perceived quality and the pricing of product or services in retaining loyal customers in the service industry. A research conducted by [26] among 583 Malaysian subscribers revealed that these two variables are pertinent to maintain customer loyalty in the telecommunications industry [26]. Another research conducted by [27] among 205 visitors in Germany also revealed a similar association between perceived quality, pricing, and loyalty[27].

Many studies concentrated on the role of satisfaction on service quality, loyalty, and customer retention in various industries [5], [24], [28]. A study among 456 fixed line users in South-Eastern England (see [29]) revealed that satisfaction leads to customer loyalty. This finding is in line with the result of a study conducted by [29] among 140 mobile service subscribers in Kenya, which revealed the association between satisfaction and customer loyalty [29]. Another study conducted in Malaysia among the Gen Y also revealed the association between satisfaction and loyalty among mobile network users [30]. A majority of the authors believe that customer loyalty and the factors that affect customer loyalty are vital for the success of mobile network service providers. Overall, the findings from the various studies on customer loyalty suggest that service quality and satisfaction are the main determinants of customer loyalty.

Therefore, this study will include only few items of the service quality with respect to expectation of services, service performance, and service confirmation as the independent variables in this study. Previous studies highlighted that not all the variables in service quality associate with satisfaction and loyalty in the telecommunications industry [31], [32].

III. DEVELOPMENT OF MODEL

The confirmation theory views that customer satisfaction occurs when there is confirmation or disconfirmation as an outcome of the customer measuring the service performance or perceived service quality based on his/her standard expectation [31], [32]. The expectation confirmation perspective predicts that a customer’s level of satisfaction with the product or services will lead to the intention to repurchase [35], [36]. In contrast, the levels of customer satisfaction are determined by the pre-purchase expectation and discrepancies between expectation and performance toward the products and services.

Usually, customers will develop expectations toward the product and services before they engage in the buying process. Customers will explore the usage of the product or service and develop perceptions about its performance after the buying process. Therefore, this leads to the question of whether the expectations are confirmed (meet the expectations) or disconfirmed.

The development of this conceptual framework is guided by the Expectation Confirmation Theory (ECT). In discussing the model’s development, all of the variables, which consist of the independent variables and dependent variable, will be used to bridge the gap between satisfaction and loyalty among mobile network subscribers in Malaysia.

IV. RESEARCH VARIABLE

Service Expectation

Consumer expectation is believed to play an important role in setting the direction of actual behaviour. Although there are many others factors that may affect the customer’s actual behaviour, the scope of customer expectation deserves special attention as it is an important factor to access customer satisfaction or loyalty [37], [38]. Apart from that, expectation is defined as a consumer’s belief about the standard or reference point in the delivery of the service against the performance that he/she receives [38]. This definition points that customers tend to make associations by comparing their perceptions of service performance with a standard or reference point when making assessments on the quality of services. This is aligned with a study conducted in the healthcare setting, in which expectation is defined as a benchmark that
consumers use to evaluate the attractiveness and desirability of an outcome, people, product, service, or an event [39].

**Service Performance**

For most products or services, there are aspects of performance that can be objectively assessed; for example, delivery performance, waiting time, interest rates, etc. [40]. Perceived service performance denotes the consumers’ point of view during a service encounter and the service level that they receive [41], [42], [43] suggests that perceived performance encourages consumers to stimulate what they expect and receive when they are involved in a service encounter. He further describes perceived service performance as the condition when consumers compare their service encounter perception to what they expect to receive during the process. However, perceived performance also refers to the personal evaluation or assessment of performance made by a person after receiving a service [44], [45], [46] clarified that when the service performance is much better than what the customer expected, it would result in positive disconfirmation and satisfaction. According to the authors, when the service expectation is equal to service performance, than there is a confirmation between expectation and performance, which also leads to satisfaction.

**Confirmation**

Confirmation is the customer’s assessment of a product or service performance in relation to a pre-purchase comparison standard, such as expectation [44]. When Oliver first defined the idea of confirmation, he stated that a customer would be satisfied if his/her perception matches expectation, if confirmation is reached. This view is supported by [47], as when a customer perceives the product as performing better than expected, he/she becomes more satisfied [48]. In short, confirmation simply means maintaining the adaption level of a product and services, which can lead to satisfaction [49].

**Satisfaction**

Consumer satisfaction as a process is defined as an assessment of what customers expect versus what they received [50], [51] emphasised the perceptual, evaluative, and psychological processes that contribute to consumer satisfaction. However, [52] argued that the process to define satisfaction is much related to the focus on factors rather than satisfaction itself. [53] interpreted ECT as a five-step process to the formation of satisfaction. The process starts when the consumer develops an initial expectation of a specific service before purchase. Next, in the process of initial consumption, the consumer forms a perception towards the performance of the service. Then, the consumer begins to evaluate the performance and prior expectation level to determine whether expectation is confirmed. The consumer continues by forming a feeling of satisfaction or dissatisfaction based on the confirmation level. Lastly, the feeling of satisfaction will occur when the expectation matches or exceeds the service performance.

**Loyalty**

Loyalty is also viewed as the strength of the relationship between the individual’s attitude and repeat patronage [54]. This connects to the idea that customers who are loyal are fewer and more expensive to serve, do not mind paying the price, and willing to be associated with the company. Nonetheless, customer loyalty is further defined as “A deeply held commitment to rebuy or patronise a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour” [55]. This definition states that customers may develop both an affective relation to the product and services, and that act of relation can be viewed as loyalty. That is why attitudinal and behavioural loyalty components are required to achieve loyalty [56]. This definition is also aligned with [57], who distinguished loyalty into two aspects that include attitudinal and behavioural loyalty, referring to the customer’s action that include repeated purchase and willingness to recommend to others. Based on what have been discusses, Figure 1 illustrates the proposed model for this research.

![Fig 1: Expectation Confirmation Theory](image)

**Research Objectives**

In conducting this study, evidence is sought bearing the following research objectives:

- To determine the relationship between service expectation and service confirmation;
- To determine the relationship between service expectation and satisfaction;
- To determine the relationship between perceived service performance and service confirmation;
- To determine the relationship between perceived service performance and satisfaction;
- To determine the relationship between service expectation and perceived service performance;
- To determine the relationship between service confirmation and satisfaction;
• To determine the relationship between satisfaction and loyalty.

V. RESEARCH DESIGN

This study, employed G*Power 3.1 to calculate the sample size. Result of the calculation shows that the sample size required is 129. However, after reviewing the previous literatures, the researcher decided to increase the sample size by 350 in order to reduce the risk of missing data. Consequently, the final sample was determined to be approximately 350. By using a purposive sampling, a total of 350 questionnaires will be distributed around Kuala Lumpur as it has the highest number of users compared to other states. Three service providers are approached, which are Maxis, Celcom and Digi, to gain access in distributing the questionnaires at their service centres. The questionnaire which is adapted and adopted from previous studies are modified according to the nature of the study. The conceptual model is analysed using SmartPLS. The previous study conducted by [58] revealed that most of the studies conducted in the area used PLS-SEM due to the following reasons:

- non-normal data
- small sample size
- formative measures
- focus on prediction

V. CONCLUSION

This research is on going and the significance of this study can be understood from two viewpoints, which are theoretical and practical approach. A theoretical contribution necessitates the expansion of an existing theory that will change the basic understanding of the instruments by which the variables link between each other. The outcome of this research may be valuable for managers and researchers, especially those in the telecommunications industry. This study will enrich on the existing research in developing countries on determinants of customer loyalty by looking at the customer satisfaction perspective in postpaid mobile network segmentations. The findings may contribute to the empirical knowledge in rising customer loyalty towards their service provider.

Pertaining to its practical application, this study may shed light not only to practitioners and service providers, but also numerous researchers in various disciplines such as psychology, hospitality and to relevant organisation, marketers, and policy makers. Marketers who intend to gain loyalty from their consumers need to become more visible and learn better their customer expectations. Therefore, by understanding the requirement of customer expectations, they can provide services that are better or at par with the expectation, thus leading to loyalty and reducing customer churn rate.

ACKNOWLEDGMENT

The authors would like to thanks to Ministry of Higher Education (SLAB/SLAI) and Universiti Teknologi MARA for the financial support in conducting the research.

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Causes of Occupational Stress among Faculty Members: Case Study of a University in Bangladesh

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²Senior lecturer, BRAC Business School, BRAC University, Dhaka, Bangladesh

Abstract - The paper aims to investigate the factors causing occupational stress among academicians at a private university in Bangladesh. Adopting case study methodology and utilizing semistructured interview method, the findings of the study comprise a wide range of factors including lack of flexibility, incompatible expectation between employees and employer, role conflict, strict organizational policy, excessive workload, and work family conflict. In addition to this, the paper attempts to identify the existence of correlation among these factors and also investigate the impact of stress leading factors on teaching performance as well as career management. Interestingly, the study identified negative relationship between stress and teaching performance of the faculty members and also found the impact of occupational stress on psychological contract among the faculty members.

Keywords: Faculty members, Higher education, Occupational stress, Case study, Bangladesh,

I. INTRODUCTION:
The study examines the reasons and consequences of occupational stress among university faculty members of Bangladesh that affects both their teaching and research tasks. Generally it is assumed that working in a corporate sector is more stressful than in teaching profession and teaching profession has less workload contributing to have a better work life balance. So, this research was carried out to find out to what extent the faculty members in higher education institutions actually face occupational stress and what are the main stress causing factors.

II. LITERATURE REVIEW
Job stress is the unpleasant condition or position at workplace has negative influence on an individual’s overall well-being and performance. Different sets of faculty members have different predictors of job burnout and stress levels which vary based on the level of experience and demographics[1]. Contemporary research shows that, professors have less stress than lecturers as they are already at the advanced level of their career development and they have greater flexibility in both teaching and research. In addition to this, female faculty members, having high level of anxiety and depression and also a low level of job satisfaction, are found to be significantly different on these scales from their male counterparts [2]. Moreover, academics with tenure have substantially greater job satisfaction than their colleagues without tenure. Contemporary studies investigated that the increased workload and long working hours are also one of the major sources of occupational stress among the academicians [3], [4]. The job demands of the teaching profession as researchers, administrators and supervisors also increase job related stress among faculty members of higher education [5]. Due to rapid changes in tertiary level of education structure, the academicians also perceive a considerable increase in the executive responsibilities which cause stress and could lead to more psychological problems [6]. There are many individual differences and abilities among the faculty members which pose a threat to their emotional and psychological wellbeing but sources of this state include excessive research work, shortage of time and energy as well as overload of teaching the extra classes [7]. Similarly, (C.Cooper and J. Roden, 1985) has found a positive relationship between work related stress and job performance stating that increasing professional responsibilities contribute to their share in prevailing the psychological and emotional problems and poor job performance [8], [9]. Uneven demands from different personal and organizational roles, insufficient resources for suitable presentation, unsatisfactory proficiency to meet the demands of their job, poor self-sufficiency to make decision on different tasks are found to be the dominant sources of job related stressors [10], [11].
Further research has shown that the negative association between job satisfaction and poor physical health, low psychological well-being and high level of job stress [12]

III. METHODOLOGY:

The study aims to investigate the causes of stress among faculty members of a university in Bangladesh. Thereby, a case study method has been adopted and the study has applied both qualitative and quantitative research methods. In terms of qualitative method, an indept semi structured interview was conducted among 30 faculty members in which factors including age, gender, and professional designation was taken into account as a part of criterion sampling. In addition to this, survey has been conducted and utilized in the form of descriptive statistics. The sample consists of total 35 faculty members, which include both female and male faculty members, associate professors, assistant professors, senior lecturers, dept. coordinators, parttimers and lecturers. There were young lecturers and senior professors too.

IV. RESULTS:

A positive correlation has been found between qualitative and quantitative data analysis. The table represents the major sources of stress among faculty members. Out of these nine items - Incompatible expectation between employer and employee, strict organizational policy, extra responsibilities are found to be the top three (scoring 87%, 80%, 67% respectively) factors causing occupational stress.

<table>
<thead>
<tr>
<th>Stress causing factors</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Neutral (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of Flexibility</td>
<td>53</td>
<td>41</td>
<td>7</td>
</tr>
<tr>
<td>Incompatible expectation between employer and employee</td>
<td>87</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Role Conflict</td>
<td>20</td>
<td>80</td>
<td>7</td>
</tr>
</tbody>
</table>

The semi structured interviews provided an in-depth insight to the factors of stress found from the quantitative data analysis.

From the qualitative data, it is revealed that part time course instructors have low level of stress and the lecturers have a high level of stress. It was found that the main sources of stress come from - “Incompatible Demand from Authority”, “Strict Organization Policy”, “Extra Responsibility” and “Lack of Flexibility”. All of the female faculty members have expressed that it is hard to maintain work life balance. The faculty members are stressed out because of the additional responsibilities that comes with the teaching profession such as committed office work hours and taking work home. Part time faculties are less stressed out and 85% of them are satisfied with their job, as they have very little amount of extra responsibilities, and the working hours are short. Interestingly, teaching doesn’t cause the stress, the main stress comes from the other responsibilities, rules and regulations that makes the job more stressful. This is why the part time faculty members feel little or no stress, as they do not have extra responsibilities such as invigilation, attending seminar, commitment to research, etc. They just perform the mere basics of teaching – teaching and checking scripts. The professors have a teaching assistant, whereas lecturers usually do not have any teaching assistants to help their work load. Also, some interviewed professors said they were under so much pressure that they felt the urgency of being a part time. Lecturers, on the other hand, need to advance in their career, as a result even if the pressure
is high, they do not have a choice to quit or give up full time teaching.

According to the survey result, the most dominant factor causing stress is incompatible expectation between employer and employee – it was the main stress causing factor for 87% of the faculty members, 80% of the faculty members also said strict organizational policies caused them stress. Extra responsibilities are also a stress leading factor for 60% of the faculty members.

As mentioned earlier, the top stress causing factors for almost all the faculty members are strict organizational policies and incompatible demand from the authority.

70% of the faculty members have mentioned that the authority needs to give faculty members flexibility to choose the class timings and the subjects they wish to teach, and there should not be strict rule regarding fixed working hours, as it is not a corporate job. It is not a corporate job and teachers should not be expected to stay for the whole day. Even though this profession is more flexible compared to other professions, respondents felt there should be greater flexibility in terms of the required hours that a faculty must stay in the university campus. This profession involves mostly cognitive skills, so if the faculty members are not restricted to the fixed number of hours they have to stay, they can practice their creativity to its maximum. Sometimes bureaucratic systems slower down the decision making process and a lot of time is consumed contributing to extreme work load and subsequently generating stress for any faculty members.

87% of the interviewed faculty members have mentioned that incompatible expectation between employer and employee is the biggest stress causing factor for them. The institutions as well as the profession demands research work, but there is often any time left after the committed work hours of taking classes, and fulfilling all extra responsibilities that comes with teaching. Failure to meet this demand hinders their opportunity for career advancement. The fact that even after the faculty members are performing at their highest potential, leaving little or no time for themselves they cannot meet those demands and this causes stress. Higher education teaching usually involves very long hours and according to 40% of the interviewed faculty members, long work hours causes stress. There are policies where the full time faculties have to stay for certain hours, apart from their class timing and consultation hour. Apart from the office hours, there are extra uncounted hours in this profession. All the work cannot be completed during the faculty’s working hours. There is exam script checking, checking the assignments, preparing for the class; The time spent in these activities are not counted, so faculties often have to work for longer hours than the fixed working hours which causes them to stressed out, as even at home they need to work in order to complete fulfill their responsibilities. 67% of the respondents mentioned that teaching in general is not the problem, or does not cause much stress, it is the extra responsibilities that take up a lot of their time and leads to stress. Faculty members have to carry out research, attend seminars and conferences, check scripts, invigilate, carry out advising, etc. these usually take up a lot of their time and faculty members do not enjoy these activities as it is not part of their passion. Trying to manage these, while maintaining class schedule becomes more hectic for the faculty members. 47% of the faculty members have mentioned that they feel that the internal departmental line managers is biased, this hinders their opportunity of career development and this makes them frustrated and stressed out. They have also mentioned that they feel unimportant in department meetings, and feel like their opinion is not heard. This makes them less interested in working in the institution even if the factor is not applicable for all institutions, and differs from person to person. In some departments, subjective biasedness is present and this adds to the stress of employees which, indeed, leads to low job satisfaction. It has been found that 47% of the interviewed faculties suffer from work life balance due to the work pressure. If the institution was more flexible and gave the faculty members to organize their lesson plan their way, the faculty members could reschedule classes or adjust the course work according to its importance and difficulty level when they are going through some family stress. From the findings it is seen that, the faculty members who are parents of younger children are the ones who struggle with this the most. As when a child is a toddler, they demand more time from their parents with each passing year. The parents also feel like they should try to spend most time with their children, but after work they feel very tired to play with them. Sometimes, when they have to work for longer hours, they feel guilty and miss their children and this disrupts their work and causes stress. 40% of the faculty members have responded that the workload is way too much and it is the extra responsibilities that adds stress. There are faculties who are okay with the work load, and they manage the course outline beforehand, so they know how they can divide and manage the workload. Some also said how they knew about the workload, and they know they signed up for this so they do not mind it as it is a part of the job.
Due to the work pressure, some respondents mentioned their dilemma between quitting and keeping the passion for the job alive. Some senior professors who take undergraduate and post graduate classes mentioned that they were rethinking about full time teaching, that maybe they should switch to being part time teaching to lessen the load, as it is mentioned before that part time teachers have lesser work load and lesser responsibilities to fulfill.

V. RECOMMENDATIONS:

A little flexibility in the policies can really help the faculty members. Authorities need to work with the faculty members, and before implementing any new policies departmental meetings can be held to know if the policies would be helpful for them or not. We have seen how the main factors that causes stress can be controlled by the authority, so if the authority works together with faculty members to understand their problems they can solve these problems and the teachers can perform better.

There should not be fixed office hours and teachers should be given the liberty to pick their timings and their work load according to the amount of stress they can handle. Reward could be adjusted according to the number of courses they take.

University could take initiative to help the faculty members to release their stress by keeping an option for psychological counselling, then meditation sessions could be arranged in a weekly basis.

Finally, it is seen that faculty members of the universities which have trimesters are more stressed out, therefore keeping minimum two semesters a year is a better strategy than trimesters and it would decrease the stress for teachers and students. In trimesters, faculty members have very little break and there is a lot needed to cover in a very short time therefore there’s a huge pressure. Compared to two semesters a year, the pressure is much more as the syllabus is same in all the curriculums. Therefore, we feel like if universities have at least two semesters in a year, this would decrease the stress and the semester break duration will also increase.

VI. CONCLUSION

From the analysis it is found that, “Incompatible expectation between employer and employee”, “Strict Organization Policy”, “Extra Responsibility” and “Lack of Flexibility” these factors causes stress. These could be controlled by the authority. The root of this problem could be the strict organizational policies. Institutional policies should not be like corporate or other sectors. This job requires cognitive skills, and so the faculty members need freedom in order to perform at their maximum potential. Before setting any policies, authority should consult departmental meetings to know if the new policies are helpful to the faculty members or not.

After interviewing part time faculty members, lecturers, assistant professors and associate professors it is evident that the part time faculty members face little or no stress at all, they have their desired timings and just have no extra responsibilities to fulfil. They are the ones who enjoy teaching to the fullest. The most stressed are the lecturers or senior lecturers. They are full time faculty members, who have to stay for a fixed number of hours, apart from their class timing and consultation hours. Another factor that goes against them is that unlike Professors, teaching assistants are not assigned to lecturers; hence their workload is much greater than professors. Professors who take a lot of classes said that they sometimes feel like quitting full time teaching, lecturers cannot afford to take this type of decision. Lecturers feel the urgency to research more in order to advance in their career, leading to excessive pressure in their life. From the research, it can also be said that stress can negatively affect job performance [16], this could eventually lead to crisis in talent management and employee management.

It can be said that even though teaching might seem like it is flexible, and less tiring than corporate jobs it is very stressful as it involves commitment towards students, has uncounted work hours (a lot of work has to be done even at home) and many responsibilities to fulfil in a short time. The workload is very high and it can get mentally draining too. Teaching can also get monotonous, as teachers have to teach the same thing all year round.

Overall, stress is present in every job sector and people see stress differently. To some faculty members, even though teaching is a stressful job they enjoy it and workplace stress did not diminish their passion for teaching. There are some common factors that make teaching more stressful for the teachers, which have been mentioned in this paper, if these issues are addressed work place stress for faculty members can be greatly reduced.
REFERENCES


My knowledge is not enough: An investigation on the impact of threat of professional obsolescence on turn away intention among IT professionals in Bangladesh

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Abstract - While the economy of Bangladesh is booming in information technology (IT) sector, reports suggest that only 10% IT or computer science graduates are contributing in this development. IT companies are challenged to hire new IT graduates as many professionals are switching job to teaching or management positions or moving aboard for higher studies. Using the work place exhaustion and threat of professional obsolescence (TPO) as theoretical lenses, this study explains what are the factors negatively impacts turn away intention of IT professionals. Specifically, we hypothesize that threat of professional obsolescence is very crucial and impacts very high on turn away intention. Data were collected from 185 IT professionals from 15 different IT companies in Bangladesh by survey questionnaire. Structural equation modeling technique was used to analyze the data and test the research model. The results of testing the model indicate the central role of TPO on turn away intention. This study advances the theoretical understanding on turn away intention and offers suggestions for both academia and organizations. The paper also acknowledges the limitations of the study and suggests research directions for future researchers.

Keywords -

I. INTRODUCTION

In Bangladesh, software industry currently employs over 7, 00,000 in over 2000 IT companies. Another report suggested that there were 956 IT member companies in BASIS out of which 382 claimed that total $594.73 million worth IT and ITES products were exported. Again according to Prime Minister’s ICT affairs advisor, Mr. SajibWazed Joy, said that Bangladesh is exporting $700 million from ICT sector [1]. Despite contributing to Bangladesh economy rapidly, in recent years some important problems have been observed fairly frequently among information technology (IT) professionals, namely turn-away. BASIS President Mustafa Jabbar asserted that only 8 percent of around 10,000 graduates in computer science and engineering (CSE) in Bangladesh contribute to software development, said. The software companies of Bangladesh are currently in need of significant amount of IT professionals [1].

Turn-away means the IT professional abandons the area in order to occupy a position in a different area, either in the same company or in another, sometimes assuming a managerial function, sometimes going abroad for higher study or prefers teaching or training job. With organizations challenged in their efforts to hire additional staff, IS professionals are being asked to do even more, often leading to burnout, turn away, and turn-away intentions.

Previously researchers from human resource and information system disciplines paid their attention on turn over intention but recently researchers are beginning to move their interest on turn away intention. As preliminary study, we searched google scholar database, but failed to identify any single research in Bangladesh focused on turn away intention, therefore, the research reported here focused on the factors influencing TAI and more importantly impact of threat of professional obsolescence. Thus our research question is

RQ: What are the factors that influence turn away intention among software professionals?

The set of factors was adopted from the research of [2]. An additional contribution was made by measuring the influence of threat of professional obsolescence on TAI.

II. LITERATURE REVIEW & MODEL DEVELOPMENT

We started from the research of [2] who utilized information system career related demands and resources as predictors of TAI.

IS career demands and exhaustion

Reference [2] adopted the variables called work overload (WO) and career-family conflict (CFC) from the turn over model of [3]. According to Ahuja et al. 2007. Work overload is the perception that assigned work exceeds an individual’s capability or skill level and Work–home conflict is the perceived conflict between the demands of work and family. The research of Armstrong et al. 2015 found significant relationship between WO and CFC on workplace exhaustion (EX). Based on that evidence, our hypotheses are

H1: WO has positive impact on EX of IT professionals.
H2: CFC has positive impact on EX of IT professionals.
IS career resources and exhaustion

The research of [2] also investigated the influence of IS career resources (fairness and control of career) on EX and found significant result. Reference [4] mentioned fairness (FRN) like pay scale, promotion or other reward equity are very important factors for IT professionals. Control over one’s career (COC) also provides individuals with opportunities to adjust their work according to their
needs, abilities, and circumstances. Within the IS profession, we propose that higher level of fairness and individuals perceived control of their career leads to lower level of EX. Therefore, the hypotheses are

H3: FRN has negative impact on EX of IT professionals.
H4: COC has negative impact on EX of IT professionals.

IS career exhaustion and turn away intention
Exhaustion (EX) has been found to be a significant correlate for TAI [2]. If any IT professional perceives exhaustion, then only treatment may be to change professions or switching to another profession. To confirm these relationships within our context, we hypothesize:

H5: EX has positive impact on TAI of IT professionals.
Threat of professional obsolescence and turn away intention
Professional obsolescence is considered a crucial issue[5]. The nature of information technology related work nature and profession are rapidly changing. As a result, fear of falling behind in technology race puts pressure on professionals to keep them inline through learning new skills put extra pressure. It was identified significant negative relationship between TPO and career commitment [6]. Failure to maintain and update one’s skills can quick make a professional obsolete. Therefore, we believe higher level of TPO will lead to higher level of TAI. Hence,

H6: TPO has positive impact on TAI of IT professionals.

Our model(see figure 1) illustrates the concepts of exhaustion, professional obsolescence and turnover to the domain of an IS professional’s career by presenting a set of representative antecedents adapted from [2] and [6].

![Figure 1. Proposed research model](image)

III. RESEARCH METHOD

A. Study Design
This research is part of a 6 months study. We contacted several software firms in Dhaka, the capital of Bangladesh. This study applied self-administered questionnaire in collecting the data. Participants for the main study were individuals working in those software firms. A total of 300 questionnaires (printed) were distributed among the participants. A total of 185 questionnaires were returned with a response rate of 61.6%.

B. Measures
The questionnaire consists of two sections. The first section elicited the demographic data; the second section was focused on items to measure the constructs of our research model. The questionnaire items were adapted from validated instruments. All items for WO, CFC, COC, FRN and EX were adapted from the research of [2]. Items of TAI and TPO were adapted from [2] and [6] respectively.

C. Data analysis strategy
To analyze the research model we used the Partial Least Squares (PLS) analysis using the SmartPLS 3.0 software [7]. Following the recommended two-stage analytical procedures by [8], we tested the measurement model (validity and reliability of the measures) followed by an examination of the structural model (testing the hypothesized relationship) [9,10]. To test the significance of the path coefficients and the loadings a bootstrapping method (5000 resamples) was used [11].

D. Demographic information
Table 1 shows that out of 185 individuals, 128 (69.19%) were male and 57 (30.81%) were female. In terms of age range, most of the respondents (34.05%) were aged between 25-30 years, 27.56% were between 25-30, 24.32% were aged between 36-40 and 26% were aged above 40.

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>128</td>
<td>69.18919</td>
</tr>
<tr>
<td>Female</td>
<td>57</td>
<td>30.811</td>
</tr>
<tr>
<td>25-30</td>
<td>51</td>
<td>27.56757</td>
</tr>
<tr>
<td>31-35</td>
<td>63</td>
<td>34.05405</td>
</tr>
<tr>
<td>36-40</td>
<td>45</td>
<td>24.32432</td>
</tr>
<tr>
<td>40+</td>
<td>26</td>
<td>14.05405</td>
</tr>
</tbody>
</table>

134 (66.35%) were aged between 18–21 years and 63 (29.03%) were between 22–25 years, while the remaining10 (4.6%) were above 25 years. As regards gender, 167 (76.95%) were male and 50 (23.05%) were female. Meanwhile, 4.14% had experience of reading online newspapers for less than one year, 53% had experience of one to two years, 33.17% had experience of...
three to four years, and 9.67% had experience of more than four years.

IV. RESULT

A. Measurement Model
In Table 2, Average Variance Extracted (AVE) and Composite Reliability (CR) have been reported. The measurement will be acceptable if the AVE for each construct is greater than 0.50 [12] and CR is greater than 0.80 [11]. In this case, all items are loaded highly on their own latent variable and thus all measurements have satisfactory levels of reliability.

<table>
<thead>
<tr>
<th></th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFC</td>
<td>0.825</td>
<td>0.544</td>
</tr>
<tr>
<td>COC</td>
<td>0.808</td>
<td>0.517</td>
</tr>
<tr>
<td>EX</td>
<td>0.828</td>
<td>0.550</td>
</tr>
<tr>
<td>FRN</td>
<td>0.772</td>
<td>0.536</td>
</tr>
<tr>
<td>TA</td>
<td>0.810</td>
<td>0.518</td>
</tr>
<tr>
<td>TPO</td>
<td>0.786</td>
<td>0.551</td>
</tr>
<tr>
<td>WO</td>
<td>0.756</td>
<td>0.511</td>
</tr>
</tbody>
</table>

Table 2. CR and AVE

V. CONCLUSION

In Table 3, the analysis of discriminate validity shows a higher loading of each item on the construct than any other construct. The results show reasonably higher factor loadings on a single construct than on other constructs.

<table>
<thead>
<tr>
<th></th>
<th>CFC</th>
<th>COC</th>
<th>EX</th>
<th>FRN</th>
<th>TA</th>
<th>TPO</th>
<th>WO</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFC</td>
<td>0.737</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COC</td>
<td>0.105</td>
<td>0.719</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>0.451</td>
<td>0.099</td>
<td>0.742</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRN</td>
<td>0.188</td>
<td>0.051</td>
<td>0.155</td>
<td>0.732</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA</td>
<td>0.411</td>
<td>0.072</td>
<td>0.499</td>
<td>0.241</td>
<td>0.720</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPO</td>
<td>0.381</td>
<td>0.067</td>
<td>0.302</td>
<td>0.249</td>
<td>0.487</td>
<td>0.742</td>
<td></td>
</tr>
<tr>
<td>WO</td>
<td>0.290</td>
<td>0.123</td>
<td>0.453</td>
<td>0.247</td>
<td>0.362</td>
<td>0.305</td>
<td>0.715</td>
</tr>
</tbody>
</table>

Table 3. Discriminant Validity

B. Structural Model
To test the hypotheses, the structural model (Figure 2) was evaluated. The model suggested that CFC, WO, FRN and COC explains 32.8% variance on EX. EX and our new variable TPO explain 37.3% variance on the dependable variable of TAI. In case of hypothesis test result (see table 4), strong evidence was found that hypothesis H1 (WO → EX) and H2 (CFC → EX) were supported and was strongly significant with $\beta = 0.369(p<0.01)$ and $\beta = 0.331(p<0.01)$ respectively. The relationship between resources which means H3 (FRN → EX) and H4 (COC → EX) are not significant. Moving further up to our model, with regard to IT professionals turn away intention, H5 (EX → TAI) and H6 (TPO → TAI) both are strongly significant with $\beta = 0.387(p<0.01)$ and $\beta = 0.370(p<0.01)$.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Original Sample</th>
<th>T Statistics</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 WO → EX</td>
<td>0.369</td>
<td>6.202</td>
<td>0.000</td>
</tr>
<tr>
<td>H2 CFC → EX</td>
<td>0.331</td>
<td>4.882</td>
<td>0.000</td>
</tr>
<tr>
<td>H3 FRN → EX</td>
<td>0.007</td>
<td>0.097</td>
<td>0.922</td>
</tr>
<tr>
<td>H4 COC → EX</td>
<td>-0.110</td>
<td>1.326</td>
<td>0.185</td>
</tr>
<tr>
<td>H5 EX → TA</td>
<td>0.387</td>
<td>5.633</td>
<td>0.000</td>
</tr>
<tr>
<td>H6 TPO → TA</td>
<td>0.370</td>
<td>5.937</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 4. Hypothesis test result

See figure 2, the final structural model.

Figure 2. Final model with result

V. DISCUSSION

The research goal of this study was to investigate the role of various factors to measure IT professionals’ turn away intention. Our developed research model argued that apart from fairness and control of career, the other variables are strong predictors for turn away intention. The result of the present study suggests that our hypotheses H1, H2, H5 and H6 are supported. H3 and H4 are not supported.

In case of the relation between IS career demands, our hypotheses H1 and H2 are supported. This results are
consistent with the research of [2]. It is obvious that IS professionals require strong mental effort to meet their workload expectations. Failure to provide that effort the turn-away intention will be high. Management should train employees with respect to effective time management strategies to deal with these situations. With regard to career-family conflict, our data suggests that CFC is strong predictor. We suggest that to reduce the risk of workplace exhaustion, organizations should provide necessary leave for the civic activities of IS professionals.

With regard to IS career resources, our hypotheses H3 and H4 were not significant. These results are not consistent with the result of [2]. Mixed responses were found about these two constructs. We believe that fairness is present in the current IS market in Bangladesh. In case of COC, we assume that recent uprising of freelance works lead the participants to control over their career. Freelance works increases in Bangladesh as report [13] suggested Bangladesh is ranked seventh among 186 countries where online jobs are outsourced.

Evidence regarding H5 which was the relationship between EX and TAI are consistent with the research of [2] and [3]. This may indicate that when an individual is exhausted from an IS career, s/he may contemplate withdrawal from the source of the exhaustion. Managers should identify and remove the potential factors that influence EX to reduce TAI of qualified researchers.

Our final hypothesis, H6 implies the strong relationship between TPO and TAI. Higher level of TPO will lead to higher level of TAI. This result is consistent with the previous result of [6]. Managers can provide proper training to their IT professionals to keep up with the pace of change of skills and technology.

Maintaining a qualified and stable body of IS staff has been ranked as one of the most critical factors for successful functioning of any organization. We believe that our study provides significant theoretical contribution by including TPO with the model of [2]. Practically, this research provides several implications for managers. In sum, we believe such a better understanding would assist employers in planning better strategies to increase favorable outcomes.

REFERENCES

Place Placement Plays Vital Role in Tourism of Bangladesh

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Abstract- Place placement means any kind of intentional promotional activities of a specific destination through various types of advertisements, movies, TV series, social media, story book, newspapers etc. The study will emphasize on how place placement can influence destination branding. Many advertisements, movies, TV programs, dramas show different beautiful location while promoting their products, services or ideas, moreover, those locations crate positive impact on audience's mind. The purpose is to find out how advertisements, movies, dramas, TV programs, social media, newspapers and story books unconsciously influence people to travel around towards a destination. For the purpose of data collection 200 respondents were surveyed with a motive to understand the reason for choosing a destination. And the enthusiasm behind their belief on different medium of communication and entertainment for receiving related information was focused. These finding imply that place placement influences Bangladeshi travelers to set a destination for traveling.

Keyword: Place placement, Destination Branding, Tourism, Bangladesh.

I. INTRODUCTION

To represent any product or service, advertiser show many related and unrelated factors throughout different forms of advertisement. Moreover, Audience sometimes receives the message in different way such as a television commercial of beauty soap can make a song popular in a particular area. Sometimes audiences acquire some messages which even advertisers did not expect. However, in order to make a story to create brand value, advertisers illustrate different location and beautiful frames which may attract audience. In addition, those different locations help to find out a suitable destination to travel though the advertiser did not have intension to promote the location. Not only advertisement but also many movies, dramas, TV programs shows beautiful location to make their content more meaningful but not to promote the location.

According to business dictionary (BD), product placement is an advertising technique used by the company to promote their product thought a non-traditional marketing way such as represent a product in a movie, drama or in an event and this placements are initiated through an agreement between a product manufacturer and media company in which media company gets some benefits. The outcome of this study shows that 69% respondent witnessed the destination on advertisements, dramas, movies or TV programs before they actually visited those destinations. In recent days, promotion of place needs non-traditional approach to draw attention such as product placement. Therefore there are great potential to consider a term “place placement” which is very similar to product placement. The subject of promotion is location not product or service. Can any advertisement, movie, drama or other media tool influence to make a plan to visit a certain location? The study principally focuses on this specific question.

II. LITERATURE REVIEW

1) Product Placement Defined

Product placement can be defined as a purposeful incorporation of commercial content into noncommercial settings, that is, a product plug generated via the fusion of advertising and entertainment [7]. In product placement, the audience gets exposed to the brands and products during the natural process of the movie, television program, or content vehicle. [11]; [6]. Product placements can be a cost-effective method for reaching target customers. This might be the reason of product placements to be likely to eclipse traditional advertising messages. [12]. Product placement method varies widely by country given different cultures and regulations. Most product placements are in five product areas: transportation and parts, apparel and accessories, food and beverage, travel and leisure, and media and entertainment. [5]. Product placement can be classified according to different criteria. Product placement can be used in many audiovisual forms which nowadays affect customers. [4];[7];[14] In movies – probably the most significant utilization of place placement can be seen. It can also
be conducted in TV series and programs, novels and dramas, songs and in branded videogames.

2) Place Placement

Different medium of communication focuses on creating value by presenting attention grabbing content which influence audience in various way. According to [13], the number of US tourist to Australia increased by 20.5% annually between 1981 and 1988 for various reason including the impact of Australian movies such as The man from Snowy River and Crocodile Dundee.

It is found that the TV and movie industry have very strong impact for England’s tourism industry. According to the Associated Press of London, “tourism officials estimate that around one-fifth of the 28 million people who come to Britain each year do so after seeing the country depicted on screen. The report suggests that up to US$2.8 billion of tourism spending is linked to films shot here” [1]. Skift Trends report, “The Rise of Destination Marketing through Movies and TV” says “Tourism in New Zealand boomed following the Lord of Rings trilogy. The country launched a huge marketing campaign aimed at making the country synonymous with “middle-earth,” Air New Zealand painted its livery with Hobbit-themed images, and Hobbiton became one of the country’s most visited attractions.”

Nevertheless, marketing featured destinations are closely linked to the concept of destination branding because the featured locations can be considered as a product with brand image, brand loyalty as well as equity [5];[18]; [9]; [15].Though all movies, dramas, TV series and advertisement promote location intentionally, there is a huge scope for destination branding to apply various marketing strategies. Therefore, the term “place placement” can be used beside “product placement”.

III. METHODOLOGY

1) Measurement

The study aims is to find out destination branding through place placement through factors as movies, drama, advertisement, TV series and newspapers. A simple structured questionnaire was used to present the impact of selected factors. The reaction pattern is being illustrated with the help of diagrams and value is being converted into percentage.

2) Sample Size and Data Collection

The basic criteria for the respondent selection were frequent travelers. Total 200 respondent’s reaction pattern was collected. The sample included diversified people of different ages and profession.

3) Data analysis

Microsoft excel was used for tabulation of data and graphical presentation was utilized through pie chart and bar diagram. The percentage was calculated to measure the opinion provided on selected factors.

IV. RESULTS

Product placements can have a significant effect on recall [12]. Similarly place placement might play vital role in influencing people towards specific locations. It can also be utilized:

- To increase consumer memory and recall of the brand or product
- To bring desired change in consumers’ attitudes or overall evaluations of the brand

The findings of the study demonstrated that the characteristic of the respondents. 59% respondents were male and 41% were females. 34% respondents were married and 56% respondents get travel suggestion from friends and family. On the other hand, 26% people get travel idea from pictures which are shared on social media. However, 13% respondents are motivated by travel agency’s advertisements and respondents’ year of age consisted of 15 to 25(13%), 25 to 35(34%), 35 to 45(32%) and 45 and over (21%).

73% respondents had visited a location which they have seen on TV series, movies and advertisement, whereas, 57% respondents could recall about any location from different advertisements they had seen before. The study have found that 11% respondents travel for fun and 21% respondents travel for excitement, on the other side, for adventure and relax, 33% and 24% respondents travel respectively.

62% of respondents were influenced by movies, dramas, TV series, social media, story books and others media to choose a destination to travel in near future.
According to the study, 28% respondents have taken television commercial as very unimportant, whereas, 41% respondent have taken this as important and rest of them was neutral (figure:1). Out of 28% respondents 13% said very unimportant and out of 41% respondents 17% mentioned it as very important. In contrast, 33% respondent believed that print advertisement was unimportant factor which influence people to travel.

The study analyzed the importance of newspaper article on destination branding. It is found that 59% respondents said that the factor was important, whereas, only 18% respondents had chosen the factor as unimportant (figure: 03). In addition, 43% respondents gave importance on social media posts which influence them to travel and dramatically 74% respondents believed that story book was great impact on destination branding. Details result is provided on the following table :

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<td>Unimportant</td>
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<td>Neutral</td>
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<th>Impact of movies</th>
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The findings shows, only 20% respondents believed that impact of movies was unimportant factor; on the other hand, 58% believed that the factor was important. Moreover, only 7% respondents thought impact of movies was very unimportant although 23% believed it as very important. However, only 47% respondents gave importance on dramas and 32% believed that drama was unimportant.
V. CONCLUSION

In today’s competitive international market, the world is more and more integrated and complex. The tourists are becoming educated, experienced and well-informed about different destinations through the widespread use of information technology.

The present paper contributes to the creation of a linkage between product placement and place placement. The findings showed that movies and TV series plays a vital role to find new location to travel for tourists. A new opportunity has been found out on which destinations can be promoted. The study showed that movies, TV series and social media have great success for tourism and are most used media for product placement and “Product placement” is very effective marketing strategies to promote product. In recent days, marketer will find various innovative ways to promote a specific location, the term “place placement” will be very useful and common term. Based on the findings it can be summarizes that “Place Placement” has the potential to become a suitable term which means promotion of a specific destination through movies, TV series, drama, social media, story books and other communication media. Place placement can positively influence destination branding. The researcher can gain a fundamental knowledge about place placement and can broadly relate destination branding efforts with it to create new dimensions.

REFERENCES


SCM and Sustainability: Adjourning Incorporation in Majority Study

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Abstract: This study has pointed out chances and research agendas to assimilate sustainability issues with supply chain and processes management. Though, we find that it is still not mainstream preparation to methodically take a sustainability approach in tackling supply chain and processes management issues. In this study, we make usage of behavioral theory to explain the current lack of combination and further use of theory in real problem solving. We accomplish through abductive reasoning that the reasons for adjourning combination of sustainability in supply chain and operations management research are the conflicting nature of the task and the inherent context, which is the focus on processes rather than environmental or social problems.

Keywords: Supply chain management (SCM), sustainability; adjourment, social model, abductive reasoning

I. INTRODUCTION

There is a growing awareness of the need for sustainable growth in academe and corporate [1]. Currently, upper worldwide businesses, such as Exxon Mobil, General Electric, Hitachi, Sony, etc., put headings like ‘Sustainability and Environment’, ‘Environmental Initiatives’, ‘Environmental Activities’, or ‘Environmental Leadership’ on the front pages of their websites. Previously for more than ten years, papers in the technical works have documented the reputation of explicitly addressing sustainability issues in supply chain and processes management [2-6]. Yet, there seems to be a absence of systematic combination of the environmental and/or social component of sustainability in addressing supply chain and operations management (SCM & OM) issues. For example, [7] show that in total terms, the amount of papers that indicate the concept of sustainability in the management literature increased explosively between 1996 and 2005. However, as a proportion of total publications, these still form a tiny minority. Though, the increase in relative contribution is encouraging, we show in this paper that it cannot validate the claim that the integration of sustainability in management is routinely done, or that it is in any way a mainstream practice.

II. SUSTAINABILITY AND THE STATUS OF SUPPLY CHAIN MANAGEMENT (SCM) RESEARCH

A. Recognition of the importance of sustainability

Scholars, practitioners and policy makers agree that it is a priority to comprehend the effect of human activities on the environment. Thus, it is important to do so also within the scope of SCM & OM, because manufacturing and distribution make up a large portion of human activity, and there is a big margin for improvement [3,9]. Moreover, integrating sustainability with more traditional targets can add value to businesses and offer a modest edge [10-12], and cases that combine outstanding economic and environmental performance have been reported in the context of product recovery [13,14].

A current study [7] found that ‘consideration to the concept of sustainability is progressively found in the management literature’, by counting the appearance of the keywords ‘sustainability’ and ‘sustainable development’ in finances, business and management articles between 1990 and 2005. In that period, the frequency of appearance enlarged five-fold from 3 per 1,000 to 15 per 1,000 articles, with the growth really starting from 1996 onwards. We may conclude that the apparent reputation of sustainability issues has improved significantly since 1995.

B. Towards integrating sustainability issues with supply chain and operations management

Facing the lack of combination, researchers in the late 90s called frequently for holistic tactics, launching a discussion about the operations management research agenda [5]. For example, [6] carried out an extensive review of research on
globally aware manufacturing and product recovery and concluded there was ‘a lack of research and a lot of work’ to be done. In addition, [15] claimed that research should move beyond the incomplete role of converse logistics so that the ‘ecologic footprint of supply chains’ really could be reduced. At the same time, study on converse logistics and closed-loop supply chains intensified, with more articles showing and demonstrating the added value of recovery [14,16,17].

C. Tools and methods for analysis

Today, the literature documents a kaleidoscope of tools, methodologies and frameworks for sustainability analysis. These include tools to aid decision as the analytical hierarchy process with environmental indicators [27], system dynamics to incorporate sustainable principles in the operations’ strategy of companies [28], the ‘The Natural Step’ framework to create a vision of how companies can pursue sustainability while satisfying customer needs [29], industrial symbiosis as an alternative to classic supply-chain thinking [30], Environmental Management Systems as a tool to manage the environmental goals and performance [31,32], contingency planning for closed-loop supply chains [33], the more standard operations research tools [24,25], and other well-known quantitative and qualitative methodologies such as surveys [34] and case study research [26]. There are also other tools, developed in other fields of research that can be adapted to the operations management field, such as environmental or social life cycle assessment [35-37], ecological foot prints [38] and material flow analysis [39].

The frequency for each aspect of SCM and OM for sustainability assessment

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<td>Dynamisms</td>
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<td>Information accuracy</td>
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<td>Sufficient information</td>
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<td>Logical information</td>
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<td>Ecological foot prints</td>
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<td>Life cycle assessments</td>
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<td>Closed-loop SCM performance</td>
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<td>Alternativeness</td>
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D. Lack of holistic integration of sustainability with SCM

We would imagine that the incorporation of sustainability and supply chain management research would already have taken place, since

1. the reputation of sustainability has been documented in the literature of SCM & OM for more than a decade.

2. guidelines and research frameworks to integrate sustainability issues with SCM&OM have been established, and

3. there are multiple tools for analysis (see Section 2.3).

Yet, in a current study [40] of about 30 refereed international academic journals, the authors showed that the ties between environment and SCM & OM research is still not as strong as desired. The main exclusions are on either greening the supply chain or reverse logistics and closed-loop supply chain management. The conclusion was clear: the research on the impact of SCM & OM on the environment is tiny when compared to other topics, let alone sustainability.

III. ABDUCTIVE REASONING AND BEHAVIORAL THEORY

In the previous section, we put forward evidence of the lack of integration of sustainability in the SCM & OM literature. Despite many valuable aids (established relevance, the existence of guidelines and tools), sustainable supply chain management research is not yet mainstream. Next, we explore possible reasons for this lack of mixing. To do so, we have to pursue possible ways of explaining the evidence and for that we employ abductive reasoning and behavioral theory.

A. Abductive reasoning

Though abductive reasoning is a rather novel form of reasoning in SCM & OM research (when compared with deductive or inductive reasoning), abductive reasoning can be traced back to Aristotle [42]. Abductive reasoning involves pursuing a variety of potential reasons to explain the evidence (by matching it with additional theory—in this case we will use behavioral theory). In the end, some reasons will be more compelling than others, i.e., some reasons will ‘abduct’ others.

Most readers are aware with inductive (from observations to theory) or deductive (testing theory from pre-determined hypothesis) research. Avoiding unnecessary philosophical discussions, which are outside the scope of this paper, we highlight the differences between those two approaches and abductive reasoning. In [43], three individual dimensions are proposed: departing point, aim, and the way conclusions are drawn. Table 3 characterizes these for each of the three approaches.

Figure 1. The conceptual model for Abductive process

B. Behavioral theory

As stated before, despite many respected aids founding the significance of sustainability and putting forward frameworks and research agendas, sustainability is not yet combined in most supply chain management research. Therefore, there is a gap between intent and behavior, to which behavioral theory can offer valuable insights.

The procedure of altering purpose into behavior has been modeled by [44], and is portrayed in Figure 2. The intermediary or second step in the process is to convert the meaning into a plan (referred to in interactive sciences correspondingly as ‘goal intention’ and ‘implementation intention’). There are
thus two transmogrifications: from an aim to a plan and then from a plan to behavior in Figure 2.

Figure 2: From interaction to behavior mediator and moderators

IV. THE DOMINATING REASONS FOR PROCRASTINATION

In the earlier section, by creation use of behavioral theory, we have recognized six factors, potentially influencing the process of procrastination. Though, all the issues are a priori key to the procedure of renovating a plan into action, let us have a closer reflect which factors may be the foremost ones.

V. DISCUSSION

The importance of assimilating sustainability issues in SCM & OM research has been recognized for more than a decade and many researchers have produced guidelines, frameworks and research agendas classifying crucial topics. However, we have shown through recent surveys of academic literature [7,40] and our own research that typical addition has not yet occurred. In this paper, we examined the reasons why mainstream incorporation of sustainability is still lacking to feed the discussion on how to overcome it.

Through abductive reasoning we concluded that the reasons for procrastinating are the conflicting nature of the task and the inherent context, that is, the focus is integrally on processes and not on the environmental or social issues. Addressing sustainability means that analysis is multi-objective and multi-disciplinary. Both are inefficient for different reasons. Multi-objective studies are more multifaceted and often no clear-cut conclusions can be made, since decisions be contingent on the decision-maker’s preferences regarding the weights to be assigned to the three dimensions of sustainability. Consequently, no simple formulas or rules of thumb can be given, which may be a barrier for distribution of the results. At the same time, multidisciplinary research is often hard to publish as journals typically specify within only one of the three dimensions. It may be imperative that reporting boards identify the need for multi-objective and multi-disciplinary research and that referees are instructed to pay special attention to sustainability impressions. Of course, this may be difficult if specific knowledge on sustainability issues is lacking. The latter will need to be resolved through

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Abstract - A portfolio is considered as well-diversified by the performance of the investments. In any investment, the performance of stock is clearly associated with risk and return. In this modern era of investment, the capital asset pricing model is an internationally acknowledged model that represents the relation between systematic risk and return of a particular stock. This paper emphasizes on the connection between the CAPM model and other investment theories. While some theories accept CAPM model and collaborate with it, a few financial theories deny agreeing. Some theories also criticize the CAPM model. This paper is mainly a theoretical analysis of CAPM model and a critical literature review in regards to CAPM where every perspective of this model are attempted to be highlighted. It seeks the attention of the readers (both financial researchers and non-researchers) to get a clear idea about CAPM model. Also investors can comprehend why they apply this model for any sort of stock investment.

Keywords – CAPM, model, theory, portfolio, systematic risk.

LITERATURE REVIEW:

Modern Portfolio Theory

Modern Portfolio theory which has been the starting point for the development of the ‘Asset Pricing Theory’ has been developed by Harry Markowitz (1950-1960) when he was doing his PhD under the great monetarist, Milton Friedman, a disciple of Fredrick Hayek, the great Austrian Economist in the University of Chicago. There are a number of properties of the theory developed by Markowitz. Firstly, it is a theory of portfolio selection which emphasizes diversification in order to achieve twin goals of ‘risk minimization’ and ‘return maximization’. This aspect is generally called as mean-variance analysis. Secondly, the more the securities are in a portfolio, the less are the risk. Thirdly, overall risk of a portfolio reduces as a security with a lower correlation are added.Fourthly, the risks of a portfolio are divided in two categories. One is the systematic risk while other is the unsystematic risk. Of these two types of risks, the unsystematic or the firm specific risk can be eliminated through diversification while the systematic risk remains intact.

Capital Asset Pricing Model (CAPM)

Capital Asset pricing model, commonly referred to as CAPM, has been developed by Sharpe (1960-1970), Lintner (1960-1970) and Black (1970-1980) which they derived from the mean-variance analysis of the Markowitz. It expresses the relationship between the return with the systematic risk of the portfolio. While developing this theory, the researchers made a number of assumptions. These are- investors can lend and borrow at the prevailing risk free rate, they are averse to risk, they build their portfolio over their evaluation of the risk and return in a single period, there are no taxes, the transaction cost is non-existent, the views of the investors are homogenous regarding the variables of an asset including the return and risk and Investors want to maximize their return. The Security market line expresses the relationship between the systematic risk which is measured by beta and the expected return. Any security over the line is undervalued while any security under the line is referred to as overvalued.

The formula, as suggested by the CAPM, is

\[ E(R_t) = R_f + \beta_t(R_m - R_f) \]

Here, \( E(R_t) \) is the expected return on Asset, \( R_f \) is the risk free rate, \( \beta_t \) is the portfolio beta, \( R_m \) is the market return.

So, the model reflects investors are compensated for systematic or non-diversifiable risk only because the diversifiable risk can be eliminated by the use of diversification.

Facts in support of CAPM

CAPM has gained popularity for a number of years after its development. A number of papers of the initial periods supported its empirical validity. Much of the popularity of CAPM comes from the fact that it has a sound intuition behind it.
Criticisms of CAPM

Although there is clear intuition behind the appeal of CAPM as an asset pricing tools, it continually lost its appeal while tested empirically. Berk (1990-2000) is of the opinion that CAPM does not withstand reality due to the flaws of the model itself or the method by which it is applied while tested empirically. According to Fama and French (1990-2000), CAPM’s unrealistic assumptions such as the ability to borrow and lend at the risk free rate leads this model into criticism. In addition, the beta that CAPM uses fails to capture the return sufficiently due to the existence of the different market anomalies such as the size effect or the Value effect.

Anomalies that called the revision of theories:

Anomalies are such empirical fact that cannot be explained by the existing version of theories. Schwert (2000-2005) is of the opinion that -a market anomaly is an empirical finding that cannot be explained by the available and maintained theories within the asset-pricing area of study. The indications of the anomalies are such that the asset pricing theories are not properly formulated or the market are not efficient in the strictest sense. The corollary of the second part of the argument of the previous statement is that the theories which are based on the critical assumption that market is efficient in pricing are faulty. The anomaly which want to qualify as an indicator to the inefficiency of the market must qualify a number of characteristics. Firstly, it will allow the investors to trade profitably on that anomaly. Secondly, the profitability must be significant. The factor that work against these are the facts that when the investors trading in the market can detect these anomalies, they start to trade profitably on these anomalies with the effect that these anomalies become non-existent (Rustam & Nicklas, 2010). This factor has the effect to restore efficiency in the market.

Anomaly #1: Size effect

Size, commonly measured by the market capitalization, explains the average return of stocks which earlier asset pricing theories including CAPM failed to take into account. The trend of this size effect had not been uniform over the years and there was much volatility associated with it (Banz, 1981). The findings of Berk (1990-2000) are that market capitalization of a firm has the ability to explain the abnormal return which should be included in the asset pricing theories so that the unexplained portion of return by CAPM can be easily captured in the model. The essence of this anomaly is that small firm, on an average, provide better return compared to large firm which any asset pricing model must take into account.

Anomaly #2: Book Value to market Value effect

Fama and French (1990-2000) find that the BV-MV ratio has a strong explanatory power to explain return on stocks. Firm which has a high Book Value to Market Value ratio consistently beats the firm with a low Book Value to Market Value ratio. One possible cause is that firm with high BV-MV is riskier compared to the firm with low BV-MV and hence it needs to compensate the extra risk of the investors by paying a higher return. One indicator of more riskiness of the firms with high BV-MV is that their historical performance had been poor. The findings of Lakonishok, Shleifer and Vishny (1990-2000) is that investors generally overrate the information they have compared to the underlying risk of the security. In this way, they ascribe greater value to the company with better historical performance and a lower value to the stock with bad historical performance with the effect of making them value stocks.

Anomaly #3: Momentum Effect

When stocks with the label of a past winner or having a higher historical return continues to generate the same in later period while stock with the label of past loser or having a poor historical return continues to perform bad, the phenomenon is said to be momentum effect Jegadeesh (1990). Jegadeesh and Titman (1990-2000) looked for the momentum effect over a horizon of 3 to 12 months and found that past winners has beaten the past losers in terms of return. They took it as a proof of their theory of the presence of the momentum effect in the market.

Fama and French (1993) Three-factor Model

The failure of CAPM to capture the size effect and the value effect, along with other market anomalies, leads other researchers to develop more robust and extensive Pricing Models. The jargon ‘market anomalies’ took birth due to the fact that CAPM can not recognize them. Due to their findings of the fact that beta fails to completely explain the cross-sectional variations of stock’s return, Fama and French took an end to test whether the size effect, book-to-market value effect and Earnings-price ratio can explain the cross sectional expected return of stocks. The findings were that value effect and the size effect explain the cross sectional rate of return. However, as the BV/MV and the E/P ratio was related, they eliminated the later ratio from the model due to the redundancy. Further, it was...
discovered that there was less than significant relationship between a stocks return and its beta. The later story was to develop a more robust model than CAPM which will be able to capture the cross sectional return properly. The model they proposed includes market premium, size premium and the value premium. Market premium took its place in the model because it was observed that stock return consistently outperformed one month Treasury bill rate. The other two factors are the market anomalies that CAPM failed to capture.

The resulting of Fama-French three factor model is:
\[ E(R_{it}) = R_{ft} + \beta_i(R_{mt} - R_{ft}) + \beta_s(SMB) + \beta_h(HML) \]
Here, \( E(R_{it}) \) is the expected return on Asset, \( R_{ft} \) is the risk free rate, \( \beta_i \) is the portfolio beta, \( R_{mt} \) is the market return, \( (R_{mt} - R_{ft}) \) is the market risk premium, \( SMB \) is the size premium, \( HML \) is the value premium, \( Bi \) is the sensitivity to the market risk premium, \( Bs \) is the sensitivity to the size premium, \( Bh \) is the sensitivity to the value premium.

**Facts in support of FFM**
The finding of Connor and Sehgal (2000-2005) is that FFM explains the variations of return well compared to the CAPM in the Indian Stock Market.

**Criticisms of FFM**
The finding of Misirli and Alper (2008-2012) is that CAPM explains cross sectional return well compared to FFM in the Istanbul Stock Exchange, Turkey.

**Carhart’s Four factor Model**
The 3 factor model that has been proposed by Fama and French was performing well compared to CAPM. However, it failed to capture a specific phenomenon. The relationship between stocks that are short term winners and their power to generate abnormal returns compared to short run losers stocks could not be captured in the existing model of Fama and French. This particular phenomenon of stocks that generate handsome return tends to continue the trend is called the momentum factor. To capture this aspect, the existing FFM needed a revision. Carhart (1995-2000) took the task of modifying the existing Fama French three factor model so that the effect of short term winner vs short term gainer can be captured. He did this by adding one factor which will capture the momentum factor.

The new equation takes the form of:
\[ E(R_{it}) = R_{ft} + \beta_i(R_{mt} - R_{ft}) + \beta_s(SMB) + \beta_h(HML) + \beta_w(WML) \]
Here, \( E(R_{it}) \) is the expected return on Asset

RFt is the risk free rate, Bit is the portfolio beta, RMt is the market return, \( (R_{mt} - R_{ft}) \) is the market risk premium, \( SMB \) is the size premium, \( HML \) is the value premium, \( WML \) is the momentum effect premium, \( Bi \) is the sensitivity to the market risk premium, \( Bs \) is the sensitivity to the size premium, \( Bh \) is the sensitivity to the value premium, \( Bw \) is sensitivity to momentum effect premium.

**Facts in support of Four Factor Model**
As the model greatly reduces the average pricing errors of Fama French model as well as Capital Asset pricing Model, Carhart (1995-2000) is of the opinion that this model explains the expected return in a superior way.

**Criticisms of Four Factor Model**
Avramov and Chordia (2005-2010) concludes that in the short run, the inclusion of momentum factor in the model helps little to explain the expected return on stocks in NYSE and NASDAQ.

**Conclusion**
The capital asset pricing model is by no means a faultless theory. Though this is not constant, the essence of CAPM is correct. It provides a usable measure of risk that assists investors to determine what percentage of return they deserve for putting their money at a certain level of risk. The interpretation of FF study provides investor a significant implication that the size of firm as well as some financial ratios need to be taken into consideration when evaluating whether or not a business is worth to invest.
REFERENCES


Supplier- Buyer relationships: A Study on Bangladeshi Contract Clothing manufactures

S. Hasan¹, M. R. Hoque¹, A. A. Mohib¹
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Paper# ICBM-17-320

Abstract – The lack of compliance with international health and safety regulations in some Bangladeshi contract clothing manufacturers puts the continuation of their relationships with international customers at risk. A lack of compliance affects critical aspects of the international customers business such as corporate social responsibility and branding. In the circumstances, the international customers are introducing new practices in regards to governing and managing such relationships through implementation of consortia such as Alliance and Accord. This research conducted a sector based case study on the Bangladesh contract clothing manufacturing industry to analyze whether such relationships can be sustained and evolved through transitions in the level of collaboration. The results of this study indicates that such transition may require structural changes in business functions, change in the existing cost models, re-engineering of processes; in addition to changes in some governance parameters such as compliance protocol and visibility.

Keywords – Supply chain, Bangladeshi clothing industry, compliance, collaboration, governance

I. INTRODUCTION

A supply chain relationship can sometimes go through turbulent and uncertain times. At these times firms are in risk of losing important business partners. In the era of globalization, firms are more or less part of a global supply network [6]. They have to formulate strategies regarding suppliers and customers who are geographically distant to address challenges as well as to take advantage of underlying opportunities [16]. This can lead to a situation where supply chain relationships are at risk of termination or in a need of change if they are to be sustainable.

One typical global supply chain relationship that is subject to increasing uncertainties is that between international clothing retailers, brand designers and their Bangladeshi contract manufacturers. These international customers who source clothing from Bangladesh are expressing concerns about work place safety and other situations surrounding worker rights in the factories of the Bangladesh clothing manufacturing companies [7] [15], [20]. Images such as the ones in Figure 1 showing a victim in a Bangladeshi factory collapse were used extensively by the media and had an impact on the psyche of western shoppers.

The international clothing customers are increasingly facing the challenge of meeting increasing Corporate Social responsibility (CSR) standards and brand reputation problems due to working conditions in factories of their suppliers in Bangladesh [16]. The problem is compounded due to the rise of ethical clothing brands [10].

Figure 1. Victims of Bangladeshi factory disaster [19]

A. Response of the international clothing buyers

The clothing industry is expected to undergo major changes. Initiatives by international clothing buyers to make their sourcing from Bangladesh more ethical include the Accord on Fire and Building Safety and the Alliance for Bangladesh Workers’ Safety. Accord is an initiative of 80 clothing brands and retailers predominantly from Europe; in addition to global unions, such as IndustriALL Global Union and UNI Global Union. Alliance is another similar initiative but supported by predominantly North American customers.

Initiatives like the Alliance and the Accord are to create quasi-industry standards regarding work place safety, worker empowerment, information sharing between stakeholders and financial schemes for remedial action [1]-[5].

B. Level of collaboration supplier-buyer relationship

One way to characterize a supply chain relationship is by the nature of interaction between the companies. The interaction between the companies can be deep rooted and collaborative or it can be distant such as at arms-length [14], [12]. Given the uncertainties and resulting problems that supply chain relationships are faced with, this research focused on ways to make relationships more sustainable. This research examines the ways to sustain and evolve a supply chain relationship through development of collaboration, especially in the modes of governance of the relationship, as well as through changes in the nature of these collaborations. Supply chain collaboration can be categorized as three types [9]-
Operational Collaboration: where supply chain relationships depend upon sharing information in an effort to improve connectivity and joint performance by providing data and critical information necessary for operation.

Tactical Collaboration: where traditional and existing processes in the supply chain relationship are modified to enhance the way in which essential functions are performed.

Strategic Collaboration: where operations and functions are structured specifically to achieve business goals. This can require restructuring organizations, where various business functions are re-organized and processes re-engineered.

C. Governing Supply Chain relationships

A relevant term in the context of International Customer-Bangladeshi Contract Manufacturer relationship is governance. The structure of supply chain relationships including the level of collaboration or the dynamic interplay is often facilitated by appropriate governance [11]. Governance can be defined as “the ability or the power of a supply chain actor to set parameters for governing the supply chain” [13]. Therefore, it is paramount to also investigate the potential changes in the governance structure of International customer-Contract Manufacturer relationship, when analyzing transition in the level of collaboration.

II. METHODOLOGY

This research pursued a sector based case study on the Bangladeshi clothing manufacturing sector which was qualitative in nature. The primary research question that this study investigated is “What is the scope of a potential collaborative supplier-buyer relationship in the Bangladeshi clothing manufacturing sector in light of Accord and Alliance”. Case study approach is advisable when investigating contemporary issues and “how” and ’What” related research questions [18]. Multiple semi-structured interviews of different stakeholders in the Bangladeshi clothing industry were conducted (Table 1). The interviewees were senior management and had strategic knowledge regarding the industry sector. All the interviews had the agenda to acquire insight regarding the following areas- 1) Potential for transition in the level of collaboration (effect of Accord and Alliance) 2) Structural changes in the relationships in terms of functions and processes 3) Changes in governance.

TABLE 1
INTerview DETAILS

<table>
<thead>
<tr>
<th>Interviewee details</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board director to an international customer’s consortium</td>
<td>I1</td>
</tr>
<tr>
<td>International consultant to the industry</td>
<td>I2</td>
</tr>
<tr>
<td>Supply chain manager (International buyer)</td>
<td>I3</td>
</tr>
<tr>
<td>CEO and owner of a Bangladeshi contract manufacturing firm</td>
<td>I4</td>
</tr>
<tr>
<td>Bangladesh i contract manufacturing firm (owner: 2)</td>
<td>I5</td>
</tr>
</tbody>
</table>

III. RESULTS

The results of the interviewees reveals that most of the respondents predicts that it is possible for many of the current buyer-contract manufacturer relationship to transit to a more strategic relationship in the context of the contract manufacturer. However, interviewees also feel that many of the contract manufacturers may not be able to comply with necessary changes and may see their relationships terminated. Hence, a consolidation of the supplier base in the industry sector can be predicted.

The next area of interest was regarding changes in the structure of the relationship required for a transition in the level of collaboration; directly or indirectly enforced by Alliance and Accord initiatives. Table 2 identifies the major activity and process level changes and response of the interviewees.

TABLE 2
CHANGES TO ACTIVITIES AND PROCESSES

<table>
<thead>
<tr>
<th>Changes in activities</th>
<th>I1</th>
<th>I2</th>
<th>I3</th>
<th>I4</th>
<th>I5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business model and strategic management activities</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Management &amp; HR Management related activities</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Operation and Procurement related activities</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The next area of interest of this research was regarding potential changes in governance parameters. The interviewees further identified some potentially new parameters that are likely to be introduced if a transition in the level of collaboration takes place (Table 3).

TABLE 3
NEW PARAMETERS FOR GOVERNANCE

<table>
<thead>
<tr>
<th>Governance Parameters</th>
<th>I1</th>
<th>I2</th>
<th>I3</th>
<th>I4</th>
<th>I5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost/financial model</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry standard</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Compliance</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Visibility</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

IV. DISCUSSION

The future circumstances may require many of the contract manufacturer processes to be reengineered and after changes such relationships can be considered as strategic, from the perspective of the contract manufacturers. The definition of collaboration categories by Bowersox [9] is again used as a reference point.

A. Business model and strategic management activities
The changes enforced by the initiatives such as Accord and Alliance will potentially induce shifts in the business model of the contract manufacturers. It is likely that the business model of contract manufacturers will not only focus on driving cost down, acquiring maximum orders and maintaining acceptable quality; but also consider “how the work is done or the way a company is run”. Hence, contract manufacturers may need to focus on long term strategies instead of valuing just short and medium term plans. The strategic management activities of contract manufacturers may have to change in order to support the new business model. The strategic management activities are supposedly required to support product strategy, making choices regarding sales, acquisitions and business partners. In both initiatives (Accord and Alliance), the international customers may potentially engage in financial agreements with the contract manufacturers regarding remedial measures. Such financial engagements may involve joint investments, direct payment for improvements, low cost loans and combination of different mechanisms. When contract manufacturers engage in such categories of financial relationships with international customers, there will be certain terms, conditions and potential contractual restrictions. This may heavily affect the planning related processes of contract manufacturers including financial planning, organizational planning and cost modeling. This will potentially lead to reengineering and restructuring of the planning process and activities leading to strategic management of the contract manufacturers.

B. General Management & HR Management related activities

Activities associated with general management of an organization include compliance, training and human resources.

**Compliance processes related to operation:** The key sub-process here that is subjected to extensive change and re-engineering is ensuring work place safety. One of the key objectives of the Accord and Alliance initiative is to establish a standard for inspection and acceptable safety conditions, in factories operated by the contract manufacturers. Together the Accord and Alliance, represents the majority of international customers sourcing from Bangladesh. Therefore, contract manufacturers potentially will not have a choice but to comply with recommendations proposed by Accord and Alliance. Consequently the ways to ensure work place safety will be significantly modified in the near future.

**Training processes:** The training process of contract manufacturers involves developing training protocol or providing training. The process is set to undergo extensive changes as per the Accord and Alliance initiatives. The initiatives are set to develop a country wide training program including curriculum, materials and protocols.

**Human resource development and management related processes:** Some of these sub-processes that are likely to be affected by the Accord and Alliance initiatives are 1) Ensure workers fundamental rights 2) Ensure regular payment of wages 3) Worker employment. One of the key stated objectives of the Accord and Alliance initiatives is to empower workers.

**Operation and Procurement related activities:** These are activities related to production and sourcing. The processes are subjected to change here are 1) Production plan 2) Capacity Allocation 3) Sub-contracting.

In the case of both the initiatives, the international customers emphasize establishing greater visibility on supply chain operations of contract manufacturers. This is in order to control un-authorized sub-contracting by contract manufacturers. However, in order to achieve such objectives the international customers would need to be aware of operation related details of contract manufacturers and would potentially affect decisions and processes related to production plan, capacity allocation and sub-contracting.

C. Summary of activity and process changes

The level of collaboration in typical relationships between international customers and Bangladeshi contract manufacturers is likely to transit from tactical to strategic from the perspective of the contract manufacturers. In strategic collaboration various business functions may be required to be re-organised/ restructured and processes re-engineered. This can potentially happen in the Bangladeshi clothing industry with the restructuring of General & HR Management and Operation related functions through engineering/re-engineering of compliance, general management and other critical operation (production plan, capacity allocation, sub-contracting) related processes.

Strategic collaboration further usually means that, two or more companies will integrate human, financial, and/or technical resources to create a new, more efficient, effective, or relevant business model. In this case, the strategic management activities pertaining to financial and organizational planning of contract manufacturers is likely to undergo a change in order to support the new business model influenced by international customers. Some of the symptoms of strategic collaboration include: having shared cost models, mergers; forming an alliance in the supply chain where supply chain actors utilize each other’s technical expertise; and taking ownership of the supply chain through investments. The symptoms of a strategic collaboration level are there in the potential revamped relationship between international customers and Bangladeshi contract manufacturers. For example, reengineering the planning process to support the new business model and ownership of the supply chain through investment by international customers will radically change supply chain relationships. Figure 2 illustrates the reasons that these future relationships can be considered as strategic.
In the case of the relationship between international customers and Bangladeshi clothing manufacturers, the probable transition in the level of collaboration from tactical to strategic is to be enforced by international customers. They have the necessary power to set the required parameters for governance in order to enforce the transition.

At the current level of collaboration (tactical), international customers have the power to set parameters such as ‘specification and required quality’, ‘restriction in sourcing’ whereas it shares power with contract manufacturers regarding ‘cost’, ‘time-frame’ and ‘volume’. The analysis of a possible transition from tactical to strategic reveals the requirement to introduce new parameters for governance in such supply chain relationships (see Figure 3).

**Cost/financial model:** The typical relationship between international customers and contract manufacturers will be no longer only based on the cost of the product. International customers are likely to make financial investments to materialize the necessary remedial changes in the factories of contract manufacturers. Therefore, “cost/financial” model can be thought of as a new parameter that is to be set by international customers with contract manufacturers having room to negotiate.

**Industry standard:** Since, the Accord and Alliance initiatives represent almost all the major international customers, the contract manufacturers have no option but to comply with the industry standard set for training and worker empowerment. Therefore, by establishing an understanding between competitors, international customers are setting the parameter “industry standard” to be followed by Bangladeshi manufacturers.

**Compliance:** The compliance parameter (which existed also in tactical level collaboration scenario) is set by the international customers and will be more strictly enforced as the collaboration level shifts to strategic. In the changed scenario (strategic collaboration level), the compliance parameter (work place safety) is standardized and unless a contract manufacturer fulfils the requirements set, it will be potentially left out of the supply chain.

**Visibility:** This is another parameter that is to be newly introduced. The international customers in order to check unauthorized sub-contracting by contract manufacturers are planning to establish more transparency over the operation and procurement activities of the latter. The international customers are able to set this parameter due to financial investments and potential understanding between competitors.

**V. CONCLUSION**

This paper concludes that in the scenario where a contract manufacturer can make the transition to a more strategic collaboration level, it has to focus on long term strategies. The strategic management activities of the contract manufacturer may have to change in order to support the new business model. There may be financial investment on offer from the customer to undertake remedial actions in factories of the contract manufacturers. This may heavily affect the planning processes of the contract manufacturer including financial planning, organizational planning and cost modeling leading to reengineering and restructuring of the planning process and activities leading to strategic management.

The contract manufacturers have to embrace for some key additions to the parameter for governance such as maintaining new industry standards and facilitating visibility in operation. This research also unearthed some important questions (discussed below) that may be very important to investigate in the forthcoming future.
A. What will happen to contract manufactures that cannot make the transition in collaboration?

A significant number of the contract manufacturing firms have been set up to take advantage of the recent boom that the Bangladeshi contract clothing manufacturing industry has seen. These types of contract manufacturers are unlikely to meet the compliance requirements regarding work place safety. The buildings that these contract manufacturers co-share as factories may require major renovations and remedial work to comply with the work place safety requirements set by the Accord and Alliance initiatives (which may not be feasible). To compound the problem sub-contracting opportunity is likely to reduce due to greater visibility enforced by the consolidation of contract clothing manufacturing market in Bangladesh. In such scenario it is important to research the future of such businesses since livelihood of hundreds of thousands peoples directly and indirectly associated with these firms would be in jeopardy.

B. Are the contract manufacturing firms in a position to accept the changes necessary for transition in the level of collaboration?

There are firms that can potentially make the transition from tactical to strategic. However, a shift in the collaboration level from tactical to strategic will have consequences for this type of contract manufacturers. Some of the major changes may include significant investments in facilities; improving in the corporate structure and culture; restructuring the organization; greater visibility; increased influence of buyers; need for additional training for employees; and empowerment of workers among others. Hence it is important to critically evaluate the nature of financial incentives/investment, terms and times span of such agreements on the offer, if any. The more pertaining question to ask is whether contract manufacturing firms are in a position to accept those changes?

REFERENCES

Understanding the consumer behavior and shopping preferences in relation to superstores in Bangladesh

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¹School of Business, University of Liberal Arts Bangladesh.

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ABSTRACT
This research explores the changes in trend of the buying behavior and shopping preferences of consumers for the superstores of Bangladesh. The study had a mixed method approach where primary data, collected using a semi structured questionnaire in face to face survey along with in-depth interviews, were explored to reveal consumer preferences. A total of 172 completed questionnaires were accepted for analysis. The findings of this study show that the consumers’ decision to purchase from a superstore or the wet market is affected by several factors including: product price, perceived quality of products, store location, hygiene, product availability, service experience and so on. Data from this study also indicates that in choosing between superstores the Bangladeshi consumers rely more on previous experiences, personal references, brand image and shopping convenience.

Keywords - Superstores, Consumer Behavior, Shopping preferences

I. INTRODUCTION
Superstores, Super markets and hyperstores have redefined shopping experiences and the retail industry worldwide. Consumers in Bangladesh, however have been slow to follow the same path. Despite taking a longer time than other countries, recent years have displayed changes in consumer behavior and an increase in the acceptance of the superstore concept. Industry insiders attribute this increase in acceptance to increase in the number of outlets and the superstores having learnt from experience and solving their initial issues over supply, inventory, quality and pricing issues making them attract more consumers. This study seeks to understand this growth in the perspective of consumers.

II. METHODOLOGY
Data was collected using a semi-structured questionnaire which were given to 200 respondents out of which data from 172 questionnaires were scrutinized and deemed fit for analysis. 15 undergraduate students were rigorously trained on all the questions and appropriate survey tools and techniques. Each of those students surveyed around 12 target respondents within a period of 15 days across major residential areas of Dhaka. Around 57% of the respondents were male and 43% were female falling between the ages of 18 to 64 years. The data set was analyzed using SPSS 24.0. The researchers actively supervised the data input and cleansing process. The questionnaire included questions about the respondents’ demographic information and their shopping behaviors designed to achieve the research objective by organizing them in to statements and getting respondent opinion using a five point Likert scale with the answers ranging from Strongly Disagree (1) to Strongly Agree (5). Data on store choice attributes and factors affecting purchase were collected and measured to reveal respondents’ preferences. Responses were further analyzed using socio-demographic variables to find variations in behavior in different segments. Correlation analysis have been used to measure the perception and attitudes regarding the various aspects of shopping in superstores with the dependent variables of age, income and gender.

III. LITERATURE REVIEW
Agora was the first retail super store to start the superstore concept in Bangladesh around 2001 and since then Bangladesh has seen the emergence of several brands of retail chains namely Nandan, PQS, Shwapno, Meenabazar amongst others. The growth of retail industry was slower in Bangladesh compared to the neighboring countries of Srilanka and Pakistan in the initial years however the trend is changing in the recent years because of the combined effect of several social and demographic factors. Industry experts claim that the steady rise of household disposable income, nuclear families, more women in the workforce coupled with increased consumer awareness about quality standards have led to a rise in consumers’ acceptance of retail chain stores. As the time pressured and fast paced millennial generation start families and take charge of households, the demand for hassle-free and one stop shopping destinations are on the rise. (LightCastleBD, 2015)

According to Reutterer and Teller (2009), customers’ selection of the competing stores might observe a significant difference depending on the kind of shopping trip planned. Another study shows that in the developed world weekly trips to hypermarkets has been considered as a recognized attribute of life (Roberts, 2005; Garb, 2007; Acatrinei, 2012).
Studies have identified the most important reasons for choosing a particular store and cite a variety of reasons ranging from convenient location, variety/assortment, low/good prices, familiarity, purchase experience, manufacturer brand image, store image, friendly service, cleanliness, fast service/checkout, to best/good value (Seiders and Tigert, 2000, Aurier and Lanauze, 2011).

However, amongst all these positive indicators for superstores a recent study by Nielsen finds some contradictory trends. This study conducted late in 2016 conclude that consumer shopping behaviors disprove the dominance of giant retail chain stores because even though they account for 51% of global sales, smaller channels like drug stores and convenience stores are seeing growth in sales up to eight times as fast their larger counterparts. Today’s busy consumers are making more frequent trips for fresh products and choosing smaller easier-to-navigate stores with focused product selections over the sprawling mega stores. (Nielsen, 2016)

The above findings are contradicted by another recent study which states that India’s retail market is expected to double to $1 trillion by 2020 from $600 billion in 2015 driven by income growth, urbanization and attitudinal shifts. It states that modern retail trade, that is supermarkets, hypermarkets and other organized retail outlets will grow twice as fast at 20% per annum (Boston Consulting Group and Retailers Association of India, 2015). This tremendous expectations are backed by another that this growth of modern retailing in India is very organic and brought on by rising income leading to rising consumption. Consumers here are moving towards modern retailer because they seek more comfortable shopping experience, new categories, wide variety of brands under a single roof, attractive prices and promotional deals. (The Business Line, 2015)

IV. RESULTS

IV.I Demographic Analysis
The data set used for this study contained 172 completed questionnaires of which 98 (57%) were male and 74 (43%). Table 1 gives a summary of the demographic profile of the respondents.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male- 57% ; Female- 43%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18-24 years- 23.8% ; 46-55 years- 17.4%</td>
</tr>
<tr>
<td></td>
<td>25-35 years- 26.7% ; Above 55 years- 5.8%</td>
</tr>
<tr>
<td></td>
<td>36-45 years- 26.2%</td>
</tr>
<tr>
<td>Education</td>
<td>Upto Higher Secondary Certificate – 31% ;</td>
</tr>
<tr>
<td></td>
<td>Undergraduate / Honors – 44%</td>
</tr>
<tr>
<td></td>
<td>Masters &amp; above – 25%</td>
</tr>
<tr>
<td>Income</td>
<td>Below BDT 20,000 – 27.3%</td>
</tr>
<tr>
<td></td>
<td>BDT 20,000 – BDT 49,000 - 43.6%</td>
</tr>
<tr>
<td></td>
<td>BDT 50,000 – 100,000- 19.8%</td>
</tr>
<tr>
<td></td>
<td>More than 100,000 – 14%</td>
</tr>
<tr>
<td>Profession</td>
<td>Service Holder - 24.4%</td>
</tr>
<tr>
<td></td>
<td>Homemaker - 23.8%</td>
</tr>
<tr>
<td></td>
<td>Business owner - 19.8%</td>
</tr>
<tr>
<td></td>
<td>Student -29.1%</td>
</tr>
</tbody>
</table>

Table 1 Demographic Information

IV.II Shopping Behavior
Since the survey prerequisite were people who frequented the superstores for their grocery shopping, 100% of the respondents went to superstores to fulfill their grocery shopping needs however 21% preferred a combination of superstores and traditional wet markets and did not rely completely on superstores just yet.

More women (24%) then men (18%) went to wet markets as well as superstores to do their groceries. Consumers who still went to wet markets reasoned that when it came to product categories such as vegetables, wet markets still offered fresher products (47%) and better prices (39%).
As displayed in the chart above quality of goods (95%) and price (92%) were the most important attributes that affected consumers’ retailer choice. Product availability (88%), store location (86%) and service quality (83%) also received high levels of importance. Even though the superstores extensively promote various offers and discounts to lure customers in to their stores only about half the respondents cited this as an important attribute in choosing retailers.

IV. III Attitudes towards shopping in superstores.

Around 76% of the respondents agreed that when they go for shopping in superstores they often end up buying more than they planned to. However, only 16% said that they visit superstores to pass time or for recreation. This indicates that even though tendency toward impulsive buying is high, the average Bangladeshi customer would not step in to the store without proper reason. Even though freshness of products came as a top reason for going to wet markets among the respondents who go to both superstores and wet markets but only 51% of the respondents agreed that wet markets offer fresher fruits and vegetables. Of these people 75% preferred superstores because of cleaner and less chaotic shopping environment. 88% of the respondents in the 18-24 years and 85% of those whose income is below BDT 20,000 also preferred superstores because of cleaner and less chaotic shopping environment. 60% (103 people) of the respondents believed that superstores overcharge but interestingly amongst them 76% still prefer to go to superstores because the prices are fixed and they do not have to take the hassle of bargaining. This liking for fixed price and aversion for bargaining is predominant amongst the 18-30 age group at 84%. 79% of the respondents agreed that they prefer superstores because they can save time by finding everything under one roof. This was especially strongly reflected amongst the age band of 18-30 years. Despite the recent promotional drives by most superstores on product quality and safety standards such as products being formalin free and organic only about 56% believe that products here are safer and chemical / formalin free. Lastly, a large section of the respondents, about 74% preferred superstores because of the availability of renowned imported brands.

Overall the data indicates a strong relation between the respondents’ area of residence and store choice. Most often the respondent pick the outlets closest to their residence but in a few cases they also choose outlets that are closest to their workplace. So outlet location is of more importance than the store brand. Agora (29%), Meenabazar (34%) and Shwapno (37%) having the highest number of outlets in Dhaka hence came as top choices for the respondents.

Shwapno and Agora scored 92% on product availability but Meenabazar lagged behind at 81%. Even though Shwapno was the pioneer in promoting the unique selling proposition (USP) of selling formalin and chemical free products but only 57% of its shoppers believes in this USP, Shwapno also scores lowest on the freshness of its perishable products. Agora led in both this criteria with 74% agreeing that its products were formalin free and its perishable products were fresh. On packaged goods however the scenario came out a bit different with Agora scoring the lowest with 60% shoppers agreeing that it doesn’t keep expired or spilt products. Meenabazar and Shwapno came neck to neck at 69% and 70% respectively. On pricing, Shwapno clearly had a better image at 76% shoppers saying it gives good prices while Agora and Meenabazar followed at 64% & 62% respectively. Shoppers at all 3 stores had similar impression about the attractiveness of offers and discounts with Meenabazar scoring 53% and Agora and Shwapno scoring 52%. While all 3 stores scored similar on cleanliness, Shwapno led in terms of convenient store design at 87% with both Meenabazar (78%) and Agora (74%) in trail. Similar scenario is seen in terms of service quality with Shwapno in the 86% with both Meenabazar (78%) and Agora (68%). All 3 stores scored positively on overall customer experience at above 80%. Shoppers at Meenabazar were the least influenced by family and friends recommendation at 34% where as shoppers to Agora, the oldest amongst these 3 stores, had the highest score of 52% in this regard.
IV.IV. Recommendations

When it comes to grocery shopping, customers put a high level of importance on quality and freshness. A certain amount of customers still prefer to go to wet markets in search of fresh vegetables. Superstores can attract more of those customers simply by ensuring a superior quality and fresher vegetables and meat which can only be achieved by reinventing their supply chain. One way of innovating their supply chains could be going towards establishing stronger backward linkages through contract farming. This would establish better control over quality and delivery schedules but off course this will result to an increase in costs. Further research may need to be done to evaluate whether the resulting increase in number of customers will offset these rise in cost or not. Although the superstores pioneered the awareness campaigns against adulterated foods but consumer confidence still remains split on this issue as almost half of them are skeptic on whether products at superstores are actually safer than what is available in the wet markets. The superstores can re-focus and strategize on how to build consumer confidence in this area.

On store wise attributes the survey results indicates that Agora needs to improve on its store design. All 3 retail chains should invest more in training its salespeople as they lag behind in the responsiveness of sales staff. Other than these all three retailers appear to be performing in a similar manner.

VI. DISCUSSION

The idea was to study the consumer behavior and shopping preferences of Bangladeshi superstores. The growing number of retail outlets indicates the importance of superstores in our day to day life. The findings of this study would help the retailers to have a better understanding of their customer needs so that they can take the necessary steps to create a bigger customer base which will eventually help them to enhance their popularity and profitability.

VII. CONCLUSION

This study only focuses on the customers of Dhaka city since Dhaka has so far been the hub of the growth of modern retailers. However superstores are gradually moved in to other cities to capture more customers. Further research can be undertaken to analyze the customers from other major cities of Bangladesh like Chittagong and Sylhet. Another comparative study can be done to see how our superstores are performing compared to the superstores of other south-Asian countries. Further studies might help to bring out some significant results which might have the managerial implications from the perspective of major superstores in the country. In near future, superstores will need innovative strategies to maintain customer satisfaction which should be the ultimate goal of every business in today’s new era of consumerism.

REFERENCE

Trade Preferences for Bangladesh in the EU and U.S.A.: A drive towards Leverage of International Labour Standards Compliance in the Supply Chain of Readymade Garments Sector

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Paper# ICBM-17-298

Abstract - This research paper aims to show how the provisions of trade preferences provided by the EU and the US (currently suspended) are playing role to promote the overall scenario of international labour standards compliance in RMG sector of Bangladesh. This paper analysis is qualitative in nature. Data is collected from secondary sources e.g. journals, newspapers, websites, and periodicals of EU. Some research papers from International Labour Organization (ILO) and The World Bank were also collected and analyzed. This research paper finds that Bangladesh has made a remarkable progress in promoting international labour standard situation in the RMG sector with technical assistance of the ILO specially in enacting a more labour friendly labour law and establishment of DIFE (Department of Inspection for factories and Establishments) by way of meeting the conditions of Bangladesh sustainability Compact, as a precondition to take back GSP from the USA and retention of EU GSP.

Keywords - Bangladesh Sustainability Compact, GSP, ILO, International Labour standards, RMG Industry, US GSP Action Plan

I. INTRODUCTION

Currently, Bangladesh is getting GSP facilities from 38 countries. Among them the European Union is the largest bloc consisting of 28 countries from which Bangladesh is being benefitted the most through trade by way of GSP benefit under ‘Everything but Arms’ arrangement (single stage transformation from January 2011). Apart from the EU, Bangladesh is eligible to enjoy GSP in other 10 countries including Australia, Belarus, Canada, Liechtenstein, Japan, New Zealand, Norway, Russian Federation, Switzerland and Turkey. Besides, till 2013 Rana Plaza factory collapse, Bangladesh was eligible to enjoy GSP in the US market too, another largest export destination for Bangladeshi products including the readymade garments. After some consecutive catastrophic incidents, The EU and the US came up with some stricter conditions to continue the GSP benefit so that Bangladesh stay in its business more compliant to international labour standards.

II. METHODOLOGY

This paper analysis is qualitative in nature. Literature review is done by analyzing data collected from official websites of European Union, Bangladesh Bureau of Statistics, United States Trade Representative etc. Besides, secondary sources e.g. journals, newspapers, websites, and periodicals of EU were also studied. Some research papers from ILO, World Bank was also collected and analyzed. A discussion is followed by the literature review highlighting the findings of the paper.

III. LITERATURE REVIEW

3.1 Trade Regimes applicable to Bangladesh for export in the EU and the US:

3.1.1 EU Trade Preference: EBA Regime

The EBA arrangement grants Bangladesh duty-free, quota-free access for all products except the arms and ammunition in the EU market.

The rapid growth of the RMG export from Bangladesh to the EU market was greatly facilitated by several factors including duty free and quota free access from 1986 onward under a bilateral textile agreement, the easing of the EU rules of origin for apparels from three to two-stage domestic production with quota restrictions in 1997 and without quota restrictions from 1999, and Everything but Arms (EBA) scheme of GSP that granted duty-free and quota-free access to virtually all export products of the least developed countries of the world including Bangladesh commencing from 2001.

The reason behind our economy is boosted by using the preferential EU-EBA regime lies in the extra benefits Bangladesh is getting from the revised RoO of EU GSP introduced in 2011 allowing single stage transformation arrangement.

Preference under the new scheme established by Regulation (EU) No 978/2012 started to apply on 1 January 2014 and will be effective for 10 years. So, Bangladesh will be entitled to be benefitted under the EBA regime till 2024 as Bangladesh will be eligible to enjoy EBA preferences in the EU market for another 3 years, after graduation from LDC status in 2021.

3.1.2 US Trade Preference:

As part of US trade preference program, Bangladesh was getting benefit under its generalised system of prefer-
ence (GSP) program, one of the oldest preference program in US initiated in 1976 under the Trade Act of 1974. With a view to uphold the worker’s rights, improvement of labour laws and working conditions in Bangladesh, the US Congress took decision to withdraw our GSP benefit so that commitment to maintain fundamental labour rights recognized by the International Labour Organization (ILO) are ensured in all our undertaking relating to workers and further disastrous industrial incidents may not happen again.

3.2 The climax point: A brief overview of the catastrophic accidents in the RMG Sector

Despite the phenomenal success in the RMG sector of Bangladesh, there has been poor working conditions and lack of minimum labour standards compliance prevailing in the sector. The economic success of this sector does not reflect the overall Scenario prevailing in the country. Along with bringing positive impression for the nation, the textile and RMG industry also hold the record of experiencing some industrial accidents in the country. Since 1990, 22 factory fires took lives of nearly 300 garment workers and injured more than 2,500 (World Bank Statistics, June 2000). In November, 2000, at least 48 workers died and more than 150 were injured when they were trapped behind a locked fire exit of a burning factory. In May 2010, seven people died in a stampede following a false fire alarm and in January, 2011 tragedies include a fire in a garment factory near Dhaka which killed at least 22 workers and there were another disastrous accident taking at least 149 lives of the factory of Spectrum Sweater Industries Ltd. The worst industrial accident in Bangladesh’s history happened in 2013. Sudden collapse of 7 storied garments factory ‘Rana Plaza’ in Savar is the worst incident in the world history taking lives of approximately 1200 workers and thousands more still traumatized. The series of such a deadly accidents has urged the need to stringent maintenance and compliance with the International Labour Standards in the RMG factories as a conditionality for preference programs of the EU and the USA.

3.3 The Effect of inclusion of labour provisions guaranteeing International Labour Standards in trade agreements:

An ILO report on ‘Labour Provisions in Trade and Investment agreements’ shows that labour provisions in trade agreements do indeed have a positive effect on labour force participation rates, in particular that such provisions increase the female labour force more than the male. Putting Labour Provisions at the Core of the Trade Agreements subject to full dispute settlement and trade sanctions increases the accountability of the relevant key players in the labour market resulting a fair labour practice.

The ILO’s international labour standards provide a governance framework for member states including Bangladesh to ensure decent work for all in the world of work through its supervisory mechanism. The Declaration on Fundamental Principles and Rights at Work creates a set of core labour standards to be ensured in the world of work. To this end, Creating Jobs, Guaranteeing rights at work, Extending Social Protection, Promoting Social Dialogue- these four are the key priority areas for ILO.

Afterwards the tragic incidents demonstrating the severity of workers’ safety in Bangladesh, the International Labour Organization (ILO) in Bangladesh is making every effort to help build a national enabling environment capable of maintaining international labour standards throughout the supply chain of RMG sector. In this regard, the ILO has initiated some projects namely Fire Safety Program and the ILO Better Work Bangladesh in partnership with the International Finance Corporation (IFC) which provides assistance, monitors and reports on the conditions in garment factories.

3.4 Progress made so far:

Despite the suspension of U.S. GSP, the economy of Bangladesh has grown at 6 percent annually for more than two decades and in 2015-16 FY, Bangladesh has achieved the highest GDP growth rate ever in its history which is 7.11 and per capita GNI 1465 in US$.

Nevertheless, The Government of Bangladesh is making progress towards meeting the requirements contained in the plan. The full implementation of the commitments under the “National Tripartite Plan of Action on Fire Safety and Structural Integrity” and compliance to the Bangladesh Action Plan 2013 is crucial for Bangladesh in that it would provide a basis for reinstating GSP trade benefits which would help expansion and diversification of our trade and exports. Meanwhile the realization of the commitments made under the Sustainability compact and Action Plan will give security to worker’s rights promoting the International labour standards.

Sustainability Compact for continuous improvements in labour rights and factory safety in the ready-made garment and knitwear industry in Bangladesh (the Compact) was signed on July 8, 2013 with a view to address the severity of safety problem of workers in Bangladesh. And to achieve the goals of the compact, the United States, the European Union and the International Labour Organization (ILO) is working in partnership with Bangladesh.

To bring about real and sustained progress in the garments sector and help prevent future tragedies, consolidation and amplification of individual efforts of the stakeholders is very important. To ensure sustainable sourcing in the garments sector, initiatives like Accord on Fire and Building Safety in Bangladesh (the Accord) and The Alliance for Bangladesh Worker Safety were taken to conduct
safety inspection and assist with the implementation of Corrective Action Plan at member’s factories.

IV. DISCUSSION

4.1 A Comparative picture of trade relationship of Bangladesh with the EU and the USA:

There has been a gradual increase in the volume of the exports to the EU paving the way for the growth of labour market in the EU for Bangladesh as the total value of the EU Imports from Bangladesh was €10.9 billion in 2013, €12.4 billion in 2014, €15.1 billion in 2015. That is why, for Bangladesh, the EU stands number 1 in the list of top trading partners in 2015 in export sector accounting for 46.7% of trade whereas the US Stands on the second position of the list of Top trading Partners 2015 accounting for 13.9% total exports to the world.

The comparison of export receipts shows that there has been cut into export receipts from the USA since the suspension of GSP (The export earnings picture of ready-made garments in FY 16-17 (first half) reflects that RMG sector combining both the knitwear and woven sectors has decreased by 3.85% in FY 16-17 in comparison to the goal set for export earnings). As Bangladeshi apparels including the knitwear and woven garments are not eligible to enjoy GSP (Generalised System of Preferences) benefit in the USA market, this sector is not affected directly because of this suspension. The global brands are not willing to outsource from our country as the consumers of buyer countries are rejecting clothing they believe is stained with the blood of Bangladeshi workers which is a matter of serious concern for us. But this withdrawal decision brought a decline in the export volume of other sectors of Bangladesh because of suspension of GSP benefit.

Breaking it down, Bangladesh exported USD 12.80 billion worth of knitwear in 2015, of which 70.7% went to the EU. 50% of our woven garments exports were also destined for the EU. But country-wise, US still comes out on top, importing 30.67% of our woven exports in the RMG Sector.

4.2 The Mechanism:

There is a well-structured relation between better labour rights and global economic growth which takes the shape of circle starting from trade preference and its conditions for labour friendly atmosphere to economic growth.

The mechanism working behind the leverage of International Labour Standard as an impact of GSP leading towards economic growth in Bangladesh is shown below:

<table>
<thead>
<tr>
<th>Trade Preferences = lower tariff and no quotas compared to other countries of the world</th>
<th>Conditionality put upon the beneficiary countries to comply with the ILO labour standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased exports to the EU and the USA in value, increased diversification</td>
<td>Increased effort to comply with the ILO labour standards and inclusion of labour provisions safeguarding labour rights</td>
</tr>
<tr>
<td>Improved labour standards</td>
<td>Increased revenue, economic growth and development</td>
</tr>
</tbody>
</table>

4.3 Improvements in the RMG labour Sector:

4.3.1 Amendment to the labour law 2006:

The filing of GSP Petition of the American Federation of Labour and Congress of Industrial Organizations (AFL-CIO) alleging violation of domestic labour laws and internationally recognized labour standards in readymade garments industry before the USTR to withdraw the GSP benefits as well as the possible establishment of Better Work Program in Bangladesh by International Labour Organization have added the urgency on the government for the quick passing of labour law amendment.

Bangladesh Labour Act (BLA) 2006 was amended in 2013 as an immediate response to the Rana Plaza disaster and its implementing rules and regulations were published in October, 2015 to bring the provisions in more conformity with the international labour standards and make it consistent in line with the ILO Conventions, which are ratified by Bangladesh. It was a crucial step towards fulfilling the government’s obligation to fully respect the fundamental rights to freedom of association and collec-
tive bargaining and to address the critical need to bolster occupational safety and health. The Act stipulates that safety and health committees including members of the workforce must be established in every factory with over 50 workers. Meanwhile other mandatory measures include the setting up of dispensaries and clinics in factories. According to the government, the new law was a major advancement in establishing worker’s rights and bringing more stability in the industrial sector.

Since the labour law amendment, the RMG sector witnessed an exponential increase in the number of trade unions. By the end of August 2015, there were 464 trade unions in the RMG sector compared to just 131 at the beginning of 2013. In 2013, 96 trade unions in the RMG sector have been registered with the Bangladesh Department of Labour (DoL). In contrast, only two trade unions in the RMG sector registered with the DoL during the previous two years.

4.3.3 Recruitment of labour inspectors:

Not only that the European Union, Bangladesh Government and the ILO issued the Sustainability Compact to promote improved labour standards, the structural integrity of the buildings and occupational safety and health, and responsible business conduct in the RMG and Knitwear industry in Bangladesh.

Till 31st October, 2015, 1475 factories had been assessed through government efforts, supported by the International Labour Organization (ILO). A further 2185 factories had been inspected by the Bangladesh Accord on Building Safety and the Alliance for Bangladesh Worker Safety.

4.3.4 Occupational Safety and Health:

Apart from the factory inspection measures, recruitment of factory inspectors was a significant step towards the implementation of one of the conditions agreed by the government in the NTPTA and the EU Sustainability Compact. The Government of Bangladesh upgraded the Chief Inspector of Factories and Establishments office to a Department, sanctioning 679 new staff positions in the Directorate, including 392 new inspectors. In January 2014, capacity building training of the first batch of the newly recruited Labour Inspectors started in Dhaka. By May 2015, 199 new inspectors (51 female) were recruited bringing the total to 284. Capacity building of the recruited inspectors is a priority now and ILO is implementing a comprehensive labour inspection training programme since August 2015 aiming 160 labour inspectors gain the skills needed to boost working conditions and worker safety in Bangladesh.
5. CONCLUSION

5.1 Remaining Challenges:

There are still concern by the labour leaders, trade unions, national and international organizations that despite the amendment of the labour legislation, the amendments are not up to the mark to comply with the standards set by the core ILO conventions. Section 12, S. 13, S. 23(3) and S.4 of the amended law have no clear definition of the terms ‘closure of the institution’ and ‘misconduct of worker’. There is a potential danger of this being abused by employers or owners as workers may be dismissed on grounds of misconduct for participating in strikes or procession. The amendment retained the provision of 30% membership for forming new union, which practically negates the idea of free trade unionism.

Hence Bangladesh government should instead reform its labour legislation by strengthening protections for trade unions, establishing stricter penalties for non-compliance and mandating the Accord on Fire and Building Safety as a minimum standard for corporate responsibility, in order to effectively improve health and safety conditions for its workers. Especially the Export Processing Zones Act still lacks the full compliance with ILO Convention no. 87 i.e. no trade union is allowed in the EPZ areas under the new EPZ Labour law 2016 approved by the Cabinet. Rather the EPZ workers will be able to exercise their rights of association through the Workers Welfare Association (WWA) under the new law, but it can’t be called a trade union directly. It will act as collective bargaining agents (CBAs) which is similar to trade unions. Not only this, the provision [S.179(2)] dictating 30% workers are to be made members of the trade union is not realistic in the present context. As such formation of trade union on application of 30% workers in factories where 5000-20000 workers are employed may not be possible. This shows the difficulty of the process of application to form trade union in practice.

5.2 Concluding Remarks:

The readymade garment sector is very important for the development of Bangladesh. The second position of Bangladesh in exporting readymade garments in the competitive globalised market indicates the country’s position in the neo-liberal economy.

Bangladesh is regarded globally as an example of remarkable progress in poverty reduction and human development, despite daunting challenges. According to The Inclusive Growth and Development Report 2017 released by World Economic Forum (WEF) on 16th January 2017, Bangladesh is ranked ahead of both India and Pakistan in a global inclusive development Index. Bangladesh is ranked 36th, while India, the world’s fastest growing economy is ranked as 60th and Pakistan as 52nd. These indications lead us towards a positive signal to the achievement of the Sustainable Development Agenda 2030 including SDG 8. If we want to achieve SDG goals, it would take bigger cooperation of EU and the USA in trade relationship so that the trade preference programs provided by them helps us not only to boost our economic growth, but also it makes a major contribution in our overall well-being having a positive growth indication in our social development indicators including the labour rights standard. The initiatives taken to improve the labour rights of the workers in the RMG sector connotes the message of sincere efforts by the government in partnership with the ILO to improve the labour rights situation according to the ILO core labour standards so that preference programs bring improved labour standards along with economic benefit to the country.

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Local Community Attitude and Support towards Tourism Development at Cox’s Bazaar, Bangladesh

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Abstract
Tourism development is a double-edged sword for local communities and it is directly influenced by the attitude of residents. The positive and supportive attitude of local community is a must for congenial development of tourism in each tourism destination. The study focuses on local community attitude towards economic, environmental and social impacts of tourism and their support towards the future development of tourism at Cox’s Bazaar, the major tourist destination of Bangladesh. Using judgmental sampling procedure, a sample of 201 local residents was surveyed through a self-administered questionnaire and data were analyzed by using descriptive statistics and ANOVA. The findings of the study show that the communities have positive attitude towards the three important aspects of tourism development and they support future tourism development at Cox’s Bazaar based on their personal benefits they receive. However, the ANOVA analysis shows some significant differences among the local community attitudes and supports towards the tourism development depending on some factors like profession, age, education, income, etc. The research may guide the tourists, the hoteliers, the tour operators, business people and the Government to act upon the factors that ensure the commercial, socio-cultural, physiological, political and economic development for the community that enhance sustainability for the industry.

Key Words: Tourism development, double-edged sword, congenial development, community attitude, sustainability.

1. Introduction
Tourism is considered as one of the most dynamically developing sectors in the world economy and it plays a very special role in the development and sustainability of Bangladesh economy. The tourism industry is experiencing a rapid growth with holistic support of local residents who are directly and indirectly involved in this sector. Tourism sector, acknowledged as one of the major attributes for cultural, economical and environmental development today, is perceived as an offer of opportunity to the local communities. The growth of the tourism industry is crucial to the economic growth and the related fields such as transportation, leisure services, etc. On the other side, tourism also becomes the means to support the local communities especially in changing the economic atmosphere. So the tourism industry is able to generate income, currency exchanges and provide the employment opportunities (Hanafiah, Harun & Jamaludin, 2010). The rapid growth of tourism industry will certainly transform the tourist destination spot, however, if not an unplanned tourism development, since it could lead to environmental degradation and socio-economic disparity amongst the local community. Local residents are the main stakeholders of tourism development and the studies on local community attitudes toward future tourism development is increasing due to the nexus between community
support and government plan for future development.

Cox’s Bazaar is the longest unbroken sandy sea beach in the world with a gentle slope. The 120 km (75 mi) long beach is located 150 km (93 mi) south of the industrial port Chittagong. It is one of the most-visited tourist destinations in Bangladesh situated at the lap of the Bay of Bengal (Chowdhury, 2012). Cox’s Bazaar town has an area of 6.85 square km, and bounded by Bakkhali River on the north and East, Bay of Bengal in the West, and Jhilwanj Union in the south. Currently there are 22,89,900 people living in Cox’s Bazaar whose major livelihood is tourism though a number of people are involved in the fishing and collection of seafoods and sea products (Islam & Jamal, 2012). Himchari National Park, Aggmeda Khyang, Ramu, Bangabandhu Sheikh Mujib Safari Park, Inani Beach, Moheshkhali, Teknaf, etc. are the main attractions of Cox’s Bazaar. In addition to that sun rise and sun set are two of the most beautiful things can be enjoyed here.

As the previous studies show that there are contradictory results, both positive and negative, and there is no consensus on the impacts of tourism on local community (Oviedo-Garcia, Castellanos-Verdugo, & Martin-Ruiz, (2008); Dyer, Aberdeen & Schuler, (2007); Diedrich & García, 2009; Andriotis, 2005; Andereck, Valentine, Knopf, & Vogt (2005) that encourages the researchers to conduct the study in a different culture like Bangladesh. Therefore, the study aims to examine the local residents’ attitude and future support towards tourism development at Cox’s Bazaar in Bangladesh.

2. Literature Review:
2.1 Residents’ Attitudes on Economic Impacts

The commercial, socio-cultural, physiological, political and economic sustainability of the tourism industry is greatly determined by local community support for tourism. The role of local residents in influencing the tourism development activities through working together with the government is vital (Jamaludin, Othman & Awang, 2009). Generally, the economic dimension is the main cause of positive attitudes from the residents. In addition to that, they also have the ability to differentiate between the positive and negative aspects of tourism within their community and thus assess according to the context in which the industry develops. One of the aspects that residents value most is that tourism industry generates job opportunities for them (Diedrich & García, 2009; Andereck & Nyaupane, 2011) suggesting that tourism is an important source of income for residents (Bujosa & Rosselló, 2007; Andereck & Nyaupane, 2011). Residents also benefit from tourism to the extent that it produces greater opportunities to negotiate (Bujosa & Rosselló, 2007) and, in this way, to create the local business environment. Also, it is noted by the residents that tourism plays a role in the infrastructural development and creating facilities for the people (Andereck et al., 2005), that contributes to the improvement of living standards (Andereck & Nyaupane, 2011). In contrast, residents dislike the aspect that tourism is a seasonal phenomenon (Bujosa & Rosselló, 2007). On the one hand, tourism creates employment opportunities but, on the other, leaves residents to deal with an irregular need of labor within the year. The trade-off, for example, when there is little activity and no indemnity for the workers, so the tourism workers either have to employ themselves in other sectors or remains jobless during the off season (Cerezo & Lara de Vicente,
Residents are aware that tourism increases the cost of living (Bujosa & Rosselló, 2007). Due to the fact that according to many residents tourism improves benefits and increases the local economy (Gürsoy, Jurowski & Uysal, 2002) almost all the studies that examined the relation between the benefits of economic gain and attitudes towards tourism reported a positive relation (Dyer, Aberdeen & Schuler, 2007). The relationship between the level of tourism development in a destination and residents’ perceptions of impacts has been widely assessed by Dietrich and García-Buades (2008). In the research conducted by Dyer et al. (2007), the correlation between level of tourist development and attitude of the residents, was demonstrated not to hold at the study, undertaken in a well-developed tourist destination, showed that locals still express a positive attitude towards tourism (especially for the concerns of cultural and economic benefits) and were likely to support further tourism development.

2.2 Residents Attitudes towards the Socio-cultural Impacts

Tourism has significant impact on local socio-cultural activities, affecting the habits, customs, social life, beliefs and values of the inhabitants of the tourist destination, whereas on the socio cultural plan, interactions take place between local residents and tourists. However, it can also generate feelings of distress, pressure, congestion, etc., at different moments in the life of residents, threatening their cultural identity and social reality. Some studies have suggested that local residents acknowledge the impacts of tourism on the services offered by the community as positive (Andereck et al., 2005). It creates opportunities for leisure activities (Bujosa & Rosselló, 2007; Andereck & Nyaupane, 2011); it stimulates cultural activities (Yoon et al., 2001); it raises interest in maintaining and preserving historic buildings and archaeological sites (Oviedo et al., 2008) and increases pride and cultural identity (Andereck et al., 2005), that preserves cultural values (Oviedo et al., 2008). Finally, it improves the quality of life of the residents (McGehee & Andereck, 2004). The authors also recognize that tourism promotes exchange among local people and tourists (Dyer et al., 2007).

Some studies contrastively show that residents perceive some negative aspects in this impact. From a social viewpoint, residents may recognize that tourism increases delinquency and vandalism (Andereck et al., 2005), and serious crime (Diedrich & García, 2009). It also causes increased drug abuse (Diedrich & García, 2009), and tourism can give rise to prostitution (Sheldon & Abenoja, 2001). Residents’ attitudes towards the socio-cultural impacts of tourism have been widely studied. However, these researchers have produced contradictory results. Residents also tend to perceive some socio-cultural aspects negatively (Andriotis, 2005; Andereck et al., 2005), and others maintain that residents see tourism as offering their community diverse benefits (Besculides, Lee, & McCormick, 2002; Sirakaya, Teye & Sonmez, 2002). A possible direct relation has been observed between the positive evaluation of socio-cultural impacts and support for tourism (Besculides et al., 2002). Other studies, suggest that tourism development probably brings benefits to the host community, and also social costs (Gursoy et al., 2002; Teye, Sonmez, & Sirakaya, 2002; Tosun, 2002). There is no consensus on this impact and studies suggest that depending on the context and circumstances in which tourism develops, so
it will, to a greater or lesser extent, impact on the socio-cultural aspect.

2.3 Residents’ Attitudes towards the Environmental Impacts

Tourism can be a reason to protect and preserve resources and may damage or destroy them as it is often developed in attractive yet fragile settings. Local residents also identify this duality of the environmental impact in their community: positive and negative. Resident’s value is the fact that tourism helps to preserve natural resources (Andereck & Nyaupane, 2011) and also it improves the appearance of their city or surroundings (Oviedo et al., 2008). In some other studies, residents recognize that tourism causes pollution (Yoon et al., 2001) and rubbish (McGehee & Andereck, 2004; Andereck et al., 2005) and recognize it provokes overcrowding and congestion (Andereck et al., 2005) and, therefore, agglomeration in public facilities and resources (Bujosa & Rosselló, 2007). In the many studies (Bujosa & Rosselló, 2007) to identify negative aspects or residents’ concern for the environment and even where this dimension is important to the community, as demonstrated in the study by Liu and Var (1986), it is not significant enough for them to be prepared to lower their living standards and it seems that residents prefer to support tourism, putting its advantages ahead of environmental damage. Thus, attitudes could be very similar to beliefs, but they additionally possess an evaluative component. The residents are supportive or exert opposition towards tourism development projects, and understanding their attitudes allows for the adoption of an adequate responsive mechanism to the negative influences that arise from the tourism exchange (Sharma & Dyer, 2009). Some studies discovered that the more residents possess knowledge about tourism and have an intense contact with tourists, the more their perceptions of the benefits of tourism will be positive (Andereck et al., 2005). The relationship between residents’ attitude and their ability to use tourism resources, was particularly investigated in the research by Gursoy et al. (2002), who underlined that perception of the local residents can be either positive or negative, if they perceive tourism as a factor that increases opportunities for recreational activities for the community their attitude will be positive and oppositely, their reaction may be negative if they believe that tourism may result in the local population losing accessibility to their traditional leisure.

3. Research Methodology

A quantitative survey method was used to identify residents’ attitude toward tourism development in the Cox’s Bazaar. The survey explored the resident’s attitude on tourism development impact from economic, social, environmental perspectives and future support. The questionnaire was divided into three sections of respondent profiles, perception of tourism impacts and future supports. Variables are adopted from Hafiz, Raziff & Izzat (2013); Latkova & Vogt (2012) on the basis of a series of review on the existing literature dealing with the local community attitudes toward tourism development. The measuring of attitudes used in this study applied on the Tourism Impact Attitude Scales developed by Hafiz et al. (2013) as the standardized of measurement of resident attitudes toward tourism development. This measurement is tested by the various settings of tourism area and support is gathered from Hafiz et al. (2013); a total of 201 questionnaires were distributed and all of them were valid.

Judgmental sampling procedure was used to achieve representative response from the whole group of people for a broad range of attitudes. ANOVA was done to find out whether there were significant differences
between and among the variables and descriptive statistics was used to find out the mean values of different dimensions and the variables.

4. Findings and Results:

4.1 Residents’ Perception on Tourism Development

Table 1. Perception on tourism development impacts:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean (M)</th>
<th>Std. Deviation (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic impacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The benefits of tourism to the community outweigh its costs</td>
<td>5.63</td>
<td>1.68</td>
</tr>
<tr>
<td>Tourism creates desirable employment opportunity for the residents in the community</td>
<td>5.70</td>
<td>1.63</td>
</tr>
<tr>
<td>Local businesses benefit the most from tourists</td>
<td>6.17</td>
<td>1.18</td>
</tr>
<tr>
<td>Standard of living has increased due to tourist spending to the community</td>
<td>5.80</td>
<td>1.60</td>
</tr>
<tr>
<td>Tourism helps improve the economic situation for many residents in the community</td>
<td>5.95</td>
<td>1.21</td>
</tr>
<tr>
<td>The cost of living in the community was remained as low as before tourism was introduced</td>
<td>5.63</td>
<td>1.67</td>
</tr>
<tr>
<td>Tourism development creates part time jobs for Cox’s Bazaar residence.</td>
<td>5.54</td>
<td>1.57</td>
</tr>
<tr>
<td>Environmental impacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourism contributes to the negative effects of vegetation and loss of meadows, and green space</td>
<td>4.5</td>
<td>2.12</td>
</tr>
<tr>
<td>Tourism produces large quantities of waste products</td>
<td>5.24</td>
<td>1.87</td>
</tr>
<tr>
<td>Tourism has not improved the ecological environment of the community in many ways</td>
<td>4.77</td>
<td>1.99</td>
</tr>
<tr>
<td>Tourist’s littering destroy the beauty of Cox’s Bazaar</td>
<td>4.86</td>
<td>1.95</td>
</tr>
<tr>
<td>Tourism caused environmental pollution to Cox’s Bazaar</td>
<td>3.86</td>
<td>2.01</td>
</tr>
<tr>
<td>Tourism development causes congestion.</td>
<td>4.96</td>
<td>1.98</td>
</tr>
<tr>
<td>Social impacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase tourism provides more recreational activities for residents</td>
<td>5.29</td>
<td>1.73</td>
</tr>
<tr>
<td>Tourism has increased residents’ pride in the local culture in the community</td>
<td>5.02</td>
<td>1.84</td>
</tr>
<tr>
<td>Tourism is encouraging a variety of cultural activities to the local</td>
<td>5.45</td>
<td>1.72</td>
</tr>
<tr>
<td>Tourism negatively contributes social problems such as crime, drug use, prostitution, and so forth to the community</td>
<td>5.42</td>
<td>1.8</td>
</tr>
<tr>
<td>Tourism has not resulted unpleasant overcrowded situation for the community</td>
<td>4.22</td>
<td>2.12</td>
</tr>
<tr>
<td>Tourism is the major reason for the variety entertainment in the community</td>
<td>4.95</td>
<td>1.95</td>
</tr>
<tr>
<td>Tourism development does not modify local culture and living style.</td>
<td>3.94</td>
<td>2.25</td>
</tr>
</tbody>
</table>

4.1. a) Economic Impact

From the above table, the most notable result of this sub-section analysis is related to the local business benefits (m=6.17) and economic situation improves (m=5.95). This could be true based on the mushrooming of local tourism related businesses around the area. Based on the fact, it is believed that tourism development successfully creates a lot of job opportunities to the population. In addition, respondents also agreed with facts about economic benefits outweighed its costs (m=5.63), tourism creates desirable employment opportunity (m=5.70), and living standard increased (m=5.80). This is expectedly happening as the tourism is known as the main economic sources in the area. However, the residents perceived that their living costs also increased due to tourism (m=5.63).

4.1. b) Environmental Impact

Most of the respondents viewed the environment impacts of tourism from the positive perspectives. The majority of them agreed that, tourism does not bring pollution to Cox’s Bazaar (m=3.86) and tourism does not contribute to the negative effects of
vegetation and loss of meadows and green space (m=4.50). Further, most of the respondents do not agree that tourists’ littering destroy the beauty of Cox’s Bazaar (m=4.86), tourism produces congestion (m=4.96), and tourism deteriorate the ecological conditions (m=4.77). The local people think that tourism produces large quantities of waste products here (m=5.24). The populations mean score indicate that the perceptions on the environment impacts are very positive and but still there are spaces to be improved.

4.1. c) Social Impact
The majority of the respondents agree that tourism is encouraging a variety of cultural activities to the locals (m=5.45), it negatively contributes social problems (m=5.42), tourism provides more recreational activities (m=5.29) and that tourism has increased their pride in the local culture (m=5.02). Majority of the respondents disagreed that tourism has created a variety of cultural activities to the local people (m=4.95), tourism doesn’t bring unpleasant overcrowding situations (m=4.22) and that tourism development does not modify local culture and living style (m=3.94) in Cox’s Bazaar.

4.2 Support for Future Tourism Development
Community attitudes and supports are essential to develop tourism sector in Cox’s Bazaar that are shown in the following table-

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism industry should be actively developed in my community</td>
<td>6.15</td>
<td>1.58</td>
</tr>
<tr>
<td>I support tourism and would like to see it become important part of my community</td>
<td>6.30</td>
<td>1.32</td>
</tr>
<tr>
<td>I will support new tourism facilities that will attract more tourism in my community</td>
<td>6.51</td>
<td>1.02</td>
</tr>
<tr>
<td>I believe tourism should be actively encouraged in Cox’s Bazaar</td>
<td>6.26</td>
<td>1.42</td>
</tr>
<tr>
<td>The government supports the promotion of tourism in Cox’s Bazaar</td>
<td>5.03</td>
<td>2.07</td>
</tr>
<tr>
<td>My community should become more of a tourist destination</td>
<td>6.17</td>
<td>1.40</td>
</tr>
<tr>
<td>Long term planning on the environmental aspect would exaggerate tourism business</td>
<td>6.30</td>
<td>1.60</td>
</tr>
<tr>
<td>Tourism industry increases the quality of the outdoor recreation opportunities in my community</td>
<td>6.00</td>
<td>1.38</td>
</tr>
<tr>
<td>It is important to manage the growth of tourism in Cox’s Bazaar</td>
<td>6.30</td>
<td>1.2</td>
</tr>
<tr>
<td>I believe the tourism sector will continue to play a major role in the economy of the community</td>
<td>6.38</td>
<td>0.98</td>
</tr>
<tr>
<td>The future of Cox’s Bazaar as a tourist attraction is sustainable</td>
<td>6.32</td>
<td>1.12</td>
</tr>
<tr>
<td>I always expect halal foods at Cox’ Bazaar</td>
<td>6.25</td>
<td>1.37</td>
</tr>
<tr>
<td>I want to see proper prayer facilities here</td>
<td>6.30</td>
<td>1.28</td>
</tr>
<tr>
<td>I think separate services should be available here (such as female rescuers, separate washroom at shopping malls, beach areas, bus terminals, etc.)</td>
<td>5.94</td>
<td>1.89</td>
</tr>
</tbody>
</table>

The majority of respondents perceived that the tourism sector will continue to play a significant role in the economy of the local community at Cox’s Bazaar (m =6.38) and they will continue their support to attract more tourists here (m=6.51). In other words, perhaps local communities were too reliant on the tourism sector as their main source of income. Moreover, the local communities perceived that Cox’s Bazaar Development Authority had promoted the tourists’ hotspot effectively. Tourism industry generates income, especially those who are operating the chalets, resorts or rooms, sea taxi provider, shops and handicraft shops. Based on Hafiz et al. (2013) and Gursory & Rutherford (2004), residents tend to support future tourism development if they consider tourism as a tool to generate income as well as create job opportunities.
4.3 ANOVA Analysis

ANOVA was done to find out whether there are significant differences among the tourists based on various categories.

Table 3. ANOVA analysis:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profession</td>
<td></td>
</tr>
<tr>
<td>The benefits of tourism to the community outweigh its costs</td>
<td>.018</td>
</tr>
<tr>
<td>Standard of living has increased due to tourist spending to the community</td>
<td>.032</td>
</tr>
<tr>
<td>The cost of living in the community was remained as low as before tourism was introduced</td>
<td>.057</td>
</tr>
<tr>
<td>It is important to manage the growth of tourism in Cox’s Bazaar</td>
<td>.062</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>The cost of living in the community was remained as low as before tourism was introduced</td>
<td>.086</td>
</tr>
<tr>
<td>I support tourism and would like to see it become important part of my community</td>
<td>.022</td>
</tr>
<tr>
<td>Tourism industry increases the quality of the outdoor recreation opportunities in my community</td>
<td>.044</td>
</tr>
<tr>
<td>I think separate services should be available here (such as female rescuers, separate washroom at shopping malls, beach areas, bus terminals, etc.)</td>
<td>.000</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>The benefits of tourism to the community outweigh its costs</td>
<td>.003</td>
</tr>
<tr>
<td>Tourism creates desirable employment opportunity for the residents in the community</td>
<td>.093</td>
</tr>
<tr>
<td>Tourism has not improved the ecological environment of the community in many ways</td>
<td>.044</td>
</tr>
<tr>
<td>Tourism development causes congestion</td>
<td>.024</td>
</tr>
<tr>
<td>Tourism negatively contributes social problems such as crime, drug use, prostitution, and so forth to the community</td>
<td>.075</td>
</tr>
<tr>
<td>I believe the tourism sector will continue to play a major role in the economy of the community</td>
<td>.030</td>
</tr>
<tr>
<td>I want to see proper prayer facilities here</td>
<td>.06</td>
</tr>
<tr>
<td>Family Income</td>
<td></td>
</tr>
<tr>
<td>Tourism contributes to the negative effects of vegetation and loss of meadows, and green space</td>
<td>.018</td>
</tr>
<tr>
<td>Tourism has not improved the ecological environment of the community in many ways</td>
<td>.044</td>
</tr>
<tr>
<td>Tourism caused environmental pollution to Cox’s Bazaar</td>
<td>.041</td>
</tr>
<tr>
<td>Tourism development does not modify local culture and living style</td>
<td>.012</td>
</tr>
<tr>
<td>I believe tourism should be actively encouraged in Cox’s Bazaar</td>
<td>.008</td>
</tr>
<tr>
<td>The government supports the promotion of tourism in Cox’s Bazaar</td>
<td>.060</td>
</tr>
<tr>
<td>Long term planning on the environmental aspect would exaggerate tourism business</td>
<td>.019</td>
</tr>
<tr>
<td>I want to see proper prayer facilities here</td>
<td>.032</td>
</tr>
</tbody>
</table>

The above ANOVA table shows that, there are some significant differences among the respondents based on their profession in terms benefits of tourism development, increasing living standard, increasing living costs and government patronization in tourism development at Cox’s Bazaar. Some significant differences also have been found among the respondents based on their age in terms of increasing living costs, positive attitude, quality facilities and separate services. Based on education there has been shown some significant differences on the issues like- benefits of...
tourism development, employment opportunities, ecological balance, congestion, negative impact of tourism development, role of tourism and prayer facilities. Some significant differences have been found out based on family income in terms of loss of meadows, ecological balance, environmental pollution, cultural modification, government role, long-term tourism plan and prayer facilities.

**Conclusion**

Residents of Cox’s Bazaar portrayed positive perception towards the economic and social impact of tourism. They also depicted the impact of tourism on the environment in the positive way. This finding supports the case from previous researchers who reported that each tourism element has both positive and negative impacts (Hafiz et al. 2013; Andereck & Nyaupane, 2011; Nunkoo & Gursoy, 2011).

The importance of gaining local community support for the tourism development has been researched by tourism scholars as vital components in achieving successful tourism industry. Support for future tourism development is a key factor in developing and implementing successful initiatives. On the other hand, residents should actively participate in community activities as well as support tourism and community development. Local communities must have the sense to help their community in order to achieve the positive benefits from tourism development (Hafiz, et al. (2013).

From this study the outcome is quite significant in different ways. ANOVA shows significant differences among the respondents’ opinions based on their profession, age, education and family income. The implications of the study are multifaceted such as related stakeholders may get guidelines to identify their defaults and they may take pragmatic steps to upgrade their services. It may help tour operators to detect their weaknesses and may help to offer better services. And finally government policymakers may get proper guidelines to formulate sustainable strategies for the development of tourism industry. Failure to take an integrated and holistic approach in developing the tourism sector will only expose them to further decline, in terms of both their natural beauty as well as the number of tourist arrivals. Therefore, it is badly required to emphasize on some crucial areas such as responsible tourism practice and quality of life. Thus, future research is needed to better understand the impact of tourism development on residents’ quality of life and for that a larger sample can be taken to conduct the study. Qualitative research method may be applied for that.

**References:**


Persuade of Marketing Mix in Choosing Biological Products by Specialist Doctors in Bangladesh

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¹Institute of Business Administration (IBA), University of Dhaka.

Abstract: Pharmaceutical industry is one of the technology oriented high-flying manufacturing sectors of Bangladesh with the market value of $1,897,000,000 per annum. Despite of limited number of new products in the domestic market the average growth was around 15% in last 5 years where biological products’ contribution was remarkable. In 2012 biological products contributed almost 1% of the entire market whereas in 2016 this part becomes more than doubled (3%). Also, biological products grew 6% higher than the regular chemical drug market in last year. However, the drug regulatory guidelines of Bangladesh restrict the pharmaceutical marketer only to prefer individual selling out of the available communication mix. For biological product the target audiences are specialist doctors. Therefore, this study attempted to investigate the influence of marketing mix elements on the decision making of specialists doctors in prescribing biological products. The population of 50 specialist doctors of Dhaka city has been selected and data was collected using questionnaire feedback. The study found that price is the most considerable elements for choosing biological products followed by product.

Key words: Persuade, Pharmaceuticals, Biological Products, Marketing Mix and Specialist Doctors.

1. Introduction: There are several sectors on which Bangladesh can be proud of and undoubtedly the pharmaceutical sector is one of these sectors, rather it is the sector, which is the second-largest contributor to the government exchequer [1]. There are 266 allopathic companies in this sector among which 214 are functional [2]. The approximate total market size is about $1,897,000,000 per year of which about 97% of the total requirement of medicines is created by the local companies and the rest 3% is imported [3]. The imported drugs mainly high-tech and recently local companies are concentrating that part also. Due to changes in disease pattern recently some therapeutic segments are growing fast compared to conventional agents. Among the high flying segments biological products are extremely imperative. Multinational companies (MNCs) who operate in Bangladesh are enjoying a good share of Biological product market. Apart from the MNCs local companies are aggressive to capture this market and only 10 renowned companies are involved in this warfare. However, considering the special technical knowledge to select the product, limited number of prescribers, requirement of extraordinary storage facility, counseling to the patients, hi-tech-production facility and expansive treatment option biological product market is different than conventional market. Although there are some studies on pharmaceutical marketing and management but there are very few studies on marketing of biological products in Bangladesh. Therefore, this study aimed to identify the marketing mix for biological products.

1.1 Working Definition: a. Biological Products: The term biological product means a virus, therapeutic serum, toxin, antitoxin, vaccine, blood, blood component or derivative, allergenic product, protein (except any chemically synthesized polypeptide) or analogous product or arsphenamine or derivative of arsphenamine (or any other trivalent organic arsenic compound), applicable to the prevention, treatment, or cure of a disease or condition of human beings [4]. However, for our study we shall limit this definition only to Insulin, Monoclonal Antibodies, Streptokinase, Erythropoietin, Interferon, Filgrastim etc. since they are mostly used biological products in Bangladesh. We have excluded vaccines as many of them are use as preventive medicine and also supplied by the government in many cases.

b. Specialist Doctors: A medical practitioner whose practice is limited to a particular class of patients (as children) or of diseases (as skin diseases) or of technique (as surgery); especially: a physician who is qualified by advanced training and certification by a specialty examining board to so limit his or her practice [5]. For our study they are group of doctors who have completed at least one post graduation degree in a specific area of medical science from any government endorsed institution and usually prescribe any of the above selected biologics.

c. Marketing Mix: The marketing mix is the set of controllable tactical marketing tools-product, price, place and promotion-that the firm blends to produce the response it wants in the target market. [6]
1.2 Broad Objective: To identify the influence of marketing mix on choosing biological products by the specialist doctors in Bangladeshi

1.3 Specific Objectives:

a. To rank the influence of individual element of marketing mix in choosing biological products by the specialist doctors in Bangladesh.

b. To describe the product influence in choosing biological products by the specialist doctors in Bangladesh.

c. To describe the price influence in choosing biological products by the specialist doctors in Bangladesh.

d. To describe the place influence in choosing biological products by the specialist doctors in Bangladesh.

e. To describe the promotion influence in choosing biological products by the specialist doctors in Bangladesh.

f. To recommend the marketing strategies for the promotion of biological products to the specialist doctors in Bangladeshi

1.4 Materials & Methods:

1.4.1 Methodology: This was an exploratory research where both primary and secondary data have been used. For primary data we used survey method. For secondary data we mostly relied on different journals, reference books, articles and various reputed websites.

1.4.2 Sampling: This was a pilot study with 50 samples. Samples were randomly selected from 05 specialist categories in an equal ratio. All the samples were selected from Dhaka City as they represent the entire community. The specialist categories were Diabetologist, Oncologist, Nephrologist, Cardiologist and Hematologists as they have ampoule scope to prescribe biological products.

1.4.3 Data Collection: A questionnaire survey was carried out for collecting primary data. The questionnaire was developed based on the conceptual framework. Respondents were given the opportunity to rank each sub element of the outcomes under the four main marketing mix elements based on a Likert scale ranging from 1 to 7.

1.4.4 Data Analysis: We have carried out both qualitative and quantitative analysis. For quantitative analysis we used SPSS software where one-way ANOVA was the basic tool. For rating purposes we used average point.

2. Literature Review:

2.1 Overview on Bangladesh Pharmaceutical: The pharmaceutical industry is one of the most dynamic and powerful sectors in Bangladesh. It is technologically one of the most developed manufacturing industries and currently contributes about 1% to total GDP with great potential for expansion. Total domestic healthcare expenditures are currently approximately 3% of GDP, offering substantial opportunity for domestic pharmaceutical sales in addition to exports. Increased education levels, enhanced awareness of healthcare, growing per capita incomes, the emergence of private healthcare services and the government’s expanding public expenditures in this sector continue to stimulate a rise in demand. There are currently around 100 Bangladeshi pharmaceutical companies in operation. The industry is highly concentrated as the top 20 companies generate 85 percent of the revenue. [3]

Table-1 (Market Size in $ U.S. thousands of Bangladesh Pharmaceutical)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017 (Est)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Size</td>
<td>$1,505,860</td>
<td>$1,686,563</td>
<td>$1,897,000</td>
</tr>
<tr>
<td>Local * Production</td>
<td>$1,460,684</td>
<td>$1,635,966</td>
<td>$1,843,500</td>
</tr>
<tr>
<td>Exports</td>
<td>$11,278</td>
<td>$14,097</td>
<td>$17,540</td>
</tr>
</tbody>
</table>

(Local Production*: 97% of requirement). Source: BAPI, 2016

2.2 Market Size of Selected Biological Products: There is no sufficient information on the market of biotech products in Bangladesh. However, the local demand of biotech drugs in Bangladesh is estimated to be about BDT 600 crore. Due to the crying need of biotech products for the achievement of self-sufficiency for human medicines, the pharmaceutical companies of Bangladesh are turning to biotech and high tech products gradually. Several companies have already introduced anti-cancer, anti-HIV/AIDS drugs, human insulin, and many other companies are planning to launch biotech and high tech products to keep pace with the world’s pharma market trend, to fulfill the local demand of biotech products, as well as to export those products to other countries [7]. As per IMS biological products market is growing fast and the size has been doubled within last five years. Market share of biological market in comparison with total market has also increased to 3% from 1% within last four years [8].
2.3 Global Opportunity of Biological Products:
The opportunity in biopharmaceuticals is big and growing too rapidly to ignore. Today biopharmaceuticals generate global revenues of $163 billion, making up about 20 percent of the pharma market. It’s by far the fastest-growing part of the industry: bio-pharma’s current annual growth rate of more than 8 percent is double that of conventional pharma and growth is expected to continue at that rate for the foreseeable future. The efficacy and safety of biopharmaceutical products, combined with their ability to address previously untreatable conditions, allows pharma companies to command high prices for innovative drugs. Strong demand has driven significant profits, despite the high cost of goods sold. [9]

2.4 Factors associated with Pharmaceutical Marketing:
Pharmaceutical marketing is a specialized field where medical representatives form the backbone of entire marketing effort. Pharmaceutical companies also appoint medical representatives and assign them defined territories. Medical representatives meet doctors, chemists and stockiest as per company norms. Medical representatives try to influence prescription pattern of doctors in favor of their brands. [10]

Although people buy products for the curing of the disease they suffering from it depends on the condition, but which brand should customer buy is the ultimate choice of physician. Unlike other industries pharmaceutical products are more specific products while sales promotion rely on scientific knowledge sharing within limited norms and that too the people (doctors) who have got the enough information that those, who are promoting (MR’s). [11]

The factors influencing prescription behavior of physicians, discussed in the questionnaire are Price of the product, Availability of the product, Communication made by MR the product quality that is being promoted. Name of the company for which brand belongs to which company, new research molecule and new research combination drug. Free of cost samples of the drugs, free medical camps, product folders, Continuous Medical Education (CME’s), Gifts & other Promotional inputs, Research Molecule, Incentives, Sponsorships to conferences. The conclusion shows that marketing strategies related to 4Ps influence the physician prescription behavior. [12]

The influence of promotional tools by pharmaceutical industry on prescribing behaviors of doctors has a greater impact. The general promotional tools like gifts and etc. These are more influential rather than scientific promotional tools for the physicians contrast with consultants. [13]

The mindset and the factors, which influences the prescribing behavior of physicians and their practice in may be used for creating policies and enhance their choices. The highlight of the study is that drug clinical effectiveness is necessary element in prescribing medicine. A research was conducted in Denmark, which derived that price is an important factor in prescribing drug and on top of that pharmaceutical industry, sales representative affects physician’s behavior. [14]

2.5 Specialty in Biological Products Storage:
Biological products at licensed establishments should be protected at all times against improper storage and handling. Completed product should be kept under refrigeration at 35° to 45 °F. (2° to 7°C) unless the inherent nature of the product makes storage at a different temperature advisable, in which case, the proper storage temperature shall be specified in the field outline of Production. All biological products to be shipped or delivered should be securely packed. [15]

3. Data Analysis and Findings:
The study outcomes revealed that among different element of marketing mix price is the key factor for choosing biological products which accounts for 33% of total influences. It is worth mentioning that biological products are more costly than that of chemical drug products and price of multinational company products (biologics) are almost 20 to 30% higher than the local company’s product. Product attributes has significant impact as efficacy and quality are crucial for the patients. Among different parameters of place effect availability and storage facility are the key.

<table>
<thead>
<tr>
<th>SL</th>
<th>Active</th>
<th>Y-13</th>
<th>Y-14</th>
<th>Y-15</th>
<th>Y-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Insulin</td>
<td>39.5</td>
<td>41.2</td>
<td>46.4</td>
<td>66.3</td>
</tr>
<tr>
<td>2</td>
<td>Interferon</td>
<td>1.83</td>
<td>2.81</td>
<td>3.33</td>
<td>3.85</td>
</tr>
<tr>
<td>3</td>
<td>MABs*</td>
<td>1.62</td>
<td>2.82</td>
<td>3.33</td>
<td>3.95</td>
</tr>
<tr>
<td>4</td>
<td>Erythropoietin</td>
<td>0.02</td>
<td>0.37</td>
<td>0.86</td>
<td>1.17</td>
</tr>
<tr>
<td>5</td>
<td>Filgrastim</td>
<td>0.08</td>
<td>0.09</td>
<td>0.1</td>
<td>0.17</td>
</tr>
<tr>
<td>6</td>
<td>Streptokinase</td>
<td>0.07</td>
<td>0.14</td>
<td>0.08</td>
<td>0.15</td>
</tr>
<tr>
<td>7</td>
<td>Others</td>
<td>0.01</td>
<td>0.04</td>
<td>0.04</td>
<td>0.08</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>43.13</td>
<td>47.47</td>
<td>54.14</td>
<td>75.67</td>
</tr>
</tbody>
</table>

* MABs: Trastuzumab, Rituximab, Tocilizumab, Bevacizumab.
Source: IMS, 3Q (2013-2016) & Internal Data
determinants. Unlike chemical drug products promotion has little impact on biological products since they are life saving medications. The following table shows the level of influence of different element of marketing mix.

Table-3 (Influence of individual elements in %)

<table>
<thead>
<tr>
<th>Sl</th>
<th>Marketing Mix</th>
<th>Influence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Price</td>
<td>33</td>
</tr>
<tr>
<td>2</td>
<td>Product</td>
<td>28</td>
</tr>
<tr>
<td>3</td>
<td>Place</td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>Promotion</td>
<td>15</td>
</tr>
</tbody>
</table>

3.1 Product Influence: From our survey it is found that quality perception of the product is the utmost priority while choosing biological products. Doctor considers manufacture image and they judge the efficacy by patients’ feedback. Export certificate or any other endorsement from recognized body for a particular product also influence the doctors while choosing that type of medication but this is not so extreme. Due to quality perception 61% doctors agreed that they prefer the products of multinational companies but 88% doctors admit that local companies are producing quality biologics. The doctors who prefer the product of multinational companies also choose local companies’ products considering the affordability of the patients. Easy prescribeable name and attractive packaging has no such impact on choosing biologicals.

Table-4 (Ranking of sub-elements of Product)

<table>
<thead>
<tr>
<th>Sl</th>
<th>Product Factors</th>
<th>Average Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quality perception of the product</td>
<td>6.62</td>
</tr>
<tr>
<td>2</td>
<td>Efficacy of the product</td>
<td>6.36</td>
</tr>
<tr>
<td>3</td>
<td>Image of manufacturer</td>
<td>4.98</td>
</tr>
<tr>
<td>4</td>
<td>Export endorsement</td>
<td>4.88</td>
</tr>
</tbody>
</table>

7= Strongly Agree, 4=Neutral and 1= Strongly Disagree. Differences among average points are statistically significant. (α=0.05)

3.2 Price Influence: This is the most important element for choosing biological products. The specialist doctors have a perception that multinational companies are very vigilant about their product quality and usually charge premium price. The doctor community also perceives that local companies who produce biologics maintain minimum quality standards as all are reputed in their class. However, local companies offer price benefit as their research investment is comparatively lower. While choosing products doctor first think about the income of the patient and then per day treatment cost. The following table different sub-elements of price factors.

Table-5 (Ranking of sub-elements of Price)

<table>
<thead>
<tr>
<th>Sl #</th>
<th>Price Factors</th>
<th>Average Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Income of the patients</td>
<td>6.44</td>
</tr>
<tr>
<td>2</td>
<td>Treatment cost/day</td>
<td>6.28</td>
</tr>
<tr>
<td>3</td>
<td>Price/unit</td>
<td>6.24</td>
</tr>
<tr>
<td>4</td>
<td>Total treatment Cost</td>
<td>6.14</td>
</tr>
<tr>
<td>5</td>
<td>Quality commensurate to price</td>
<td>4.46</td>
</tr>
</tbody>
</table>

7= Strongly Agree, 4=Neutral and 1= Strongly Disagree. Differences among average points are statistically significant. (α=0.05)

3.3 Place Influence: For biological products doctors are highly concern about availability since this type of products require special storage and supply chain facilities. They also alert that every chemist shop doesn’t have the facility of refrigeration of biological product. However, distribution network of local manufacturer are wider than multinationals; therefore, their product availability is comparatively higher which influence the doctors for choosing certain brand. The recent concept of home delivery of biological products with special storage while transportation attracts the doctors towards certain brand it is important both from availability and storage ends. Discounts at the chemist shop and counseling requirement do not influence the doctors directly while choosing biologics for his or her patients. The below table ranked the different sub-elements of place.

Table-6 (Ranking of sub-elements of Place)

<table>
<thead>
<tr>
<th>Sl #</th>
<th>Place Factors</th>
<th>Average Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Availability</td>
<td>4.92</td>
</tr>
<tr>
<td>2</td>
<td>Home delivery</td>
<td>4.86</td>
</tr>
<tr>
<td>3</td>
<td>Storage facility</td>
<td>4.64</td>
</tr>
</tbody>
</table>

7= Strongly Agree, 4=Neutral and 1= Strongly Disagree. Differences among average points are statistically significant. (α=0.05)

3.4 Promotion Influence: As per survey report, among different elements of marketing mix promotion has lowest level of influence on biological product selection. Amongst different sub-elements of promotion informative detailing by the Medical Representative ranked as the best tool. Disease awareness campaign for the patients and doctor group meeting also have significant role in promotional activities. Only 2% doctors acknowledge that physician sample can be used as promotional support and 9% doctors stated that gift may be used as promotional tool for biologics. 18% doctors endorsed that personal relation with Medical Representative
influence them to choose certain biologics (if the product quality is acceptable), 18% doctor believes that social media like Facebook, LinkedIn etc may an option for promotional campaign of biologics. The following tables rank the well established sub-elements of promotion. Some doctors claimed that more number of visits by the MR irritates them since there are limited numbers of biological products in the market place and they know all these names.

Table-7 (Ranking of sub-elements of Promotion)

<table>
<thead>
<tr>
<th>Sl</th>
<th>Promotion Factors</th>
<th>Average Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Informative Detailing</td>
<td>4.64</td>
</tr>
<tr>
<td>2</td>
<td>Disease Awareness Campaign</td>
<td>4.24</td>
</tr>
<tr>
<td>3</td>
<td>Doctor Group Meeting</td>
<td>4.12</td>
</tr>
</tbody>
</table>

7= Strongly Agree, 4=Neutral and 1= Strongly Disagree. Differences among average points are statistically significant. (α=0.05)

4. Recommendations and Conclusions:

4.1 Building Quality Perception: Biological products need to be launched by well reputed pharmaceutical companies since quality perception about the manufacturer is well considered. Quality perception about the product is a complex but very important issue; therefore, before launching a new biologics a series of campaign may be arranged to establish quality perception. Endorsement of any recognized body, factory visit by the specialist doctors, distribution of quality detailing aids, informative & attractive detailing by the MR, previous history of success may be the useful tools for establishing quality perception among specialists. Free sampling towards various hospitals may also be an instrument to increase confidence of the specialist doctors.

4.2 Price Selection: Usually multinational companies charge premium price and our specialist doctors are price sensitive considering their patients; so, pricing is very critical for biologics. Too low price may raise the question of quality, equal or high price may face different challenges; therefore, price needs to be fixed based on number of competitive brands, strength of the competitors, availability of competitors’ product etc.

4.3 Establishing Storage Facility: Before launching biologicals a strong cool chain system needs to be setup by the distributors as doctors and patients are highly concern about the stability of the product, even many doctors prefer home delivery of biologics with proper storage facility.

4.4 Ensuring Availability of the products: Biologicals are life saving drugs, there is little scope to get away even a single dose. So, doctors consider the availability of biologics at every corner of the country. At least they need to be available in big cities, district towns, upazila headquarters, big market places etc. Therefore, strong distribution network is important for biologics.

4.5 Promotion: Promotion of biologics is little different than that of chemical drugs as number of customer and their choices are different. Here, doctors are not serious about the promotional samples or gift rather they are concern about information. So, biological product marketer may reduce their promotional budget in gift or physicians’ samples rather they can invest it in knowledge based promotional campaigns like arranging scientific seminars, doctor group meetings, disease awareness campaigns, special training etc. For informative detailing by the MR an extensive training is important as they are highly technical products. It is better to promote the source of raw material if it is well recognized as doctors are highly concern about the efficacy of the products. Social media like Facebook, LinkedIn are getting popular in promoting biological products; so, pharmaceutical marketer can explore this field. Since number of biological products are limited and doctors become irritated with frequent visit by MR; so, MR can be engaged in patient counseling. Home delivery with proper storage can be promoted as distinguished feature.

4.6 Conclusions: Since biologicals are life saving products; so, along with price doctors cautiously consider the quality parameters. Although few specialist doctors have fascination towards multinational companies’ products due to quality perception but quality perception about local companies’ products is also well accepted. The availability and storage are also considerable factors as particular cool chain system needs to be maintained for some biologicals. Promotion plays least role among different element of marketing mix in choosing biologicals. Informative detailing by the MR, disease awareness campaign and doctor group meetings are the building blocks of promotion. Physicians’ sample and gift have very little impact here. If product quality is accepted then personal relations have some sort of influence in choosing biologicals. Frequency of visit by the MR does not have such influence to choose biological products. Therefore, pharmaceutical marketer needs to be very attentive in selecting price and establishing quality perception of their biological products.

Limitations: This study will not represent the entire pharmaceutical market of Bangladesh as survey was conducted only among 05 selected categories specialist doctors. Also, considering time and resources we have limit our sample size to 50.
References:


MOTOR HOSPICE: A Guideline for entrepreneurs to invest at Motor Market of Bangladesh

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Abstract - Automobile industry in Bangladesh is growing at rapid pace but quality both at production & service still has not reached to the topmost mark. Due to advancement in vehicle technology the service requirements of vehicles has become technology dependent. Moreover, demand of highly skilled workers is on the rise. This paper is focusing on build up “MOTOR HOSPICE”; it’s the market potentiality analysis and a guideline for quality automobile service in Bangladesh. To improve the existing situation of automobile business in Bangladesh, a model has been developed based on the customers of vehicles, owners of different automobile workshops; technicians involved in this business and spare parts sellers was conducted along with the data collected from internet. Necessary suggestions have been made and service center has started executing them for the improvement in current service quality level and improved their business performances.

Keywords – Entrepreneurship, Automobile workshop, Bangladesh automotive industry

I. INTRODUCTION

The Auto Repair market has a lot of prospects as well as competition. Almost all offer repair and service features. Very few have fully stocked parts owing to the problem of tied up capital in case of non-utilization of these parts. However, quick availability of parts supports the service and repair departments by allowing them to turn around jobs at a faster rate than the competition. The Auto Repair & Service Workshop business is a viable business provided that it is operated with a good business acumen that involves having a thorough knowledge and experience of the repair and service operations and also managing the jobs with the right type of skilled manpower. When these factors combine with good customer relationship management and effective business development skills, the business is expected to give considerable profits which are expected to grow over the years. This study is developed to provide the entrepreneur with potential investment opportunity in setting up and operating an Auto Repair & Service Workshop offering various services. The document also allows flexibility in change of various parameters to suit the customized needs of the entrepreneur.

II. OBJECTIVES OF THE PAPER

1) Leading the Technological services industry with constant endeavor to add value to the greater society by introducing innovative, effective and environmentally sound products and services.

2) To show unite aggressive strategic marketing with quality products and services at logical prices to provide the best value for consumers

3) To build up a friendly, knowledgeable and professional team of personnel will help, inspire, educate and serve our customers

4) Show the profitable growth through superior customer service, innovation, quality and commitment

5) Introduce technology and product with safety, reliability, efficiency; in an environmentally sound manner

III. LITERATURE REVIEW

Debabrata Bhattacharjee [2] presented at his paper establishing collaboration as a strategy for auto-service business at supermarkets. Secondary market study has been made on the retail sector, especially in supermarket segment and on auto sector in India to assess the potential and growth. The drivers of possible collaboration of auto-service sector and supermarkets have been identified. From literature it is established that collaboration gives competitive advantage. A case study of collaborative auto-service at a supermarket reveals customer confidence on such set up. The idling of vehicles at supermarkets and growing demand of auto-services could be a strategic solution to tap this business potential. Rajnish Katarne [3] shows on their paper aims at measurement of current service quality level of a typical automobile dealership in an Indian city. The study was conducted using a representative survey of respondents, owners of one of the popular brand vehicles. In this paper, satisfaction/dissatisfaction of the customer has been measured using standard statistical tools, and an attempt has been made to find out reason(s) of dissatisfaction by applying root cause analysis. Current performance of the service center was not found up to the mark. Necessary suggestions have been made and service center has started executing them for the improvement in current service quality level. Automobile manufacturers have increasingly relied on design patents to prevent competition in the aftermarket for collision repair parts. This trend has competitive ramifications for consumers and other stakeholders in a number of related markets, including automobile insurance companies and collision...
repair services. The proposed “Access to Repair Parts Act” would create a limited exception to design patent law to promote competition in the collision repair parts aftermarket. This paper provides an overview of design patents, describes the aftermarket, elaborates on the anticompetitive effects design patents when enforced by the OEMs against third party parts distributors, and evaluates the proposal. Ultimately, this paper concludes that the proposal need not deny automobile manufacturers the profits that a design patent entitles them to receive, although it would shift their collection of that profit away from the aftermarket and toward the primary market. More importantly, the proposal would likely increase price competition in the aftermarket and benefit consumers in a variety ways, including improved transparency in the lifetime costs of different automobiles in the primary market by Norman Hawker [7].

III. INDUSTRY PROFILE & PRODUCTIVITY TREND

The Comounded Annual Growth Rate of repairing of automobiles during the last five years has been 10.6% in Bangladesh. The growth rate of passenger vehicles, 4-wheelers, three wheelers & 2-wheelers, which are the major auto segments, are 14.2%, 10.1%, 5.07 & 20.2 respectively. As a result the service demand has also been growing enormously. Many professional groups are entering into this area to grab this business opportunity by setting up multi brand service outlets. So entering into this area to grab this business opportunity by

Automobile industry is facing following problems:

Investment Rigidities, Inadequate infrastructure, Lack of publicity, Absence of an integrated market development approach, Lack of Skilled Manpower for growing industry, Lack of Learning, Development & Training Institutes, Safety and health Concerns leading to customer preference issues, Reliance on Imported vehicles and spare parts, Lack of modern equipment & analyzer in this industry, Import of auto parts from overseas.

<table>
<thead>
<tr>
<th>Name of the organizations</th>
<th>Capital Invested (approx.)</th>
<th>Market Share</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Navana automobiles cng conversion</td>
<td>31 crores</td>
<td>15.6%</td>
<td>30%</td>
</tr>
<tr>
<td>2. Rahim Afrooz cng conversion</td>
<td>25 crores</td>
<td>10.1%</td>
<td>25%</td>
</tr>
</tbody>
</table>

IV. ESTABLISHMENT OF AUTOMOBILE WORKSHOP

Automobile workshops may no longer be able to operate in residential areas and occupying roads and footpaths, as the government prepares to enforce new rules to stop them causing health hazards and public nuisance. The rules came into force on March 2 following a gazette notification on an amendment to the Motor Vehicles Rules, 1984. It requires the workshop owners to arrange for space large enough to accommodate at least five vehicles, and to employ people with technical know-how needed to run a workshop. The registration certificates for workshops will be issued by a high-powered selection board headed by the BRTA chairman. For registration, an applicant must have a valid trade license, a tax identification number and financial solvency. Since the amended law stipulates that workshops keep a record of the vehicles they are working on, it might act as a deterrent to carjacking. Oftentimes, garages are used by carjackers to change the look of stolen vehicles beyond recognition. According to a statistics shown by the Bangladesh Automobile Workshop Owners’ Association, there are about 20,000 automobile workshops across the country, and of them, only some 800 are registered with that organization.

V. MARKET ANALYSIS

In our over populated country the number of vehicles also becomes overpopulated. Especially in case of private car, many people hold more than 2 or three car in his own accordance. As upon the increasing number of vehicle standard workshop or repairing business are not growing simultaneously. Every day more than thousands of vehicles are brought for repairing either for maintenance work or accidental works. Now the following table is
TABLE 2
NO OF CUSTOMER VISITED PER DAY BOTH THE LOCAL GARAGE AND TOP LEVEL WORKSHOP

<table>
<thead>
<tr>
<th>Types of Customer</th>
<th>Top company (customer per day)</th>
<th>Local &amp; midlevel Company (customer visit per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual customers</td>
<td>350</td>
<td>650</td>
</tr>
<tr>
<td>Business organizations</td>
<td>250</td>
<td>150</td>
</tr>
<tr>
<td>Transport vehicles</td>
<td>200</td>
<td>850</td>
</tr>
<tr>
<td>Total</td>
<td>800</td>
<td>1650</td>
</tr>
</tbody>
</table>

The auto-repair workshop is assumed to provide the following major services

TABLE 3
SERVICE OFFERED BY THE AUTOMOBILE COMPANIES

A. Automobile workshop unit

1) Eco-friendly workshop: This workshop section will be first eco-friendly workshop in Bangladesh. Here service, customer’s safety and health issue can look forward. Modern technology will be applied so that the total workshop premises stays neat and clean.

2) Modern Equipment: All the modern equipment (i.e. EFI Scanner Analyzer, Leak Detector, Wheel Balancer, ATF Changer, A/C Recovery and Testing Machine, Engine Compression tester, Auto Injector Cleaner.) are available at workshop so that a proper diagnosis of automobile can easily be done.

3) Shifting duty Imposing: As customers are usually busy during day time they can easily service their vehicle at night time without hampering regular activity. This ensures 24/7 customer service.

4) Parking lot: Along with the automobile workshop for various automobile, MOTOR HOSPICE will also provide parking lot facilities in commercial areas for customer convenience by targeting a niche market.

B. Automobile Machine shop unit

At present most of the workshop do not have its own machine shop unit. As a result for little servicing it requires huge time to fetch spear parts from shops around the city. So a built in machine shop will be set.

C. Automobile training institute

1) Practical session: Participants can see practical things at the workshop side and can do practical on workshop as well.

2) Vocational training for meritorious and drop out students: In Bangladesh the percentage of drop out student is high. Moreover good students are reluctant to build up career by vocational education. So it is possible to draw their attention on training section with some attractive package

3) Vehicle User training: Customer can know different safety information & maintenance tricks of automobile by training (through brochure, presentation & festoons) on driving habits, weather & road condition awareness, car’s performance.

D. Automobile customer care unit

1) Road to Workshop service: If any vehicle starts malfunctioning on road and requires repair, in that case a carrier will go and get that vehicle to workshop.

VI. MOTOR HOSPICE MODEL
2) Door to Door Service: For providing door to door service to premium members, a group of trained technicians will be provided to the apartment/some specific location of an area to check the condition of the car.

3) Mobile Service: Customer can get the modern information of their car, latest service package offered by the workshop can be informed. A call center can be developed where a group of technicians will take the information of the customer’s vehicle and give some suggestion over phone.

E. Automobile OEM unit

Spare parts that are not usable they can be recycled & reconditioned. After that, Automobile spare parts can be produce by local experts. There is another opportunity to expand this business to an Original Equipment Manufacturer (OEM) unit.

VII. KEY SUCCESS FACTORS

The main objective of an Auto Repair Workshop is to offer a hassle free quality repair and service operations that eliminate waiting on part of the customer and help to offer value added services to the customer who need their cars fixed right away. The following factors need a continuous focus for making the proposed setup a successful business venture:

A. Growing and Maintaining a Referral Network of Customers

The main factor is to attract and maintain a loyal customer base through a customer-oriented focus on business rather than concentrating on volume and losing out old customers. All the workers at the workshop need to be trained and held responsible for providing superior service and developing long lasting trust bond with the customers. This is very important in this industry, where trust and honesty reflect on the image of repair and service facilities.

B. Expedient and Convenient Auto Repair & Service Facilities

This business is very unique in the sense that switching costs are almost negligible for the customer hence the main effort required is to maintain and enhance customer loyalty by providing quick and quality services.

C. Auto Parts Inventory

An adequate auto parts inventory based on prior experience and business volume needs to be maintained in order to give quick service and prevent any inconvenience caused to the customer. Moreover, quick accessibility to used / new auto parts is another important factor that enables to provide hassle-free service to the customers. However, the entrepreneur needs to carefully manage the auto parts inventory to ensure that minimal working capital is tied up. Some workshops usually keep auto parts for the most common car brands while parts of less common / unpopular brand are usually made available on call basis.

D. Marketing Skill

South-Asia is becoming a Hub of Automotive Industry because of the largest three-wheeler market, second largest two-wheeler market & fourth-largest commercial vehicle market in the world. Bangladesh market in this sector is also emerging. At the initial stage Motor Hospice will first follow niche marketing strategy by setting workshop location in commercial area for getting maximum attention by providing 24/7 service and proper parts along with ensuring positive customer experience. A reference group will be created through branded automobile sellers, corporate partnerships and customer relationship.

Marketing is the most crucial and the trickiest area in a business. Many under estimate the value of marketing and many over spend on this. Primary reason for the wrong approach towards marketing is the lack of understanding about the market. Generally the customers are divided into 2 categories: Institutions and Individuals. Some key players in the industry have tried TV commercials and print ads to build their brands. But these means are very expensive for an automobile servicing company.

VIII. RECOMMENDATION

Overloading could be avoided in two ways. One is by capacity adjustment, another is by technology change. Capacity adjustment can be done by resource expansion i.e. by increasing workforce & tools/equipment. But due to space constraint at service center, no further resource expansion is possible. Hence, the only alternative left was to increase the number of working hours (shifts). It has been suggested to check the feasibility of adding one more shift to ensure smooth loading and better quality. Considering the load v/s capacity situation, service center also needs to acquire latest technology, e.g. presently at service center washing & cleaning of vehicles is done manually, it can be replaced by automated washing plant. By doing so, it will have the advantage of time and quality both.

IX. CONCLUSION

The main aim of this research was to measure current service quality level of an automobile dealership in Bangladesh. The research was focused on establishment of new automobile business. However, it has been observed that most of other factors will be automatically taken care of once the suggestions mentioned above are
implemented. Service center has already executed the first suggestion, i.e., working in double shift, and apparently, seem to have attained good improvement. Further analysis will be carried out to assess the quantum of improvement in service quality level.

REFERENCES


Prospect and Sustainability of Social Business in Bangladesh Context

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Abstract – Bangladesh is a developing economy and poverty is one of the harsh social phenomena and realities. To overcome this situation we can take an unconventional path – Social Business. Though it is relatively a contemporary concept, it is becoming well known around the world. Like as micro-credit or micro-finance, Social Business can become one of the next effective tools to solve a massive problem like poverty. The purpose of this study is to figure out the present context of the Social Business in case of Bangladesh and what steps should be adopted to make it more workable.

Keywords – Social Business, sustainability, poverty

I. INTRODUCTION

“End poverty in all its forms everywhere” is one of the Sustainable Development Goals and Bangladesh is doing good in this regard. Though poverty is an inevitable truth in our society, no matter what, we are very eager to get rid of this situation. According to the World Bank, Bangladesh’s extreme poverty rate has dropped to 12.9 percent of the total population in financial year 2015-2016 from 18.5 percent in 2010 [1]. Out there, many economic concepts are available to tackle this problem and one of the contemporary concepts is Social Business. It is a type of business, where the purpose of running the business for the benefits of others rather than for the owner of the entity. It runs to serve the humanity and for social welfare. One of the integral features of Social Business is - it earns its own profit for its sustainability. Here, the investor won’t be benefited from the business or from the profit it makes. It is different from philanthropy for its self-sustaining nature – that is, it will generate sufficient amount of profit or income so that it can cover up its own costs and in some cases it may expand its business volume.

So, Social Business can be best described as a non-loss, non-dividend business with a social objective. The profits that are acquired by this kind of business stays within it. Companies like these don’t give out dividends to the shareholders. They can only get back the amount they have invested. A Social Business company needs to be profitable, as it will have to cover up the different expenses and re-invest the profits for expansion of the business [2].

Nevertheless, Social Business will bring positive changes in the society and for the disadvantaged groups of the society. It is not like any conventional NGO’s or charitable organization which depends on donor fund for its survival, rather it takes a bit unconventional approach to doing business. That is, it will earn its fund for its own charitable or social activities. Though donor funds are shrinking day by day, this concept is much more appropriate to tackle a social problem like poverty.

II. OBJECTIVE OF THE STUDY

The intention of the study is to comprehend the present context and innovative natures of Social Businesses in Bangladesh. In this connection, what will be their future prospects and survivability? Furthermore, attempt has been made to figure out the flaws and recommending more workable solutions.

III. LITERATURE REVIEW

In the capitalist system, two extreme types of corporate bodies can be distinguished. On the one hand, companies can be seen as profit-maximizing businesses, whose purpose is to create shareholder value. On the other, non-profit organizations exist to fulfill social objectives. Established multinational companies (MNC) have recently shown some interest in the Grameen experience and in its fight against poverty as part of a more general emphasis on corporate social responsibility (CSR). However, shareholder value maximization remains the rule in the capitalist system, and clearly the reconciliation of this with social objectives is often problematic [3]. Nevertheless, research has shown that, if managed strategically, CSR projects can indeed pay off, both socially and financially [4]. Some pioneering established companies have sought to implement more pro-active CSR policies that anticipate social trends and go beyond the minimum required [5]. One strategy for promoting such pro-poor growth that is attracting increasing attention is social business. It is intended to solve social problems that are often associated with poverty by mobilizing market principles [6]. So, Social Business will play a significant role in the economic development of poor people and eventually alleviate poverty.

IV. METHODOLOGY
The study is qualitative in nature. It is based mainly on primary as well as secondary sources of data analysis. Questionnaire surveys (open ended questions) and field visits have done for primary data collection purpose. In addition, an expert interview has also been conducted for better understanding of the situation. This study also depends on secondary data sources like as – journals, articles, newspapers, books, etc. Though it is a qualitative oriented analysis, all the data have been accumulated from both primary and secondary sources and have tried to get a better insight of the situation and come up with proper comments on the sustainability and prosperity issues of the Social Business arena in Bangladesh context.

V. MISCONCEPTION ABOUT SOCIAL BUSINESS

In the modern corporate world, there are lots of business concepts. Among them, figuring out the differences between conventional business and Social Business, is very difficult. So, if we start discussing about their similarities then it will be easy for us to point out their differences. There are many similarities between them such as from marketing perspectives, stresses, challenges within the business. But Social Business is not bound to make a profit due to its unique nature. As it works for social causes and its development, Social Business investors don’t get panicked due to the downfall of the business sector or share prices. There is no personal benefit or stake relate to share price, as because they only get back the money what they have invested irrespective of devaluation of money value. The purpose of the business is to do social welfare and charges its beneficiaries as affordable as possible – but not reducing the quality of the products or services of the business [7]. In some cases, Social Business has to charge different sets of prices for the same product in terms of the social income strata into which its customers belong.

Social Business will eventually bring changes in the conventional system, i.e. capitalism. It will tweak out flaws from the capitalist economy like as eradication of poverty, which is a drawback of capitalism. Social Business is different from social entrepreneurship or social enterprise. Because it is a non-loss, non-dividend type of business and earns its own cost and earns its own cost for survival. It is also differentiated from foundation, NGO, Charity works – these all run on donor funds. In contrast to a Social Business which creates social benefits and side by side generating formidable income to cover its costs. And over the period of time, it will repay back its primary investment to the investors without any profit or dividend. In a donor based organization, most cases, donors are not willing to make profits out of the charitable project or program, they only like to do social good for a period of time and as far as the fund continues.

Thus, a Social Business is designed and operated just like a “regular” business enterprise, with products, services, customers, markets, expenses and revenues. Here, it differs from NGOs, most of which are not designed to recover their total costs from their operations, and are therefore obliged to devote part of their time and energy to raising money. As it seeks self-sustainability, a Social Business only relies on its investors at the beginning of a development project [3].

The concept of “social entrepreneurship”, defined by Mair and Marti as “a process involving the innovative use and combination of resources to pursue opportunities to catalyze social change and/or address social needs”. Social Businesses can be seen as a subset of social entrepreneurship, which includes both profit and not-for-profit initiatives, and which can be distinguished from conventional entrepreneurship through the “relative priority given to social wealth creation vs. economic wealth creation. In business entrepreneurship, social wealth is a by-product of the economic value created” [8]. All those who design and run Social Businesses are social entrepreneurs - but not all social entrepreneurs are engaged in social businesses. Multinational companies merely seek financial profits, and social profits are only a by-product of economic profit [3].

Apart from that Social Business has some principles which are developed by Dr. Muhammad Yunus, noble laureate and Hans Reitz, director of the Grameen Creative Lab (GCL) in Wiesbaden, Germany. There are seven principles of Social Business, these are –

1. The business objective is to overcome poverty, or one or more problems (such as education, health, technology access, and environment) that threaten people and society – not to maximize profit.
2. The company will attain financial and economic sustainability.
3. Investors get back only their investment amount. No dividend is given beyond the return of the original investment.
4. When the investment amount is paid back, profit stays with the company for expansion and improvement.
5. The company will be environmentally conscious.
6. The workforce gets market wage with better-than-standard working conditions.
7. Do it with joy.

At the very end of the principles is to do the Social Business with joy and happiness. It is another difference of Social Business from the conventional businesses. When people want to learn about Social Business this will be their guiding system. They serve as a touchstone and
work as a remembrance of the usefulness of the Social Business [9].

VI. WHY DO WE NEED SOCIAL BUSINESS?

Undoubtedly, poverty is one of the biggest challenges for Bangladesh. After all, fighting with it for a long period of time, it is still a crucial problem. Despite cutting the rate of extreme poverty from 34 percent in 2000 to just 13 percent today, 20 million Bangladeshis still live in conditions considered to be ultra-poor. Living on less than Tk. 43 per day can be immensely difficult, and for some, it can create a trap that’s almost impossible to escape [10].

Social Business is therefore an appropriate new response for poverty reduction because it provides sustainable solutions (revenue from the activity must cover the capital investment and operating costs) and there should be option for replication. The business will have learned from its initial experience and the money to finance replication will be available once the capital initially invested is accumulated again. Organizers have to address innovative issues and react with an entrepreneurial approach leading to a creative tension where Social Business can emerge. Social Business can be seen as a combination of community based approaches and organizers’ lucrative innovations [11].

Social Business can be built around the desired level of population segment – maybe they are poor, elderly, single mothers, homeless, unemployed, or those who lack healthcare. By starting with the targeted segment of the population and try to find out what they require. The goal is to find a product or create a service that empowers the target group. The target group not just consume what is offered to them, but that gives them the chance to earn more or save more that they spend on the offered product. This extra money can be utilized by setting up their own businesses, increasing their income and giving them a chance to become financially independent. The product could also be related to education or information, which can enable customers to create more value through their economic activities. It could be related to healthcare, enabling them to work more productively. It could be access to electricity, machinery, or modern technology. Social Business is not motivated in selling a product. Rather, it empowers people by helping them get better access to the markets of the developed world, or by giving them good jobs, or by giving them income through business ownership. In all these cases, the ultimate goal of Social Business is to facilitate less-fortunate people to capture a large part of the value chain [12].

VII. SOME CASE STUDIES ABOUT SOCIAL BUSINESS

“Aparajita” is a Bengali word, means “Undefeated or Unconquered”. Like as the name the first case study of this paper of Social Business is a very small startup by two sisters - Rumana Khatun and Shima Akhter, producing sanitary napkin for rural women in the name of “Aparajita”. They are living at Sarishabari Upazila of Jamalpur District in Mymensingh Division. Their small enterprise having some characteristics which ultimately match with the Social Business criteria such as – they are producing sanitary napkin for rural women in affordable price range, which are cheaper than a conventional sanitary napkin. They are creating awareness among young girls and women in the rural areas about the menstrual hygiene issues. Not only that they are employing around 21 people of their surrounding areas who are poor and making their living out of this business. The business is situated at the house of these two girls. So, the working environment is homely and better than standard working conditions. Their working time is also very much flexible. They come to work whenever they find leisure time after fulfilling their other engagements with family, study, etc. The business is already self-sustaining by itself. It does not require any external financial support to conduct its activities. They are making sustainable profits. The product they are producing is environment friendly and biodegradable other than the packaging materials. Moreover, they are having pleasure and joy in doing this business. So, it has been noticed that their enterprise is changing the conventional system in positive ways and having good impact within the society.

The second case study is not a small scale rural start up, it is very much a mature organization. Working both national and international arenas. mPower is a social enterprise which was founded by Harvard University and MIT graduate student as a project. After that it has been transformed into a social enterprise and has operations in eight countries around the world. It has come to Bangladesh in 2010. mPower is an IT company which develops its solutions for strengthening government and organizational service delivery capacity and to introduce ICT based support to end users. mPower works along with Ministry of Health, Bangladesh to provide IT solution to its frontline health sector workers to integrate information. In this regard, they are introducing an “Open Smart Register Platform (OPENSRP)” to Bangladesh. OPENSRP is an open source mobile health platform that allows frontline health workers to electronically register and track the health conditions of their entire client population. Not only that they are providing IT based solution to farmers regarding their livestocks and providing veterinary services. They are using innovative features like “Human Centric Approach” to provide
unique solutions to their respective clients. So, mPower which ultimately using the mobile power (mPower – mobile power) or IT solution and information to bring positive changes within the society.

In addition, an expert interview is conducted on Mr. Shaikh Saif Al Rashid, who is presently working as founder and managing director of a Social Business called “Apon”, former founder and CEO of JITI Bangladesh and also an Ashoka Fellow. Because of this interview, have come across and encountered different insights about the Social Business field due to his extensive experiences in this sector. During the interview, Mr. Rashid discussed the Social Business issue by bringing up two questions – what are the purposes of conducting Social Businesses? Another, how Social Businesses are operating their activities to achieve its purposes? So, the purpose of Social Business is doing welfare of the society at large. The motive of doing well for the society is also done by NGOs’, Corporates as a part of their CSR (Corporate Social Responsibility) activities, Charities, etc. They are doing it before the commencement of the Social Business concept. Now-a-days, there are lots of Social Businesses, but finding out a social business with proper features in Bangladesh, is very difficult. Surviving in this current economic system with particular intentions like as – making adequate profit, providing no incentive to its owners or investors and ensuring sustainability is a very difficult job. Overall, there are many Social Businesses out there in Bangladesh but there is no legal framework, so no obligations of organizations to follow certain protocols. In addition, there is no objection or legal restriction for naming these types of organizations as Social Businesses without fulfilling the basic principles. In his opinion, to becoming a Social Business it should have innovative natures and it is very much challenging to make it sustainable. Not only that the business should bring positive changes in the society and bypass any manipulative conventional bureaucratic system. In general opinion, the business should bring positive changes within the system.

VIII. FINDINGS AND SOME OPINIONS

In the end it can be opined that, finding out a Social Business in real life is very difficult after fulfilling all the criteria in accordance with the principles developed by Dr. Muhammad Yunus. Every Social Business needs workable innovative idea to function in this dynamic economic environment and finding a workable innovative idea is difficult. Not only that, small scale startup Social Business has lack of market analysis and short sighted about their coming future. They don’t operate like profit oriented business organization and concern about their break-even point. But Social Business is much more than a conventional profit making business organization. Because, it has to make profit and serves for social causes. For example: mPower which uses its innovative Human Centric Design Approach to produce IT solutions for its beneficiaries and uses extensive in house market research team to find out where it can use these solutions. So, ultimately it can sell the product other than a particular field and make a profit even if sell at a reasonable price. This sort of approach cannot be possible by small scale startup like two sisters in Jamalpur, Bangladesh. Another thing is that there should be legal frameworks to define and monitor Social Business sector. Otherwise, there will be misconception and misdirection regarding the issue. In our society, we have to encourage creative people to involve in Social Businesses. But due to misconceptions, challenges and no certainty about success, potential people and the young generation are discouraged to enter Social Businesses. Not only that, there should be easy loan facilities provided by the Government to encourage people to start Social Businesses. Government should patronize this sector to reduce the poverty level. Proper training and support facilities should be installed to encourage this new economic concept.

IX. CONCLUSION

Finally, Bangladesh economy is in its growing stage. In this scenario, removing poverty and all its demerits is essential. Social Business can be a weapon to eradicate poverty from our society. It will act as a mechanism of creating employment for the people who are involved and as well as for its beneficiaries. Societal problems act as impediments for the society and for its economic growth. Social Business will address these problems of the society and removing them. People from different levels of the society can play roles through the help of Social Business to take part in the betterment of the society at large.

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Design and Implementation of an Automated Customer Relationship Management System

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Abstract — This paper proposes an automated customer relationship management system (CRM) to help maintain a good relation with customers. CRM can help any organization to survive and grow in a competitive market. It helps to know and treat each customer uniquely and effectively, resulting in a long-term fruitful relation with customer. This requires knowing the preferences of the individual customer. Making a successful CRM is very challenging as information about customer’s preferences and behavior often difficult to obtain. In this paper we implemented a CRM system that can automatically communicate with present and future customers based on the information it has in its database. Making a database with the latest information about customer’s trends and choice is crucial. This includes collecting data from various sources and then analyzing the data. Using modern computing techniques like data mining and web analytics, customer’s likes, preferences, behavior can be discovered. This information can be used to effectively communicate with the customers and it can help management decision making. The methodology was implemented in this CRM system and found that it was very helpful in maintaining a good customer relation.

Keywords — Customer interaction, Customer Relationship Management, Data mining, Web analytics, Management decision making

I. INTRODUCTION

Customer Relationship Management (CRM) [1] is a strategy for managing a company’s relationships and interactions with its customers and potential customers. It helps to improve profitability. By CRM, we mean E-Customer Relationship Management (eCRM) that is based on Internet and software technologies. CRM enables a company to focus on its organization’s relationships with individual people – whether those are customers, service users, colleagues or suppliers. Some of the biggest gains in productivity can come from moving beyond CRM as a sales and marketing tool and embedding it in one’s business, from HR to customer services and supply chain management. This system can be used by an organization for several benefits, for instance:

- To build up a good relationship by communicate with customers
- To find a centralized e-mailing system to the customer
- To inform business offerings, new or discounted product to customers
- To categorize customers according to their product interaction
- For marketing automation
- To notify a customer of product shipment status
- To facilitate location base service
- To know region base product popularity
- To help predict about for specific product in a specific zone

Many researchers and engineers are working with CRM. As a result such systems are gaining popularity day by day. But after investigating the systems currently available for CRM, we found that most of them are using old technology that is why those are not adaptable in current development trends like:

- Fast data manipulations
- CRUD system without webpage
- Mail template system
- Fast application loading
- Application security
- Enjoyable UX
- Information retrieval from Web
- Data mining

We have tried to overcome these limitations and develop a modern and effective CRM system with best User interactivity.

Several scholars has published research findings about successful CRM. It was found that if CRM only focuses on technology solution, then it will not be very effective. Also if CRM is designed in such a way that it only works with sales and marketing department, and it follows one-one correspondence scheme [2] then it will also fail to maximize the customer satisfaction. In this respect authors in [3] proposed a CRM that is focuses on people, process and technology, to maximize the effective interaction with customers. Such CRM should bind together R&D, marketing, finance, sales, service,
operations, HR, Information technology and Internet services. Bhardwaj and Prakash [4] published a research paper that demonstrated the importance of eCRM with the help of a qualitative study. They showed that the effective use of eCRM can dramatically improve the quality of business and increase profit. A research paper published by Schmidt et al [5] showed that many countries are reluctant to cloud based CRM in spite of its benefits. They discussed the core influencing factors of cloud CRM and their finding can be used to make a secure and efficient CRM. Our proposed system can be very well integrated with a cloud based server. Furthermore, authors in [6] described a social CRM keeping customer engagement in focus. They urged that earlier CRM did not take into account this important factor. Any company now can take the advantage of web 2.0 and data mining technology to mine social networks, blogs, wiki etc. in order to make sure customer engagement. That is why latest CRM software are incorporating social CRM features.

In this paper we proposed a CRM that incorporates the features describe by the above mentioned research papers. The methodology section describes the procedures we followed in building the proposed CRM. The result section describes the software we implemented for this CRM.

II. METHODOLOGY

Our CRM software is web based. The reason for choosing web based design is portability. We can access the CRM anywhere and anytime on any device. To build the desired CRM, we had the following requirements:

- Hardware requirements
- Software requirements

Hardware requirements:
- Server System
- Internet Connection

Software requirements:
- Operating System: Windows 7/8, Linux Mint
- Web browser: Mozilla Firefox/Google Chrome/Internet Explorer

We used the followwe programming technologies to build and make it robust and user friendly:

JAVA: JAVA is an object oriented high level programming language. We used java in server side for the purpose of implementing information retrieval and knowledge discovery algorithms. Our CRM make use of data mining and web analytics for discovering information about customer, this is called data mining.

PHP: PHP is a widely-used scripting language initially designed for Web programming. We used PHP for backend programming and accessing database.

MySQL: Web application heavily uses the functioning between a user and services provided by the server, which contains a database as its backend. As our CRM demands lots of data to store in database, we chose most reliable database technology MySQL. MySQL also ensures the security we need in our application & most importantly faster access of data.

CSS: CSS stands for Cascading Style Sheets. Styles define how to display HTML elements. As our CRM will be web based, using CSS we can make great user experience.

JavaScript: JavaScript is the programming language of the Web. It is easy, powerful and object oriented. So it can be used to build complex and sophisticated systems like CRM.

jQuery: jQuery is a quick, tiny as well as feature-rich JavaScript library. We used it alongside traditional JavaScript for ease of maintenance of our CRM project.

Entity-Relationship Diagram (ERD):
ERD is a pictorial representation of entities and their relationships to each other in regard to the organization of data within databases or information systems [7].
The basic elements involved in an ERD are defined as follows:

Entities: they are real-world objects with common properties.
A relationship: it is an association among several entities.

Attributes: they are classes of values that represent atomic properties of either entities or relationships. Figure 1 shows ERD for our CRM.

Dataflow Diagram:
A data flow diagram is a graphical representation of the flow of data through an information system, modelling its process aspects [8]. Our CRM uses several user information that flows from one module to another according to classification rules.

Figure 2 shows the dataflow diagram of our CRM.

Figure 2 shows the dataflow diagram of our CRM.

Trivial information, like birthday, anniversary etc. can be used as a scope to wish a customer on these special days. This will increase make the customer feel valued. But to know what customer like or hates, what is his preferred trend etc. we need sophisticated techniques. That’s why we need data mining and other computing techniques.

Data Mining and Web Analytics:
The proposed CRM will try to find information about a customer form web. For instance, customer’s Facebook and Tweet profile may be investigated to find his preferences and taste. To achieve this we need some special techniques, such as data mining and web analytics. Data mining [9] is a popular technique that helps to discover patterns from a large set of data. With the help of data mining we shall be able to know our customer better. Customer’s interest, likes, dislikes, preferences, trends, sentiment etc. can be known and predicted using data mining. Web mining is also a data mining. It tries to find new information from the web resources. For example, customer’s digital fingerprints on the internet(WWW) can be collected and analyzed to find information about the customer. The CRM can make use of web analytics [10].

It is the measurement, collection, analysis and reporting of web data for purposes of understanding and optimizing web usage. It can be used as a tool for business and market research, and to assess and improve the effectiveness of a website. So, the website related to our customer can be the

Figure 3: CRM uses data from multiple sources

Figure 3: CRM uses data from multiple sources

subject of web analytics, so that we can find useful information about our customer.

Figure 3 shows the block diagram of the CRM that makes use of data mining and web analytics to discover customer’s preferences and opinion.

Various data mining methods are available in the field of computer science. For example, feature extraction, market basket analysis, cluster detection, genetic algorithms, link analysis, decision trees, neural nets and memory-based reasoning are very popular and effective. Here we choose feature extraction technique using term frequency-inverse document frequency [11] to determine sentiment of customer’s social media posts. Google analytics [12] is used for web analytics to discover user behavior in various websites. Lastly, Apriori algorithm [13] is implemented for customer analysis.

Using all the information collected from customer and generated by processing data, we can communicate with our customer in a more fruitful way. We can offer the customer according to his taste and preference. This information will also help management decision making. Customer satisfaction will be understood more precisely. This will pave the way for sustaining in the competitive market.

We tried to implement these features in our CRM. The resulting software is described in the result section. The software can categorize the customers according to some predefined criteria. Then, according the information that we have at hand, form web and from personal field study, the software will give us suggestion. This includes communicating with the customer and suggesting customer’s positive or negative feedback regarding our products.
III. RESULTS

The application software was built using various programming language. It is a web based software with server that does all the real time analysis.

Figure 4: Dashboard of CRM application software

In the following description, the application software is pictorially demonstrated.
Firstly the application has an attractive interface. The first page has sign up and sigh in options. In this place admin must have to login with email and password to manage the entire system. After login admin can see this dashboard interface where he/she can get the statistics of entire system like percentage of customer in individual groups, total groups, customers, today birthday of customer etc. which is shown in figure 4.

New customer data save through a form as shown in figure 5. In this form admin will enter the customer information and save it to system.

Figure 5: New customer data entry

The page shown in figure 6, shows to admin the total number of customer paging with 10 customers per page. The data will show up in descending order. Each record can be edit or delete by clicking the record action buttons.

Figure 6: All customers’ description shown

Admin can add, edit or delete group name in single page without any page refresh. Admin can assign, update or remove a customer in a group. A customer can be added in different group but not allowed in a single group twice. This is shown in figure 7.
The admin can save the mail template for sending to customer regular or future, as shown in figure 7. One can save the mail template for sending to customer. Figure 8 shows a snapshot of email sending. The admin can also send a mail to a group using group email sending system, it will send a mail to all customers who are added in selected group, as shown in figure 9.

IV. FUTURE PLAN AND CONCLUSION

This CRM software has some limitations. In future we will try to overcome those limitations. For example, information retrieval and data mining feature will be made accurate and efficient so that those features can help us to find useful information about market and customer. Besides, sentiment analysis technique can be extended to include more data from social media, web and local information to discover customer satisfaction regarding our products. Also to know the emerging trends in the customer preferences, more efficient data mining algorithm can be used. Moreover, communication with the customer can be made more interactive so that the customer does not feel irritated. This may be achieved by combining online and offline communication by understanding customer’s need and preferences.

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The Convergence Project: Arguments For and Against the Harmonization of the International Accounting Practices and Policies

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Abstract - Investment is no longer done within a boundary rather the number of oversea investment is increasing. Thus, the concept called globalization comes in and creates the need for harmonization of international accounting practices and policies. There are arguments both supporting and opposing harmonization of international accounting practices and policies. To have a further look into the matter, exploratory qualitative research has been conducted. Secondary sources have been the tools to analyze both pros and cons in details. The objective of the study is to analyze both pros and cons of harmonization and whether the pros outrun the cons or not. Researchers and financial analysts, who are in need to do further studies and reach a conclusion, will get benefited by this research study. To conclude, the importance of convergence of international accounting practices is undeniable.

Keywords - Harmonization, Convergence, International Accounting.

I. INTRODUCTION

The world is moving forward at an amazing rate. The investors no longer want to invest within the boundaries of their own country, but rather reap the rewards from their investments not just domestically but also in the international market. This leads to an ever increasing number of enterprises taking part and making active contribution in the international market which in-turn results in higher cross-border trading as a whole. This describes to an extent what the broad concept of internationalization is all about [20]. There are a lot of theories contributing to internationalization, namely - Raymond Vernon’s Product life-cycle theory (1966); Absolute cost advantage and Comparative cost advantage theories (Adam Smith, 1776 and David Ricardo, 1817 respectively) and Economies of scale among many others. As investors delve into the international markets and sell or invest in foreign securities, a common list of accounting principles become a necessity. This is because financial statements prepared in accordance with the local norms and customs leads to information asymmetry. Information asymmetry can have economic consequences because uninformed investors will suffer from message distortions due to reporting differences and problems of comparability owing to differing accounting norms and customs. This may ultimately lead to poor decision-making in terms of their investments and their transactions going askew, thus reducing the efficiency of the capital market [8].

In order to significantly reduce misinformation and information asymmetry and promote an improved international financial reporting, a set of narrow accounting standards had to be established. This is where the project of the convergence of the accounting standards comes in. Convergence, which was previously was termed as harmonization during the first quarter century of International accounting Standards Committee (IASC), refers to instituting a single set of accounting principles which can be used globally with particular importance given to reducing the differences between the IASB and the FASB because of the great significance of the US capital market to the future IFRS [21]. The goal of the convergence project is to create a level playing field by producing a set of high quality accounting standards leading to first-class information for the global stakeholders. The project will also help eliminate cross-border trading barriers by ensuring trustworthy, transparent and more comparable company accounts thus improving the competitiveness among the companies. This will in turn contribute to a positive economic growth, better market efficiency and a lower cost of raising capital [6].

II. CONVERGENCE PROJECT AND ITS IMPORTANCE

One of the biggest social revolutions in this era is globalization which has tremendous impact in the global economy. It requires the financial reporting system to be constantly updated and standardized. So, international harmonization of accounting standards appears to be inevitable. There are the two main systems which are disputing the first stage of being the benchmark: GAAP and IFRS. Each of these reporting systems has his pros and cons on being the practiced one. Due to this fact a convergence of the two,
joining the advantages and disadvantages of the two should be the solution for a unique international accounting solution. Reference [21] says, ‘Convergence’ is a term that gained currency in our field in the late 1990s. The earlier term was ‘harmonization’, which was used during the first quarter-century of the International Accounting Standards Committee (IASC), beginning in 1973. Today, the IASB, the FASB, and other national standard setters regularly use the term convergence, which means the increasing compatibility of their respective standards at a high level of quality.

Every organization across the world follows some accounting standards while reporting their transactions. Many organizations have their own reporting systems and standards but there is a big problem with it because it will become very difficult for the other users like the investors, government, suppliers or other financial agencies to interpret their performance. If every organization follows a standard system then this problem can be solved very easily. To solve this problem, the concept of harmonization of accounting standard came. Reference [17] says, “Harmonization involves formulation of accounting regulations which in material respect are similar to those of other country”. For this reason most of the countries actually adopted a standard while reporting financial statements which is International Financial Reporting Standards (IFRS) which is actually monitored by a board which is International Financial Standards Board (IFSB) [17].

Although most of the countries follow principle based accounting system, but United States of America which is one of the biggest economies in the world, is not into it yet. This might happen because their regulatory system is very strong compared to other economies. Reference [1] shows “The cornerstone argument for harmonizing US regulatory standards to a more principle based system is simple: the United States is basically the only economically developed country that utilizes a strict regulatory system. While it is true that most countries use a principle-based accounting structure, it is also true that most of the countries didn’t generate $9.8374 trillion in Gross Domestic Product (GDP) in 2003. In fact, the United States’ closest competitor for pure scale of economy and raw production power is Japan at $4.8416 trillion in GDP”. So from this we can see that without harmonization of accounting standards, USA is still generating quite lot money by using GAAP. In order to move away from the GAAP accounting standards, the incentives of international harmonization must outclass the negative impact of GAAP.

Accounting standards are important in a well developed capital market and having a fixed set of rules achieved through synchronization will greatly reduce agency problem. Comparability of financial information across various countries over the world will be the most important gain of harmonization. This is because there will be an end to the present confusion regarding the trustworthiness of financial reports that are prepared according to the varying financial reporting rules and regulations of different countries. This is going to result in the savings of both time and money spent on preparing separate sets of financial reports. Greater transparency and reliability of financial information will remove the obstacles of raising capital from foreign capital markets and cross border trading in securities, as financial analysts and international investors can better evaluate investment opportunities [17]. This is evident through a study which revealed that the magnitude of the forecast error of financial analysts’ forecasts was smaller following the adoption of IAS [3]. Better forecasting will result in higher investors’ confidence and this will boost up the efficiency of the market and decrease the cost of raising capital from overseas market.

In short, the harmonization of international accounting practices and policies will provide firms access to raise money from overseas capital markets; enhance comparability, clarity and reliability of financial reporting standards; boost up market efficiency and of course, reduce the cost of capital.

III. OBSTRUCTION IN IMPLEMENTING CONVERGENCE PROJECT

The arguments going against the harmonization of international accounting practices and policies are mainly related to comparability and convergence. When further looked into the issues of comparability, there are four cultures which have the potential to greatly hinder its objectives and must be taken into consideration. They are the business and financial culture, the accounting culture, the auditing culture and lastly the regulatory culture [21].

There are certain differences across countries in the way business is conducted in their supporting financial markets with respect to business and financial culture [21]. This leads to differential accounting treatments of financially material items, for example, the practice of omitting major tangible assets from the balance sheet as it is operated under lease finance is common in the USA, but even lacks country wide comparisons. Countries also differ in executive compensation packages due to different business customs and corporate cultures, for instance, the Japanese and Korean cultures of keiretsu and chaebol respectively represent the networks of companies with interlocking relationships, where it is unclear who the holding company is (if there is one!) Furthermore, issues regarding business and financial culture include public versus the private ownership of enterprises, the valuation of assets on a fair basis where value of assets is difficult to ascertain due to lack of market...
and many more. These differences act as a deterrent to the objective to comparability.

Accounting cultures have significant impacts on how the financial statements are prepared, such as asset impairment losses are tax deductible in Germany but not in the UK [16]. This could lead to a perplexing situation for German companies to recognize impairment losses where UK companies might not. In another instance, differential tax treatments are given in different countries when using the percentage of completion accounting and stages of completion accounting.

Moreover, significant differences remain in the auditing culture among countries. External auditors in many circumstances did not issue a qualified report even if the company’s financial statements departed from national accounting standards whereas some auditors in other countries did qualify for not adhering to just one or two IAS [21]. In some countries there may be a deeply held view or value that accounting choices should be responsive to a company’s circumstances which directly challenges the achievement of the objective of comparability.

Lastly, the regulatory culture in some countries namely the USA is very strict and employs a large number of staff to oversee the financial reporting mechanism of the listed companies and has significant authority. Whereas in many countries there is no such existence of boards to oversee this function and if there is one it is of very small scale and lacks sufficient authority [21].

Among many others, problems of interpretation, problems of language and terminology, adjusted earnings measures, the role of SEC, and the impact of politics are some of the issues being faced during convergence [21]. Problems of interpretation challenges the achievement of convergence as regulators are different for different countries and each may interpret the IFRS in their own way lacking exactness. While translation of IFRS into other languages from its original English could be very difficult and in some cases particularly demanding, especially when taking care for specific phrases like ‘true and fair view’ since the spirit is more important rather the exact translation. Accounting practices involving using alternative earnings measure to smooth year to year trend is not disallowed by the IFRS which can deter convergence. Although SEC is the main regulator for the implementation of IFRS, it is facing severe difficulties in bringing the European and American bodies under one roof. Last but not the least, the political influences large business and nations have over the standard-setting bodies like IASB and the FASB acts as a deterrent to convergence and not to mention profoundly hinder the ultimate objective of fair reporting.

In short, the convergence of accounting standards is of vital strategic importance to the future of the global capital markets. The potential benefits of this project to the countries and its people can be seen in a number of ways. Every stakeholder is likely to benefit from actively participating in molding the chronological phases of the convergence process. But, that shining dream is still a long way from the present.

IV. ADVANTAGES AND DISADVANTAGES OF HARMONIZATION OF ACCOUNTING STANDARDS

As our marketplace and economy is continuously growing and day by day it is also becoming boundary less which actually leads us to the question why do we need harmonization of accounting standards, what are the advantages and disadvantages of this. Reference [11] stated that numerous organizations have been engaged in the implementation and promotion of common accounting standards globally. As we are continuously heading towards the globalization, there are many investors who are willing to invest across the world, so there is a need to of the harmonization of accounting standards because it will help them to analyze the financial situation which in turn will help them in effective decision making.

A. ADVANTAGES

The greatest benefit that would be generated from the harmonization of accounting standards is the comparability of international financial information. The investors will be highly beneficial because they will be able to compare or analyze the information recorded in the financial statements. This will eliminate the misunderstandings of the investors and they will be able to make quick decision because they will have the information which is relevant, reliable and consistently comparable. According to reference [12], while talking about the benefits of harmonization of accounting standards, the benefits were termed in the naturalizing disclosure of globalization and capital market efficiency and benefits included comparability and quality information for international capital markets decision making, removing international barriers to capital flow and increasing understanding for foreign investors and reduce reporting cost for multinationals. Adoption to IFRS actually solves this problem. According to reference [14], IFRS adoption focus on the effects on capital markets and investors and one argument behind this is IFRS improves financial reporting to outside investors, and thus it is more capital oriented and hence, more relevant to investors because of greater comparability and it will also make the market more liquid and lessen the firm’s cost of capital.

If the adoption of IFRS conveys that the firm is now determined to use higher quality accounting standards,
to greater disclosures and to more openness and transparen-
y in its dealings with outside investors, and if the firm
honors that determination, then its stock could be priced
more efficiently in financial markets. Some authors have
interpreted that to mean its stock price should change more
often while others have argued that greater efficiency im-
plies relatively more of the stock’s market volatility would
be driven by news about the firm itself, rather than by news
about other firms. IFRS-based disclosures appear to have
improved the efficiency of stock prices by reducing the ex-
tent to which the market is surprised by future disclosures
[5].

Harmonization of accounting standards will also
benefit the multinational and global companies to transfer
their employees and improve relationship with customers,
suppliers and government. According to reference [17],
“The benefit international accounting firms will have with
the harmonization of accounting practices will be the
movement of staff across the national boundaries will be-
come easier and it will be less expensive to provide. It will
also make it easier for financial executives to manage crit-
cal relationships with customers, suppliers and others”. Moreover, the companies those want to expand their busi-
nesses overseas need to adopt new accounting standards to
overcome the differentiation between countries accounting
policies [10].

Countries with deficient resources or less capital
can take the advantage of the harmonization of accounting
standards because there will be no cost associated with the
formation of accounting standards. So, much of their valu-
able capital will be saved and they will be able to attract in-
estors to generate income. Reference [15] states, “Coun-
tries with scarce resources could also take advantage of in-
ternational accounting standards, because they would not
have to invest resources creating and regulating national
accounting standard-setting agencies”. Reference [16] men-
tions that countries those still do not have sufficient orga-
nized standards of accounting and auditing and international
accountancy firms with clients of firms those have foreign
subsidiaries will be befitted by harmonization of accounting
standards.

B. DISADVANTAGES

Analyses some of main disadvantages of account-
ing harmonization are necessary to evaluate the comprehen-
sive effectiveness of this process. The most fundamental of
obstacles to harmonization are [18]:

1. The size of the present differences between the account-
ing practices of different countries,

2. The lack of strong professional accountancy bodies in
some countries, and

3. The differences in political and economic systems.

In addition, the main users of accounting informa-
tion come from different countries causing obstacles for
harmonization [7]. For instance, the nature market in UK
and US are the capitals markets, so the investors are the
main users. In contrast, Germany and other continental
countries, the basic nature is not similar with the nature in
UK and US; hence the main users are tax authorities and
government. Each type of users requires different account-
ing information for relevant decision making. Therefore, the
big issue for accounting harmonization is how to satisfy all
requirements of different users across countries.

The next disadvantage comes from the different
legal situation amongst various countries. Accounting sys-
tem is directly affected by legislation [13]. Accounting
harmonization is difficult to suitable with all nations. Thus,
each country need to establish each accounting standards
follow its regulation and legislation based on international
accounting standards. Accordingly, the process of account-
ing harmonization takes time for preparation and applica-
tion. The dynamic business environment leads to the com-
petition between countries to attract investors rapidly,
whereas process of accounting harmonization takes time.
The business have to minimize short time to focus, this will
lead higher costs of harmonization [19].

Moreover, it is a lengthy process and costly as well
in terms of implementing it. Many corporations will face
problem regarding cost in educating their accountants, man-
agement employees and investors on the new accounting
information. Existing polices and control system will be-
come outdated and new internal control needs to be estab-
lished. Grant Houston pointed out a negative impact of
Harmonizing Accounting Standards which is small busi-
nesses in the US (Houston) will be impacted as compliance
cost related to transition to new accounting standards will
be hindrance to the development and expansion of several
small businesses [9].

V. CONCLUSION

In today’s world, harmonization of accounting
standards has become necessary and it is also an unavoida-
ble issue. According to reference [4], IASC, which
presently known as IASB, has worked on harmonizing
accounting standards for 26 years. Moreover, from 140
countries, it has representatives and the research study done
on it shows that several companies are obeying IASB issues
IAS rules. Whenever companies need to go international,
they need to follow a standard policy for financial report.
Thus, the importance of accounting standard harmonization is inevitable. Harmonizing accounting standards has both some advantages and disadvantages.

It will benefit by bringing uniformity in preparing financial report and it will help companies’ accounts to be more comparable and transparent; in result, taking right investment decision by investors will be easier [2]. There are many more benefits which have already discussed above. However, it also has some disadvantages. This process will take a while to be implemented and it will also be very costly project. Moreover, different countries have different political and economical situation which will one of the difficulties convergence project will face.

Although harmonization of accounting standards have some drawbacks but despite of having that it will benefit the investors because of its comparability feature, it will make the capital market more efficient because of the reliable, relevant and accurate information and thus helping the economy to grow and it will reduce the cost of the multinationals.

REFERENCE

Bankruptcy and Bank Specific Factors: A Panel Analysis

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Paper# ICBM-17-291

Abstract - Due to recent credit spur in the corporate and other sectors, the survival of the banking sector has been questioned. The question has been fueled by the recent banking sector scams. The study in this regard has tried to spot the bank specific factors that let banks approach to the bankruptcy and inhibit from the bankruptcy. The study has used a panel of 29 listed commercial banks of Bangladesh in which data from 2005-2015 for each bank have been incorporated. To measure the bankruptcy score, the study has used Altman Z-score model for financial sector. System GMM along with difference GMM has been used. From the results of difference GMM, it has been found that increase in capital adequacy ratio and efficiency in the banking sector inhibits bankruptcy unlike increase in age and non-performing loan. Therefore, increase in age and non-performing loan lets the banks approach into the bankruptcy. Almost same conclusion has been drawn from system GMM also.

Keywords - Altman Z-score, Banks, Bankruptcy, Credit, Scams, Difference GMM, System GMM

I. INTRODUCTION

As life blood of economic activities, banks collect funds from surplus units of the society and provide those funds to the deficit units. Hence by enticing savings and yielding credit, banks provide the fuel of the driving vehicles that keep the economy moving on. By collecting savings of the mass, banks ideally invest those saving on need basis so that savings of the mass can be invested efficiently. As a result an entity whether it is a person, farm, or firm can approach to the banks to meet up their funding requirements. In this process banks generate handsome earnings from the amount lent to the entities and subsequently pass a portion of it to the savings holders. What will happen if banks fail to recover money given to deficit units? In fact the answer of this question is very deep. Deep in the sense that the entire economy might be severely affected and bad effect may be beyond imagination as every entity of the economy is linked to each other. For example- if banks fail to return money to depositors along with the desired interest income, it is a condition of default and depositors will lose trust on the banks. They will feel more insecure to keep money in banks. As a result, the entities in need of fund will not get required fund to finance their projects, operations, and ventures. Consequently, the economy will gradually take the path of stagnation. Actually, it is a very simplistic example to observe and feel the importance of banks’ default. The realistic consequences may be deeper, more intense, and more severe on the economy. Deeper, severe, and intense in the sense that the entire economy may be drastically fallen down and may take many more years to get recovered. The recovery process usually depends on the strength of economy and the policies designed by the intellectuals and policymakers of the states of the country or a country as a whole. For example- the Japanese asset price bubble from 1986-1991, a bulk amount of non-performing loan has accumulated in the banking sector of Japan due to borrowers’ default. As a result later many depositors’ funds had been channeled into other reliable sectors from banks. The entire crisis has badly affected the investment and consumption of the economy. As a result, from a prolonged decline in the asset prices, there was a sharp decline in consumption, which resulted in long term deflation in Japan. The asset price burst also badly affected consumer confidence since a sharp dip reduced household real income. A few banking crises are- Finnish banking crisis of 1990s, Swedish banking crisis of 1990s, and Peruvian banking crisis of 1992. The 2007-08 subprime mortgage crisis in US economy has set a demand for new risk based capital adequacy framework. Due to capital shortfall, one of the largest banks in US economy, the Lehman Brothers, has been liquidated. What will happen in Bangladesh economy, if banking sector in Bangladesh needs to go through this most likely akin to situation? May be it is very tough to foreshadow and foretell the most likely severe impacts. Recently the World Bank has cited that increased provisions for non-performing loan and elevation of short term external debt are sources of concern in banking sector of Bangladesh (Global Economic prospects, 2017).

The main objective of this paper is to find out the key bank specific factors that affect the bankruptcy of the banking sector. To measure the bankruptcy level of the banking sector, Altman-Z score has been used.

II. CONTEXT OF THE STUDY

Banking sector is the life blood of an economy. This sector helps in accelerating economic development through excellency in the economic activities of a country. The increase in the number of financial market participants makes the macroeconomic environment more

complex and regulation framework of banking sector more vulnerable. At present there are 56 commercial banks running in the economy. The loan defaults and delinquencies, manipulated financial reporting, misconduct in resource allocation, nepotism in loan sanctioning, and manipulation in financial performance are creating a chronic disease in the financial sector of Bangladesh that can raise question about the survivality of this sector. These scenarios have revealed in the scandals of Hallmark including five other companies (BDT 3,547 crore) in Sonali Bank. The political involvements in the supervision and weak institutional framework are creating susceptibility in the loan repayment in private commercial banks and in the govt. banks as well. The cumulative increase in the classified loans and loan provisioning has become the cause of capital erosion. The amount of unclassified loan and loan provisioning are not disclosed properly. According to Bangladesh Bank, the amount of NPL of Stated Owned Banks has stood at BDT 227.6 billion up to 2014 and the private Owned Banks has stood at BDT 184.3 billion up to 2014. At end of the quarter of 2016, NPL in Sated Owned Banks is 24.27% (26 August 2016, The Daily Star). The default loans including written off and rescheduled loans are crossed 100,000 cores taka (27 February 2017, The Financial Express). Default loans amount to BDT 63,365 crore up to 2016 (26 August 2016, The Daily Star). The number of loan defaulters in 47 stated owned and private commercial bank is 213,532. The Altman Z-score can give direction about the plausibility of the financial distress, becoming the burning questions of the economy. The prediction of financial distress may represent a myopic scenario of banking sector on which a country's dynamism and health may depend. The new risk based capital adequacy framework of the banking sector (Basel III) has tried to address potential breakdown and associated vulnerability with the banking sector. The liquidity coverage ratio, net stable funding ratio, and liquidity risk monitoring tool should have to be presented in more sophisticated way. But what extent Basel III will be applicable in the banking sector of Bangladesh is a matter of question. In fact maintaining 17.5% CAR as per BASEL III relative to 10% as per BASEL II seems to be more challenging. Year by year average CAR and Z-Score of 29 listed commercial banks are given below in Table-1.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Z-Score</th>
<th>CAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>1.28</td>
<td>10.52</td>
</tr>
<tr>
<td>2006</td>
<td>1.23</td>
<td>10.89</td>
</tr>
<tr>
<td>2007</td>
<td>1.11</td>
<td>10.36</td>
</tr>
<tr>
<td>2008</td>
<td>1.08</td>
<td>10.62</td>
</tr>
<tr>
<td>2009</td>
<td>1.17</td>
<td>11.78</td>
</tr>
<tr>
<td>2010</td>
<td>1.11</td>
<td>9.57</td>
</tr>
</tbody>
</table>

III. LITERATURE REVIEW

A few studies have been conducted to find out the exogenous factors that influence bankruptcy risk calculated by Altman Z-score in the banking sector. Since the bankruptcy risk may lead a bank to financial distress (shorten the entire span of life of a firm), the forecast of bankruptcy risk has become a burning issue in decision making [2]. Over the last 37 years, although the academicians and researchers have studied on alternative procedures to predict bankruptcy risk in a firm, still no findings are as appropriate as the finding of Altman Z-score [3]. For example-price adjusted accounting data has been used to forecast the financial failure of a firm [4]. Again the method founded on the consistency of financial ratios has been used to forecast corporate failure [5]. The study has taken the sample size of 425 banks and found consistency of the Altman Z-score in the prediction of bankruptcy risk [6]. The multivariate formula (Altman Z-score) is a strong tool to forecast bankruptcy risk, diagnosing correctly the financial difficulties of a firm [7]. The empirical study has found that capital adequacy ratio (CAR) and nonperforming loan ratio (NPLR) has significant impact on the bankruptcy risk on Indonesian Banking Crisis [8]. Since the capital adequacy ratio increases the ownership stake and reduces bankruptcy risk [9], 10% increase in ownership stake, raising Altman Z-score by 20% [10]. The higher NPLR creates the higher bankruptcy risk and found statistically significant impact in increasing bankruptcy risk [11]. Age have significant positive impact on the bankruptcy risk, where increase in age lowers Altman Z-score in German firms [12]. Asset turnover ratio which taken as proxy of efficiency (EFF) has significant negative impact on the bankruptcy risk [8].

The bank specific factors that influence the Altman Z-score in banking sector have been identified through this study. No study still has been found to identify bank specific factors which have significant impact on the Altman Z-score in Bangladesh. Moreover, the large sample size and advance econometric methods have enlightened this study. By identifying the bank specific factors that influence Altman Z-score and as a first time study in Bangladesh, this paper has been excellent contribution in literatures.

IV. THEORITICAL FONDATION OF ALTMAN Z-SCORE

To judge the likelihood of the Bankruptcy, Altman Z-Score [13]; [14]; [15] for financial companies has been computed by using the following model:

\[ \text{Altman Z-score} = a_0 + a_1 \times \text{EBIT} + a_2 \times \text{Total Assets} + a_3 \times \text{Total Liabilities} + a_4 \times \text{Market Value of Equity} + a_5 \times \text{Sales} \]


3 Altman (1968) Z-score model forecasts the bankruptcy with 72% level of accuracy before two years of event and 92% accuracy before one year.
It is really tough to find out the working capital of banks as there is no classification of current assets and current liabilities. Therefore, in this study working capital for the banks is defined as the net liquid assets [1].

\[ Z_c = 6.56 \left( \frac{WC}{TA} \right) + 3.26 \left( \frac{RE}{TA} \right) + 6.72 \left( \frac{EBIT}{TA} \right) + 1.05 \left( \frac{MVE}{BTL} \right) \]

(1)

\[ Z_c > 2.6 \text{ represents Safe Zone, } 1.1 < Z_c < 2.6 \text{ represents Grey Zone, } Z_c < 1.1 \text{ represents Distress Zone.} \]

V. DEFINING THE VARIABLES AND DESCRIPTIVE STATISTICS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition of the Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altman Z-score (Z_c)</td>
<td>The Formula is used to predict the Bankruptcy Risk of a firm.</td>
</tr>
<tr>
<td>Capital Adequacy Ratio (CAR)</td>
<td>It is a measurement of bank’s capital which represents the bank’s solvency.</td>
</tr>
</tbody>
</table>

\[ Z_c = \alpha_0 + \alpha_1 CAR_i + \alpha_2 AGE_i + \alpha_3 NPLR_i + \alpha_4 EFF_i + \eta_i \]

(2)

Here, \( i \) represents the ith firm and \( t \) represents time period for each firm. CAR indicates the capital adequacy ratio, AGE indicates the time period from the year of incorporation to current, NPLR indicates the non-performing loan ratio, and EFF indicates the efficiency of the banks. The parameters \( \alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4 \) represent the average change in Altman Z-score with respect to CAR, AGE, NPLR, EFF respectively. The entire econometric analysis has been done on the EVIEWS, RATS, and STATA.
B. Causality Analysis

To check the causalities among the variables, Engel and Granger F-test has been applied in the following multivariate VAR framework:

\[
\begin{align*}
\{Z_t\} & = \begin{bmatrix} Z_{1t} & \lambda_{12} & \lambda_{13} & \lambda_{14} & \lambda_{15} & \eta_{1t} \end{bmatrix} \begin{bmatrix} C_1 \\ \lambda_{21} & \lambda_{22} & \lambda_{23} & \lambda_{24} & \lambda_{25} \end{bmatrix} \begin{bmatrix} Z_{t-1} \end{bmatrix} + \begin{bmatrix} \eta_{2t} \end{bmatrix} \\
\{CAR\} & = \begin{bmatrix} \lambda_{32} & \lambda_{33} & \lambda_{34} & \lambda_{35} \end{bmatrix} \begin{bmatrix} C_3 \end{bmatrix} \begin{bmatrix} Z_{t-1} \end{bmatrix} + \begin{bmatrix} \eta_{3t} \end{bmatrix} \\
\{AGE\} & = \begin{bmatrix} \lambda_{42} & \lambda_{43} & \lambda_{44} & \lambda_{45} \end{bmatrix} \begin{bmatrix} C_4 \end{bmatrix} \begin{bmatrix} Z_{t-1} \end{bmatrix} + \begin{bmatrix} \eta_{4t} \end{bmatrix} \\
\{NPLR\} & = \begin{bmatrix} \lambda_{52} & \lambda_{53} & \lambda_{54} & \lambda_{55} \end{bmatrix} \begin{bmatrix} C_5 \end{bmatrix} \begin{bmatrix} Z_{t-1} \end{bmatrix} + \begin{bmatrix} \eta_{5t} \end{bmatrix}
\end{align*}
\]

(3)

\(C_s\)'s and \(\lambda_s\)'s are the parameters to be estimated. \(\eta_s\)'s are the random error terms with mean zero and finite covariance matrix.

C. Estimation of the Model

The second step GMM has been used to remove endogeneity problem (the regressors may be correlated with the error terms) and to remove firm specific unobserved (inborn) heterogeneity [16]. Moreover, due to the presence of lagged dependent variable, auto-correlation problem may arise. Therefore, to get rid of the auto-correlation problem first difference lagged dependent variable is also instrumented with its past levels. One key problem of second step difference GMM estimation is that the standard errors of the estimates may have downward bias. To fix out this problem, White period robust standard errors have been used. It is also notable that if panel has small time dimension (T) and long firm dimension (N), the estimation [16] can be used even if it is not necessary [17]. The second step system GMM has been used for consistency check in results [18]. It has augmented difference GMM estimation through the introduction of an additional assumption which generates additional set of moment conditions to leverage. It requires that lagged changes in dependent variable are the valid instruments for the level of lagged dependent variable in the level equation. To sum up system GMM requires more assumptions than difference GMM, and if the assumptions hold, it will achieve greater efficiency.

D. Results of the Model Estimation

\begin{table}[h]
\centering
\begin{tabular}{|c|cc|cc|cc|}
\hline
\multicolumn{1}{|c|}{Variables} & \multicolumn{2}{|c|}{Regression GMM} & \multicolumn{2}{|c|}{System GMM} \\
\hline
\hline
Constant & 0.6372*** & (0.0000) & 0.6333*** & (0.0000) \\
\hline
\{Z\}_t(-1) & 0.1563*** & (0.0000) & 0.0001*** & (0.0000) \\
\hline
CAR & 0.0312*** & (0.0000) & 0.0308*** & (0.0000) \\
\hline
EFF & 0.0024 & (0.3730) & 0.0048 & (0.1150) \\
\hline
\end{tabular}
\caption{Regression Results}
\end{table}

\begin{table}[h]
\centering
\begin{tabular}{|c|cc|cc|}
\hline
\multicolumn{1}{|c|}{Variables} & \multicolumn{2}{|c|}{Z Statistic} & \multicolumn{2}{|c|}{J Statistic} \\
\hline
\hline
AGE & -0.0040 & (0.1350) & -0.0035** & (0.0110) \\
\hline
NPLR & -0.0054** & (0.0000) & -0.0078*** & (0.0000) \\
\hline
AR(2) Statistic & 0.2779 & (0.7811) & 0.0906 & (0.9278) \\
\hline
J – Statistic & 21.9890 & (0.9978) & 22.5752 & (0.9999) \\
\hline
\end{tabular}
\caption{Causality Results}
\end{table}

Note: significant at 1%, significant at 5%, significant at 10%.
There is no problem of serial correlation in each technique. AR (2) statistics with high p-value (>0.05) represent the non-existence of the serial correlation problem. Both system GMM and difference GMM are reasonably good models with small J-statistics and its high p-value (>0.05).

E. Results of Causality

F. Interpretation of Results

CAR has significant positive impact on the Altman Z-score in both difference and system GMM. When the capital adequacy ratio is high, the bank becomes less risky to be bankrupt. Efficiency (EFF) has insignificant positive impact on the Altman Z-score as per difference and system GMM. The increase in asset turnover ratio (efficiency) reduces the risk of bankruptcy. AGE has significant negative impact on the Altman Z-score as per system GMM. With the increase in Age, the banks’ financial position is being deteriorated. The survival in the competitive environment will be tough at the matured level of a bank. Non-performing loan ratio (NPLR) has significant negative impact on the Altman Z-score in both difference and system GMM. NPLR represents the failure to recover the scheduled installments of loans given to the borrowers. It increases the risk of bankruptcy, reducing the Altman Z-score. Bidirectional causality exists between Z-score and non-performing loan ratio, between capital adequacy ratio and non-performing loan ratio, between efficiency and non-performing loan ratio, and in between capital adequacy ratio and age. Unidirectional causality exists from efficiency to age.

VII. CONCLUSION AND POLICY IMPLICATIONS

The difference and system GMM have been used to identify the bank specific factors that influence the Altman Z-score. The system GMM is more efficient to
estimate the parameters because of lowest biasness and lowest root mean square error. The study has found the positive impact of CAR on the Altman Z-score. To justify the bankruptcy risk, depositors and shareholders have to give special attention to CAR. The efficiency (EFF) has the insignificant positive impact on the Altman Z-score. So, the efficiency of the bank should have to be noticed. The age has significant negative impact on the Altman Z-score. Therefore, the regulator (Bangladesh Bank) should take special care and formulate more sound and rigorous guidelines to inhibit the banks to approach into bankruptcy over time. Moreover, approaching into the bankruptcy over the time is a sign of entire banking sector’s inefficiency. The non-performing loan ratio has significant negative impact on the Altman Z-score. Therefore, the depositors should observe the non-performing loan ratio of the bank before depositing money and keeping life time savings. Also Bangladesh Bank should take rigorous steps to control the non-performing loan in the entire banking sector. A strong and sound guidelines of loan disbursement, a strong credit risk management department in each bank, and a strong internal control and compliance department can control the flow of non-performing loan apart from a strong recovery drive for classified loan. Moreover, elimination of documentation risk can subsequently control the flow of non-performing loan. Before keeping money in banks, depositors should take into account age, non-performing loan ratio, capital adequacy ratio, and efficiency of each bank. Relatively higher efficiency and higher capital adequacy ratio can give the assurance of money back to the depositors. Relatively high non-performing loan ratio and age may give rise the tension in the depositors’ mind and depositors may feel insecurity subsequently. Moreover, the causality results suggest Bidirectional causality exists between Z-score and non-performing loan ratio, between capital adequacy ratio and non-performing loan ratio, between efficiency and non-performing loan ratio, and in between capital adequacy ratio and age and unidirectional causality exists from efficiency to age.

REFERENCES


The Role of Bangladeshi Ports in Developing Integrated Intermodal Freight Transportation System in South Asia

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Paper ID-ICBM-17-440

Abstract - This paper aims to find out the role of Bangladeshi ports in South Asia for developing integrated intermodal freight transportation system to mitigate the demand of port transport in the region through container from port to inland container depot or dry port or inland container terminal even from/to shipper/consignee premises. The strategic location of Bangladeshi ports in the Bay of Bengal are lucrative for the international traders, investors and others to invest in the port industry as well as manufacturing industry to develop international trade in South Asia especially in India, Nepal, Bhutan and Bangladesh. In addition, Bangladesh has opportunity to serve Myanmar through coastal shipping and road haulage of containers. In here, port rivalry among the ports of Bangladesh, India and Sri Lanka is described to focus the importance of Bangladeshi ports also to get the real scenario of port facilities in South Asia. At the end of the paper, deep port initiative is attributed to connect with the One Belt, One Road (OBOR) initiative of China. Finally, in the view of intermodal freight transportation and port competition in the regions, future directions are stated for Bangladeshi ports to compete with others in the South Asian region.

Keywords: Transport, intermodal, Bay of Bengal, OBOR, India, China.

I. INTRODUCTION

The strategic location of Bangladeshi seaports (known and written as “ports”) in the Bay of Bengal are lucrative for the international traders, investors and others to invest in the port industry as well as manufacturing industry to develop international trade in South Asia especially in India, Nepal, Bhutan and Bangladesh. In addition, Bangladesh has opportunity to serve Myanmar through coastal shipping and road haulage of containers. In here, port rivalry among the ports of Bangladesh, India and Sri Lanka is described to focus the importance of Bangladeshi ports also to get the real scenario of port facilities in South Asia. Mention that service network designs are broadly described to know the function of port authorities where intermodal extended the networks of ports from creating the hinterlands also clearing the access from the ports to terminals nearby the hinterland and further movement of cargo and containers in between the inland terminals and port premises.

Broadly speaking, the phase [1] of the regionalization brings the perspective of port development to a higher geographical scale, which is beyond the port’s perimeter. In addition, successful [2] promotion of Intermodal Freight Transportation (Herein after as “IFT”) will help to achieve a sustainable transport sector because of its low external costs for multiple handlings and examination at various points. In addition, ocean [3] freight transport industry has changed its structure and operational strategy to cope with the new trends and pre-conditions of containerization and the rise of intermodality. Actually, globalization of the world economy and demands from the manufacturing industries that created the cluster of free trade zone and its connection to the port, eventually, changed the pattern of logistics services from port to shipper premises or vice versa. The historic [4] concept of port is the economic and physical economic infrastructure that serves in the coastal and manage oversees traffic. In addition, port is the sub-system of the total transport network and a meeting place of all modes of transport also supporting nearby air freight activities in all time. Connectively, researchers [5] viewed that the port as logistics service providers who arranged necessary support service to active the supply chain through the interrogative practice that under taken by the global players like shipping companies and terminal operators.

This paper is structured into four parts where 8 Chapters are included to know the IFT and role of Bangladeshi ports to develop integrated IFT system for connecting South Asia in the aim of supporting maritime logistics services. Part one features the Introduction, Research Objectives, Methodology where perspective of the research is attributed. Part two is the main portion of the research that included Literature Review, Qualitative Research Findings. After stating the qualitative findings, one analysis paragraph added in each section of Chapter V on the light of literature review. Part three described the innovation and integration of Bangladeshi ports for searching new ideas or work opportunity with other ports of South Asia especially “One Belt, One Road –OBOR” topic is discussed to tag with the international maritime community and deep port initiative is attributed to connect with the OBOR initiative of China. Lastly, in part four, in the view of IFT and port competition in the regions, future directions are stated for Bangladeshi ports to compete with others in the South Asian region after the conclusion. Overall, this paper aims to find out the role of Bangladeshi ports in South Asia for developing integrated intermodal freight transportation system to mitigate the demand of port transport in the region through container from port to inland container depot or dry port or inland container terminal even from/to shipper/consignee premises.
II. RESEARCH OBJECTIVES

Ports [6] play an important role in the management and coordination of materials and information flows in the transport chain as integral part of the entire supply chain. In the area of maritime transport, reliability and productivity are collective concept for creating synergies to guarantee the reliability, continuous services and a good productivity. Basically, this research has threefold objectives which are as follows:

1. To know the current situation of Bangladeshi ports and explore their opportunity in the South Asia.
2. To know about integrated IFT system and how Bangladeshi port will develop IFT within Bangladesh and connect with the neighbor countries to do maritime logistics by providing intermodal services from their ports.
3. To connect with the OBOR and find out the prospection of Chittagong as prime maritime load center in the Bay of Bengal under the Maritime Silk Road (MSR).

The overarching goal of this study is to support the maritime logistics services to the nation also the neighbors in creating the intermodal facilities by Bangladeshi ports as “Maritime Logistics Services”.

III. RESEARCH METHODOLOGY

This research followed the methodology of great scholar [7] for qualitative studies for constructing the social reality, to exchange the cultural meaning by focusing the interactive process with few cases. In the process of qualitative research, researcher was involved from the beginning of self-assessment to explore the title of the research and followed the below steps [7] to conduct the qualitative research survey and works as per research objectives:

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activities</th>
<th>Results</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledge social self</td>
<td>By studying the related books and journals of port affairs, author realized to do more research on port development and IFT.</td>
<td>Visited Chittagong port and found the gaps on port development.</td>
<td>No funding opportunities in Bangladesh.</td>
</tr>
<tr>
<td>Design</td>
<td>Choose the Field test</td>
<td>Limited</td>
<td>Limited</td>
</tr>
<tr>
<td>Collect the Data</td>
<td>Physical interviews were conducted at the office of respondents. Firstly, asked research questionnaires (R/Q) and where time allowed, performed the open-ended questions actively.</td>
<td>Data collected.</td>
<td>Time limitations in taking physical interview.</td>
</tr>
<tr>
<td>Analyze the Data</td>
<td>Data compiled and set into literature.</td>
<td>Research paper developed.</td>
<td></td>
</tr>
<tr>
<td>Interpret the data</td>
<td>Compared and contrasted with the literature review. Concluded with the future directions.</td>
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<tr>
<td>Inform others</td>
<td>Conference presentation and will be notified to the society by journal publication.</td>
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Figure-1 (Table). Qualitative research steps [7]

During visiting the ports of Chittagong and Mongla, research themes were shared with the port authority staff and expert in the shipping sector. After that R/Q are designed and field tested by taking the interview of one shipping expert in Chittagong. Finally, five questions are putted in the qualitative research survey R/Q with the opportunity of open-ended questions during physical or telephonic interview to get new ideas related to the research topic. In order to explore R/Q, 6 interviews were conducted in between the December 2016 to May 2017. Meanwhile, R/Q sent to the expert in the area of shipping, transport and logistics at home and abroad and received 1 answer though email and 5 telephonic interviews were performed before June 15, 2017. Research [8] needs to maintain the professional code of ethics for conducting research survey in respective fields. In this connection,
ethic matter strictly followed during research interviews and did not ask any questions that is harmful for personal life or society of the respondents. However, research had faced huge limitation in getting the responses because of less interest in the subject matter especially intermodal freight transportation.

IV. LITERATURE REVIEW

The port [9] regionalization concept extended the opportunity of port development with a focus an institutional relationship that governing the complexity of inland connection. Indeed, not only thinking about the port development by itself but also interconnected with the hinterlands by facilitating the inland terminals, spatial road and highways development and good connection with rail tracks. Specifically, port [10] authorities have an integrated and holistic role within the port activities at the national or regional level historically. In addition, now-a-days, port authorities are going out of port premises to act as builder of inland distribution networks by developing inland terminals, annex roads, railway networks to facilitate the intermodal facilities to attract the port users. From the experience of Italy, study [10] described that relationship between ports are co-exist within the same region even crossed the national boundaries. In addition, they viewed the feeder-hub relationship that exists between the port of Hong Kong and other ports in mainland China. Similarly, in South Asia has the opportunity to build relationship by exchanging the cargo and container. For instance, eastern ports of India can send the container to seven sister/Nepal/Bhutan via Mongla port of Bangladesh and also collect the cargo and container by feeder-hub system via Mongla as a part of port cooperation. Previously, ports [11] were the primary components of the general transportation sector but, now, ports are playing a vital role in developing trading center for expanding the world economy.

In summarizing [12] the definition of IFT is the multiple transportation of containers, Swap bodies, semi –trailers and specially designed containers from origin to destination by using two or modes without unloading of cargoes at mid points. In here, the role [12] of intermodal transport chain as the efficient transportation of good in terms of cost, time and reliability. They assumed that future development of the overall transport system will be based on the principle of intermodality because the intermodal transport development has an impact on further economic globalization. As lead facilitator in a transport chain, port [13] authority has to promote efficient intermodal system in order to secure cargo in the competitive market and maintain close liaison with the railway, road and high ways, inland terminal operators and others constantly. In addition, it [2] is widely accepted that IFT is less energy intensive than other modes of transport. It is often advocated that hinterland [11] production and logistics functions are vital element that required efficient transport system to add value to the economy. Subsequently, port [1] hinterlands criteria’s are changed and developed that paid substantial attention for increasing the efficiency of global freight distributions dynamically. In the light of containerization, port’s hinterland mostly depends on the performance of IFT predictably. Essentially, IFT [14] is a core economic activity supporting for a large part of national and international trade. Greatly, academics [13] are explained the cause of recent rise of port terminals for acting as transshipment hubs to facilitate the maritime hub –and-spoke system, furthermore, connect with the inland distribution network. Driven in particular, increased vessel size also created the pressure to the hub for working with the spoke port more closely, even hub port authority engaged with the carriers for marketing of spoke port’s credentials in the aim of feed the big mother vessel as a part of international marketing or strategy of increasing hinterland. This may be defined as the initiative of port development. Scattered and poorly connected smaller coastline ports are important in the geographical system for supporting the hub and spoke system and they have the sufficient regular containers to fill the vacant place of mother vessel. IFT has big role in those small ports and proper inland terminals are able to connect with the spoke ports by rail, oral and waterways very easily.

Besides, port [5] authorities are mainly responsible for the hardware dimensions in the process of port development with the communication facilities by using latest and updated software for vessel, cargo and container tracking in liaison with the prime stakeholders or port users. In addition, port may act as 3PL (Third Party Logistics) to cover all logistical function for a company that related to maritime logistics in simplifying the export import trade economically and timely. At the stage of growing situation of intermodal, researcher [15] explored some key barriers or problems by which its share is low till date. In here, he found the inability of intermodal transport for meeting the requirements of customers adequately. From the boldness of traditional road transport users that feels as flexible, transparent and quality services, to gain the pleasure of IFT is far and subject to the excellent remarks in the future transport system. However, main problems or barriers are the organizational, technical, infrastructural, operational, logistical and service related, financial and economic and

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![Figure-2 (Diagram). Role of intermodal transport in port regionalization developed by the author [9]](image-url)
political barriers. Among them infrastructural barrier is the main component and it is essential to combine nodes (Terminal, Port), modes (Rail, road, waterways, air) and services within the IFT system by good infrastructure and handling equipment of intermodal unit. Traditionally, investment [15] in transport infrastructure is the prime task of government or public authorities, meanwhile, Public Private Partnership (PPP) changed the total scenario and private port, tool roads are developing with the partnership of the government. But, failure [16] of transport sector due to the leadership and not by the general people of Bangladesh and encouraging the leadership to take austerity policy for building technology capability to set up necessary infrastructure for economic take-off. Inadequate [17] transport infrastructure constrained the transit /transshipment facilities in the SA region especially transit services from Bangladeshi port to the neighbors that resulted high transport costs exclusively for Nepal, Bhutan and North-East (NE) part of India (Seven Sisters). In here, Indian ports are congested and inefficient to serve Nepal and Bhutan by which landlocked are unable to import their cargo timely and cheaply and do export trade by using cheapest maritime freight. Plus, IFT [18] relies on containerization that offers cargo safety significantly also reducing loss and damage of cargo from the outwards environment. In the supply change of IFT system, speed up of operations and interchange in a structured system, with just-in –time approach and decreases the transport costs.

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**Figure-3 (Diagram). Shipper perspectives on transport modes [19]**

In the view of transport assortment, shipper [19] always choose in selecting transport where availability of the services or facilities with the affordable cost are important as first steps. After that suitability of the carrier and its linkage with ports in stipulated time are the second steps. Finally, shipper thinks about the restitution to avoid any problems at the passage at the steps of insurance and know the carrier involvement and brand value and firm contract. In here, IFT [18] broadly defines as a chain made up of several transport mods that are more are less coordinated and interacted in intermodal terminals to ensures door-door-service. Contrary to the conventional transportation system that are used individual different modes and service where effective coordination are regained to change the mode and transfer the cargo at all modes where intermodal offers as like the courier service in the big volume of parcels. Hinterland [11] production and logistics function are vital elements for economic development that is depend on the good performance of ports and multi-functional activities (Dockyard, ship building, ship breaking, international shipping offices, insurance companies etc. Till [18] date many modes are multimodal where all arrangement are required to transfer the cargo like bulk discharge at port.

Global and regional connectivity is the issue of globalization and catalyst of open market economy. Greatly, Bangladesh [20] planned to let the port facilities to the neighbor countries for using the two port Chittagong and Mongla, Road and Highways, railways and inland waterways as a part of regional cooperation. Moreover, it will be the maritime logistics service business with the neighbors as well as mitigating the regional demand of South Asia. The Bay of Bengal [21] is important for South Asia and the Pacific of its deep inland penetration and featuring the seaborne trade historically. It is also important for landlocked countries Nepal, Bhutan and NE part of India which is basically landlocked. Bangladesh has considerable geographic advantages as it has vast coastline with the strategic location of ports in Chittagong, Mongla and Payra that have close proximity to each of its international ports. Geopolitics [21] is the one part problem in implementing maritime logistics facilities in Bangladesh that committed by China in the subject of deep port and building partnership at the Bay of Bengal in between Bangladesh and China. Moreover, researchers [13] defined the role of port authorities as “Facilitator” in the transport chain but they needs to rethink about the role and should broaden their role by creating the platform for working together with various stakeholders. Recently, research on Silk Road [22] explored the connection of OBOR with the Bangladesh-China-India-Myanmar (BCIM) that confirmed the investment of China in the report of United Nations Conference on Trade and Development (UNCTAD) [23]. In relation to, role [24] of port management in a highly complex and dynamic environment for operating at waterways and sea that contributed in the environment, geographic, social, technological, legal, political affairs of a country. To design a sustainable port management, the main components are operating items, maintenance or development of port activities in the view of achieving the efficiency parameters.

Overall, with the voice of scholars [25], intermodal ensures the standards of containers and handling apparatus and increasing standardization has been essential to the development of IFT. To [18] discuss about the intermodal terminals, port has the long tradition to invest in the riverine inland terminals. For example, Chittagong port assisted to construct 1st riverine inland container terminal at Pangaon nearby capital city of Bangladesh that connected with the Indian ports by small container vessel as a part of coastal shipping in the South...
Asia. Moreover, Chittagong port is assisting to develop third port Payra to facilitate the regional traffic in the region. Port [6] competitiveness is becoming increasingly dependent on external coordination and full control of the specific supply chain. Therefore, port authority has to broaden their role in monitoring the cargo flow from the origin to destination to provide excellent customer service in the logistics management. In here, port has to follow up the movements of cargo and container within her hinterland and enable the access facilities by ensuring the safe inland freight transportation.

V. QUALITATIVE RESEARCH FINDINGS AND ANALYSIS

Qualitative research findings are actual works of the researcher and recorded to compare and contrast with the literature review. Preliminary, survey request were sent to prospective 120 participants/experts in the transport sector who are policy researcher, university researcher, PhD researcher, shipping business person port users, shipping expert and others. Overall, research received 12 participants in the qualitative research survey finally. (Details in Appendix B). This Chapter tried to extract the important issue/response/answer from the respondents constructively to IFT system that earlier reviewed in the literature (Chapter IV). Mention that ports [11] are the primary components of economic activity that linked with the global economy as well as integration into the global economic system from the overseas to the hinterland within the country or abroad. In a research, model of one scholar [26] had identified that intermodal transport decrease the cost of transport as well as it has some positive qualities in avoiding multiple handling and less carbon emissions comparing with truck transportation. Finally, study [4] suggested to pay serious attention to collect/distribute the cargo from the origin and destination and fully-pledged policy initiative for future investment in port development.

A. Role of IFT in Transport Management

All respondents were agreed that integrated IFT system is the only way to solve the freight transport crisis or problem in Bangladesh. In order to remove the pressure of freight/congestion at road and highways, it is essential to follow the IFT system especially container transportation via intermodal rail networks or inland waterways. They also referred the unavoidable traffic jams in between Dhaka and Chittagong that restricted the economic development of Bangladesh highly. Moreover, traditional truck transportation system and multiple cargo handling at various points are taking much time to send the finished goods to port and receiving import in the consignee premises. In order to secure the certain freight, all respondents are happy to see the prospectus of IFT in Bangladesh. Undoubtedly, IFT will bring the good things for Bangladesh and all emphasized on waterway transport of intermodal containers from Chittagong/Mongla port Dhaka by IFT.

To sum up, economic [14] and operation efficiency of IFT in aiming to optimize operations, service and resource utilization of carriers, owner of port and inland terminals and port users. The most [26] important element of IFT system is the intermodal network that stated from the port and closed at the last mile destination or vice versa. Mention that intermodal network reduced the air pollution from trucks, reduced congestion at roads and terminals, minimize the noise and traffic accidents. Overall, Intermodal [26] freight transport is well known in Europe and frequently seen as potential transport system that is environment friendly.

B. Barriers in IFT System in Bangladesh

IFT system is not developed in the South Asian region to offer dedicated transport services to all member countries or not in a position to reach in common understanding to use the natural port access by all. This is exclusively worst in Bangladesh and India to survive with the derived demand of the port users or world trader for using the ports and taking the maritime logistics services smoothly and confidently. Having the opportunity, research found some barriers in developing IFT system and status is presented below in graphically:

![Figure-4 (Bar Chart). Barriers in IFT in South Asia developed by the author from the qualitative research survey.](image-url)
the technical difficulties in the supply chain of intermodal containers or swap bodies. In line with the previous barriers, socio-economic barrier also playing a great role in developing IFT system where attitude of developing other’s infrastructure, assisting to set industry, free access to the ports, offering maritime logistics are the problems that created socio economic complications in the region highly. Positively, some respondents feel that investment is a problem because IFT system is a complex and high investment is required but others have the confidence to build the system by government or PPP and they have the capacity to do so. It was less difficulties in operational, logistics and service-related barriers and it is possible to reduce by conducting professional trainings of operating employee and most of the services will be rendered by using Electronic Data Interchange (EDI) or using computer software program to monitor the whole IFT system. Few respondents had extracted the political barriers but it is possible to solve by discussing the developing opportunity for all that will bring the good things as well as financial solvency, source of employment through industrialization etc.

From the literature review and qualitative research survey, socio-economic barrier is the new where national attitude and mentality are influenced for investing in the IFT system. In this connection, economic [15] growth will increase the traffic flows or movement of cargo and container and will look to the efficient and sustainable transport where intermodal transport will play a greater role by using railways, inland waterways, less utilization of road and highways by containers and minimum placement of cargo and containers at port yard systematically. Therefore, we need to change socio-economic concept of others development and needs to turn our investment in the process of good transport system in the South Asian region.

C. Infrastructural Development for IFT

As all the of the ports of Bangladesh are lying at the coastline of Bay of Bengal, all port authorities have to work together by building the IFT system up to upper stream of the country and exchange the experience with each other. All beliefs that Padma bridge (New river bridge which is under construction and will connect the Mongla port with Dhaka) will open the new door of freight transportation and integrate with all ports by railway networks shortly. Emerging opportunities, rail link will help to connect port and its hinterland and improve the inland transport networks for transporting intermodal containers easily. In here, respondents are advised to the individual port authorities to take fund from the government or built environment for PPP to develop port and intermodal transport infrastructure to increase hinterland within or out of the country. On the contrary, some respondents advised to think differently and think only port business and not think about out of port premises and depends on the government initiative.

All respondents argued for infrastructural development in six stages for IFT system in Bangladesh as well as for South Asia. Firstly, it is essential to increase the capacity of the ports by. Moreover, they added the assessment or standardization of port infrastructure to compile with the port capacity ranking indicators, equipment and services. Secondly, spatial infrastructure by improving road access to inland and port terminals and thirdly, establishment of new terminal and consider the terminal layout to connect with the all modes. Greatly, Transport [26] infrastructures provide the facilities for moving the freight towards the vessel for final destinations or to consignee premises and its quality services always offers on the volume of demand, the efficiency and effectiveness of the services and the physical scale of the hardware. However, attention [25] to be paid for inland terminal developments for ensuring seamless connection in between intermodal terminal and port.

D. Role of CPA in developing IFT System

Chittagong port is the principal port of Bangladesh who has vast experience in cargo and container handling also financing port related activities all over the country. Recent development of Chittagong Port and its Authority (CPA) in developing new port Payra and inland container terminal (Pangaon) nearby Dhaka had appreciated by all and attracting the world trader and terminal operator to work with CPA jointly. Respondents are confident about the capabilities of CPA and their development approach to the inland transport network’s infrastructure development that will help to develop the IFT system all over the country. They suggested that CPA has to play led role to develop the IFT and assist other ports do the same.
in their respective area and may exchange the experience and human resources. Some respondents argued for changing the role of land port and needs to convert to Dry Port by CPA to serve the IFT to the neighbors India, Nepal and Bhutan regionally also SW China and Myanmar Internationally. One respondent emphasized to work with the China for selecting Chittagong as prime maritime load center in the Bay of Bengal.

Research [22] found the benefits of OBOR (One Belt, One Road) not only for the China but also for participating country that emphasized on connectivity and greater financial integration of the world. So far OBOR map yet not finalized and representation of maritime load center needs to consider Chittagong as key gateway to South Asia. By starting the coastal shipping and road haulage, Myanmar has the opportunity to connect with Chittagong Port of Bangladesh. The role [21] of BCIM economic corridor landscapes to the initiative of OBOR where it will be effective in managing the transport trade in the region profitably by all. Rising [4] of foreland and hinterland connections with the port always helps to sustain the port in the competitive environment or change management in the global shipping market. In here, openness of a country to the international trade has featured the economic activity where it becomes necessary to strengthen her port system to sustain in the overseas trade.

E. Exclusive Ideas from the Respondents

In the qualitative research survey, respondents suggested some exclusive ideas as innovation and others that will help to do future research of IFT as below:
1. Remove the high emissions truck and trailers from the transport pool. Study [15] recognized the best practice of Japan where IFT has significant impacts in reducing the cargo movement by truck.
2. Port pricing that needs to adjust and not be burden for the port users. In such a context, it is [24] advised to the government for acting as responsive authority regarding port affairs where unsatisfactory and expensive port services may away from the profits also remove that country out of international market.
3. Dynamic port management for whole country and merge all port authorities under the Ministry of Shipping.
4. Special commission for IFT system and mapping the service map of the whole country and convert the land port to dry port with the all facilities of container handling.
5. Innovation in container handling from outer anchorage to the inland riverine container depots in Dhaka without entry to the Chittagong port.

Overall, Performance [4] of a port depends on the internal and external factors where external factors composed the trade orientation of the region that interconnected with the nearby ports and all of those factors are beyond the direct control of port authorities, in addition, internal factors are geo-navigational draught problems, labor problems that affect the productivity of the port.

VI. INNOVATION AND INTEGRATION

Innovation is the new ideas that will bring the good things for the organization for increasing the competencies or doing the existing task more strategically and easily. On the other hand, integration helps to reduce the huge number of activity and sharing the works with each other. In managing [10] the freight, study viewed the attempts to achieve greater cooperation between ports by merger and consolidation of port authorities within certain geographical contexts to make common platform. The best example came from the Copenhagen Malmo port where Denmark and Sweden were agreed to merge and develop single port authority. To follow this Bangladesh and India may agree to operate Haldia (India) and Payra (Bangladesh) jointly to provide maritime logistics support in the process of IFT to Nepal and Bhutan prestigiously. To explain, integration is highly appreciated in the single port authority in Bangladesh by merging three authorities of Chittagong, Mongla and Payra port. In here, technical capabilities of Chittagong port may be shared with the underutilized Mongla Port and newly established Payra port. Remarkably, the issue [20] of integrating the Road, Rail and Water ways and their infrastructure is under discuss as because of political will and mutual trust among the countries of South Asia. Unfortunately, there is no container transportation via railway network in between Bangladesh and India but it is easily possible to start this in the banner of BBIN because if available rail track in the geographical area of Bangladesh-Bhutan-India-Nepal (BBIN). Moreover, researchers [27] found that port authorities are playing important role to introduce regional innovation system (RIS) to establish social collaboration, knowledge creation and promote innovation. In here, innovation will help to port authority to facilitate and coordinate in their own role and typically seek for meaningful extensions of their function beyond their traditional role under the change management. The concept [5] of integration in the port context has essentially concerned about IFT and organization ties with the global carriers for responding to the changing requirements of industrial and commercial enterprises also improving their own internal efficiency. In addition, One Belt One Road -OBOR’s [21] Maritime Silk Road - MSR is attributed for supplying the transport demand of SW region of China as connector of The Silk Road Economic Belt and the 21st-century Maritime Silk Road (MSR). In here, China’s proposed OBOR is the innovation for the current world where integration is escalated to support the initiative to develop the transport connective all over the world as well as sharing the responsibilities, destiny, political trust, economic integration and cultural transaction prestigiously. As a part of OBOR, MSR is the downwards maritime stream
line to facilitate the seaborne trade and will pass the Bay of Bengal where Chittagong port of Bangladesh as regional hub and will be the best location and able to act as MSR maritime load center and will connect by inland intermodal connection to the surface Silk Road Economic Belt. This will cover the economic and industrial areas of Nepal, Bhutan, NE India, SW China, Bangladesh and Myanmar predictably. However, related infrastructure development is required to fill the dream of OBOR in the South Asian region especially in Bangladesh because of inland transport bottlenecks and poor port facilitation.

VII.CONCLUSION

Port development is essential in Bangladesh as per requirements of logistics performance index and IFT system is new features in Bangladesh for developing freight transport management to manage the increased volume of cargo and containers. In addition, Bangladesh is potential to serve the neighbors and that will be treated as maritime logistics business through IFT prospectively. Mention that port [25] governance has been treated comprehensively in literature, however, as major engines for driving economies, port governance is essential to control its activities for managing trade that resulted economic benefits of the country silently. In addition, integrated [3] IFT system is required to develop rail and inland intermodal terminals or dry port that would be the proper strategic decision in the change environment of maritime transport chain.

Greatly, transportation [11] sector is a strong factor in the economic and regional balanced development, therefore, having the great influence on national integration to the world economic market. In the view of shipper perspective on IFT, researchers [18] added that as a single integrated service, intermodal has to behave similarly to unimodal especially in terms of speed, reliability and availability. Activities, resources and the level of inter-organizational relationship between the players in the transport networks are critical and essential in the port value creation process.

From the literature review and extracts from the opinion of respondents, it is realistic that Bangladesh has to work more strategically to set her ports to increase the productivity and enhance the capacity of handling cargo and container. In addition, inland transport networks are very poor and not up to the mark to operate as per standard requirements of IFT. In this connection, necessary infrastructural development is required and need to emphasize on railway network development among the urban cities/industrial areas from/to port. As port and IFT development is a big investment, privatization is the preferable way to manage the capital with the direction of government. Overall, Bangladesh has possibility to connect with the South Asian transport networks by their ports where port authorities need to act vibrantly for their own development, advanced port facilities and inland intermodal distribution networks for increasing hinterland to compete with other regional ports.

VIII. FUTURE DIRECTIONS

This research extracted some points from the literature review, qualitative research dialogues with the respondents, respondents’ recommendation and others. In this connection, fixed some future directions that will help to the governments, academician and others for future adventure and research hypothetically. The future directions are as below:

1. Researcher [14] suggested to use performance indicators for transportation systems for validating and evaluating models, solution methods, corresponding results and strategies. This will help to analyze new problems particularly and in tactical planning of transport management. All ports of Bangladesh should be aware of own performance indicator and benchmark with the Logistics Performance Index of World Bank.

2. Port [13] regionalization permits the development of a distribution network that correspondence more closely to fragmented production and consumption systems. Regional cooperation in port development is essential and need to contribute in the infrastructural development of inland transport networks by all port authorities of Bangladesh.

3. In the process of regional port cooperation and connectivity, work together by all port authorities in South Asia by sharing and exchanging the technical experience and human resource also arrange regional training for port employees.

4. Need to use the existing unutilized port facilities of Mongla where Chittagong Port may push vessel towards Mongla also international marketing and government initiative to offer the port facilities of Mongla to the neighbors.

5. Deep Sea port initiative is directing to the Government of Bangladesh for facilitating the future trade and negotiate with the international donor or terminal operators to invest in this sector.

6. Integration with OBOR, BBIN and BCIM economic corridor for connecting with the Bangladeshi ports and emphasize on the infrastructural development of intermodal rail, road and waterways.

7. Railways face the biggest challenges in the network of inland transportation. Having [18] the feelings of researchers, the coopetition of rail with other modes to provide the quality services to the users with a given timeframe. Chittagong port may finance in the development of intermodal rail network and connect with the Nepal, Bhutan and India directly from the port.

8. Study [5] recommended for the development of port policy that is viable for global players. Port authorities are requested to make common port policy within the Bangladesh by following the role model of other regional country’s port policy.

9. Developing [20] the proper infrastructure that is suitable for handling the vastly increased volume of
freight via road, rail and waterways and effective communication and date exchange. The profit of port authority may reinvest in the port development.

10. Privatization [4] methods in port investment helps to facilitate an advanced port system while minimizing the state expenditure with regulatory control of public sector. Privatization of Bangladeshi ports are appreciated and need to invite international terminal operators for investing in Bangladesh as well as work together to develop the ports as per international standard.

REFERENCES


APPENDIX A. RESEARCH QUESTIONNAIRE.

From the experience of visiting local and international ports, this research developed below questionnaire and worked with the respondents:

01. Do you feel that integrated IFT system will help to improve the transportation system of Bangladesh as well as South Asia?

02. How Bangladesh ports will help to develop the integrated IFT system of Bangladesh especially in developing infrastructure of inland transport networks?

03. What are the obstacles in developing IFT in Bangladesh and offering port transport services to South Asia?

04. Chittagong Port Authority (CPA) is the principal port of Bangladesh and having the capacity (Financially and technically) of developing other ports and intermodal networks. How CPA may help in this regard?

05. Do you have any innovative idea or suggestions for developing intermodal networks by Bangladeshi Ports to play a vital role in Intermodal Freight Transportation system of South Asia?
Acknowledgment. I am greatly indebted to my wife Pompa SAHA who inspired to write this paper. Moreover, I am grateful to our honorable Dean Brigadier General Syed Mofazzel MOWLA (Retd.) of Bangladesh University of Professionals (BUP) for his kind encouragement and motivation.
Assessing SCM: A Procedure Based on a Theoretical Model

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Abstract - Despite the growing attention in supply chain management (SCM) by scholars and practitioners, there is still a lack of academic literature regarding topics such as methodologies to guide and support SCM evaluation. Maximum developed methods have been provided by referring corporations and are controlled in their publication and use. In addition it established the procedure of SCM process. The methodology is based on Cooper, Lambert and Pagh’s original contribution and involves analysis of eleven referential axes established from key business processes, horizontal structures, and initiatives & practices. We analyze the applicability of the proposed model based on findings from online interviews with experts - academics and practitioners. In general terms, the method can be well-thought-out an analytic tool that allows corporations to evaluate their maturity regarding SCM practices. From this analysis, firms can classify and implement activities to improve degree of adherence to the reference model and achieve SCM benefits. This article presents a methodology for evaluating companies’ degree of devotion to a SCM theoretical model. In addition it established the procedure of SCM process and aims to contribute to SCM theory development precisely new initiatives. The goal of this study is to restructured theoretical approach into practical aspects.

Key words: SCM; commercial processes; SCM initiatives & performs.

I. INTRODUCTION

[1] opines that competition within firm is taking a new face and has evolved from firm to firm competition and it has now become competition between supply chains. Numerous scholars have submitted different views on how company connection beyond the immediate business environment lead to high value creation and in turns bring about the achievement of an efficient competitive advantage. Supply chain management (SCM) is fast becoming an important factor in this competitive environment to create a sustainable connection and Increase Company’s performance [2]; [3].

II. BACKGROUND

Academicians and professionals despite increasing interest in the SCM area still lack concrete strategy to direct and sustain supply chain management evaluation and performance [4]; [5]. Studies that are in relation to supply chain management have been showed by consulting firms and are limited in publication as well as use. According to [2] an essential part of this occurrence is that it must present a framework for examination, it must also have an organized system for the supply chain management field development and an explicit appraisal for business implementation which can be regarded as essential to researchers and practitioners.

In recent times supply chain management for lot of individual businesses no longer go in competition as a firm but rather as supply chain. A supply chain according to [6] can be said to be a set of firms that engage in the upward and downward movement of product and services as well as finances and information from the point of production to the point of usage. In summary, we can deduce that the supply chain management makes up the network of business connections.

According to the arguments placed in section1, one can categorize a single business as successful only if it explores and put to use the various business connections to use. Therefore, the genesis of competition could be connected to the supply chain which a company integrates. [7] opines that Presently the ideal competition is not between companies per say but supply chain by supply chain.

III. SCM CONCEPTUAL MODEL

According to [6] six conceptual models can be pointed out from past studies; this six however see the need of executing business procedures.
[8] argues that only two of this six conceptual models present adequate knowledge that go in tandem with research development in this essential area and the supply chain council (SCOR) models.

In this study, cooper, lambert and pahgs supply chain model was adopted to complement the evaluating methodology development suggested in this article due to numerous reasons, amongst which is the fact that its inclusion in existing research is on the high frequency which is more superior to the SCOR model. Another factor is that it is comprehensive defined and broad enough to carry out its potential study [9]. In addition, it is encompassing, since it has the eight main business procedures which involves at least six functional areas. It has more instructional and pedagogical basis since it clearly presents a theoretical framework and presents comprehensive details about the business procedure which develops the possibilities for theory development.

IV. RESEARCH METHODOLOGY

The research methodology approach used in this study brings together the three stages and procedures (figure 1).

![Research Process Diagram]

Figure 1. Research process.

According to [10] we adopt a discovery oriented approach to restructure the preliminary model. This study has to do with discussing abstractions in smaller groups of professionals, both academics and practitioners, in order to refine designs. These practitioners were chosen based on their proficiency in supply chain management, as shown in table 1. All contributors have at least five years of experience in supply chain management.

Table 1

<table>
<thead>
<tr>
<th>Professionals involved in the Discovery Oriented Approach</th>
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<tr>
<td>Academics</td>
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<td>SCM specialist one of the cases studies in Bangladesh.</td>
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<tr>
<td>Expert and consultant in the areas of operations management, productions six sigma</td>
</tr>
<tr>
<td>Specialist in theory of constraints, planning and control of production and logistics</td>
</tr>
<tr>
<td>Specialist in SCM and competitiveness program</td>
</tr>
</tbody>
</table>

After the process of fine-tuning the process and parlance, which should agree with both academic and managerial usage, we then select three cases to pretest the augment the study. These firms identified A,B and C were selected through the purposive sampling technique. Firm C is a multinational. All of them are at the forefront in their markets and has at least fifty years of operation. Firm profiles are presented in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Firm</th>
<th>Profile</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm A</td>
<td>One of the oldest manufacture companies United Communication Service based on electric and electronics company in Bangladesh as well in south Korea Japan and India.</td>
<td>No specified expertise in SCM, but operates through all over Bangladesh</td>
</tr>
<tr>
<td>Firm B</td>
<td>Walton Motors one of the reputed oldest car assemble company in Bangladesh</td>
<td>No recognized expertise SCM, but operators international and nationwide.</td>
</tr>
<tr>
<td>Firm C</td>
<td>3rd electronic and electric company is LG which located in Bangladesh</td>
<td>Firm C successfully operates the SCM management. That operation world and precisely in Bangladesh.</td>
</tr>
</tbody>
</table>
In this section all the stages necessary for establishing the structure to examine company’s degree of adhering to a supply chain management conceptual model are shown in this section.

Stage one: development of the preliminary methodology Based on The Global Supply Chain Forum SCM definition, on the conceptual model of Supply Chain Management presented by Cooper, Lambert and Pagh and on some basic SCM initiatives & practices, the methodology prevents eleven analysis referential axes.

The first nine analysis referential axes are related to major business processes and should show whether the company manages and integrates them with key first-tier customers and key first-tier suppliers. [4]; [5]; [12] put forth the key business processes and they are:

- Demand Management;
- Order Fulfillment;
- Customer Relationship Management;
- Supplier Relationship Management;
- Customer Service Management;
- Manufacturing Flow Management;
- Product Development and Commercialization, and
- Returns Management.

V. PREREQUISITE RELATED TO KEY BUSINESS PROCESSES

According to [13] the main business definitions, goals, processes and procedures stated in past studies were comprehensively examined and rendered into a rated framework or requirement using the parlance of the industrial environment. One hundred prerequisites were established for major business procedures. These prerequisites were given to a selected group made of professional from within the industry, an academic and three professional consultants. After numerous discussions and assembly, we explained which prerequisite should be considered in the study. The last and final requirements are shown in table 3.

Table 3
The requirements for the customer relationship management business process

<table>
<thead>
<tr>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company differentiates customers by identifying key customers</td>
</tr>
<tr>
<td>Company has cross-functional team for customers relationship management</td>
</tr>
</tbody>
</table>

VI. CATEGORIES AND MEASUREMENT SCALE

A set of categories is associated with each requirement of each referential axis. So, each requirement is classified into five categories, and each category reflects the company situation related to that specific requirement.

The categories is characterized by both amplitude and depth. Amplitude is related to the quantity of items to which the requirement is applied and is expressed in two levels: (a) for the majority of the items, and (b) not for the majority of the items. Depth is related to the way the requirement is applied: in a documented manner (formally) and in a non-documented manner (informally).

VII. CONSIDERING THESE SITUATIONS, THE FOLLOWING CATEGORIES WERE ESTABLISHED:

- Category 5 - the company satisfies the requirement for the majority of the items related to it and documents it formally.

Note: The items related to the requirement refers, for example, to customers, orders, events, teams, suppliers, functional areas, departments, and so on.

- Category 1 - the company does not satisfy the requirement.
- Category 2 - the company does not satisfy the requirement for the majority of the items related to it and does not document it formally;
- Category 3 - the company satisfies the requirement for the majority of the items
related to it but does not document it formally;
- Category 4 - the company does not satisfy the requirement for the majority of the items related to it but documents it formally;
- Category 5 - the company satisfies the requirement for the majority of the items related to it and documents it formally.

As a result, category 5 mirrors the best situation concerning the parameters toward the high degree of adherence by the company to the SCM conceptual model. In contrary to this, Category 1 reflects the worst situation.

VIII. ANALYSIS OF THE RESULTS

Normally companies would apply many of the requirements of business processes, but this does not necessarily mean that they have successful SCM. What is of upmost importance is the integration and management of all business processes, and to do this, companies must apply all the requirements of all processes, for the majority of the items related to each requirement, and in a documented manner (i.e., formally). This is called the highest ordination and this is the situation that can lead companies to the highest degree of adhering to the SCM conceptual model.

So, the degree of company adherence is obtained in relation with the frequency of requirements occurring in the highest ordination, taking into account all referential axes. Table 3 helps organize the data and provides the degree of adherence.

Table 3
Company Degree of Adherence in Dependence of Adherence

<table>
<thead>
<tr>
<th>Adherence A (%)</th>
<th>SCM-Degree of Evaluation Adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>90&lt;100</td>
<td>Ideal</td>
</tr>
<tr>
<td>80&lt;90</td>
<td>High</td>
</tr>
<tr>
<td>70&lt;80</td>
<td>Medium</td>
</tr>
<tr>
<td>A&lt;70</td>
<td>Low</td>
</tr>
</tbody>
</table>

IX. ORGANIZATION AND PLANNING OF APPLYING THE METHODOLOGY

The requirements established for the referential analysis axis form the questions that are put together in a questionnaire built on a structure aiming to facilitate its application and motivate respondents.

Considering the complexity and the high number of questions, the data collection instrument should be applied by personal interviews. In this manner the researcher can get more detailed information, explain the questions, provide detailed instructions, and assure response reliability by checking evidence. However according to [14], there are disadvantages when using this method; for instance, higher costs, more stress and less privacy. In these applications, disadvantages are easily compensated for by the advantages, mainly taking into account that SCM is a new field and needs practical and theoretical complementation.

X. DEVELOPMENT OF ADJUSTED METHODOLOGY

After its development, the introductory methodology was pretested to evaluate the defined requirements, categories, measurement scale and matters related to the interviewees’ understanding of the questions, clarity of construction and readability, comprehensiveness and focus of requirements and related categories and acceptability. Based upon the results of the pretest, some adjustments were made in terms or eliminating or rewording some items and others were added.

XI. DEVELOPMENT OF EVALUATING METHODOLOGY

As initially stated, an illustration application was conducted in three relevant companies to accomplish [15]; [9] recommendations, to fine tune the technique and for indicating its relevance.

For this purpose, an intentional sampling was established. And this is a non-probabilistic sampling in which the researcher utilizes professional experience to select, for instance, the companies that will participate in a defined research rather than selecting them haphazardly. The companies included one with recognized competency in SCM, and two companies without recognized competency in the area. However, the three companies are leaders in their respective supply chains.

After the illustration application, the knowledge gained was analyzed and added to the adjusted methodology, resulting in the final methodology for evaluating company degree of adherence to a SCM or SCM – EAD Methodology conceptual model.
XII. CONCLUSIONS

The SCM today is undoubtedly a contemporary and important area in the field of operations management, the literature still shows a paucity of academic studies involving key topics, such as generic methodologies to guide and support SCM implementation and evaluation. Furthermore, it reconstructs the effective model for rising industry for better performance.

The scientific development of a structured supply chain management discipline requires that advances must be made in the development of measurement tools as well as in theoretical models to improve supply chain management understanding.

This paper makes several contributions to the knowledge of supply chain management evaluation. In general terms, the methodology proposed in this article can be considered to be a diagnostic instrument that permits companies to evaluate their status concerning Supply Chain Management aspects. Based on this diagnosis, companies can identify and implement activities aimed at increasing their acceptance of the reference model and augmenting the benefits gained through Supply Chain Management.

REFERENCES


Performance Framework for Driving Results: How Seattle IT is improving performance using the framework approach

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Seattle Information Technology, Washington

Paper# ICBM-17-349

Abstract

Government organizations can be as effective as private organizations if they take a strong approach to drive results through performance framework. Performance framework is made up of a series of Steps that identify the desired results and drive towards achieving them. These can be as simple and basic Step as “Define the organization’s mission” to more elaborate “Monitor and report progress frequently, personally and publicly”. Key to creating the right performance framework is by establishing a set of Steps appropriate for the organization.

This paper describes how City of Seattle, Washington is using this approach to work towards building an interconnected, innovative and data driven citizen services and providing great user experience through its Information Technology Department.

Key Words: Performance, Framework, KPI, Permitting System

INTRODUCTION

City of Seattle is the local government entity responsible for development, police, fire, utilities, parks and transportation services for its 750,000 residents. Seattle IT is the technology department with 650 employees within the City of Seattle government that has 10,000 people work force. It’s a newly formed department through consolidation to increase the performance of information technology services across the City workforce and enhance public engagement.

City leadership realized early on that just consolidating the functions into one department will not be sufficient to improve performance and that a new approach is needed to get the department functioning right from the outset. They decided to achieve this through a performance framework approach that has three steps: Create Performance Framework, Drive Performance and Sustain Performance. Each of these phases is made up of a set of specific practices that need to be established and set in action to drive results.

The first program to use this approach is the Permitting System Integration (PSI). PSI will provide a coordinated and seamless experience across departments for residents and business owners seeking permitting and licensing, while meeting the internal needs of each department. It’s a five year program that encompasses multiple departments of the City.

PERFORMANCE FRAMEWORK

CREATE THE PERFORMANCE FRAMEWORK

Practice 1: Define and articulate the organization’s mission and objectives

A company's mission statement is essentially its statement of purpose. It describes what it does and why. The mission statement supports the vision and serves to communicate purpose and objectives to employees, customers, vendors and other stakeholders. It serves as a guide for all of the company's decision-making. Leaders in an organization will have to articulate clearly and frequently what the organization is trying to accomplish or its objectives.

Seattle IT’s primary mission statement is: Powerful technology solutions for the City and public we serve. Specific objectives of the PSI project that go toward achieving this mission are:
1. Create user-centric solutions that connect the public with their government
2. Standardize cross-department services
3. Identify and develop tools that broaden public engagement

The mission and objectives were communicated via a kick-off meeting held with all other department directors as well as impacted stakeholders. These are also included in all the pertinent documents and communications as reminder throughout project

**Practice 2: Identify key performance deficit - What’s keeping the organization from achieving its mission and objectives**

The mission of any organization may be inspirational; nevertheless, it lacks specificity. It fails to provide any useful guidance about what to do next: What specific problem does the organization need to attack now to significantly improve its performance? Thus, the organization needs to determine what key failure is keeping it from achieving its mission and objectives.

At Seattle IT first and foremost we had to identify what’s the key deficit we’re trying to solve. We had to figure out whether it’s the input, outputs or the processes that were causing performance deficit. This was done by actively engaging with City stakeholders (both internal and external) to understand the current performance of licensing, permitting, and regulatory activities. The gathering of data was achieved through internal and external stakeholder interviews, focus groups, direct observation, and specific data requests.

The identified key performance deficit in this case was the lack of unified experience. More specifically:
- The customer has to move from department to department for a permit.
- There was not one standard system for the City departments and no one place for the customer to submit applications.
- Majority of permit applications were coming manually and it was taking up so much of City employee’s time as well as the customer.

**Practice 3: Establish performance targets**

Once we’ve identified the deficits it’s time to establish the performance targets. The leaders have to make a subjective judgement about the organization’s performance and decide on where they would like to focus for improvement.

One of the key challenges with performance management is selecting what to measure. The priority here is to focus on quantifiable factors that are clearly linked to the drivers of success in your business and your sector. These are known as key performance indicators (KPIs).

The three KPIs that were identified for the PSI project were:
1. The City reduces number of manual permits by 80% within the next two years.
2. The City makes it simple and easy to navigate the license and permitting system online.
3. One stop shop for permitting and licensing
4. The City meets or exceeds standards for timely turnaround of 24 hours.

**DRIVE PERFORMANCE**

Now that we have established the mission and objectives and the performance targets (KPI), the next step is to set up the practices that will drive performance to achieve these targets.

**Practice 4: Link target to mission**

In driving performance we need to make sure that the KPIs are directly linked to one or multiple specific mission or objectives. For the PSI project this link is shown as follows:

<table>
<thead>
<tr>
<th>Mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create user-centric solutions that connect the public with their government</td>
</tr>
<tr>
<td>Standardize cross-department services</td>
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<tr>
<td>Identify and develop tools that broaden public engagement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KPIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>The City reduces number of manual permits by 80% within two years.</td>
</tr>
<tr>
<td>The City makes it simple and easy to navigate the license and permitting system online.</td>
</tr>
<tr>
<td>One stop shop for permitting and licensing</td>
</tr>
<tr>
<td>The City meets or exceeds standards for timely turnaround of 24 hours.</td>
</tr>
</tbody>
</table>

The first two KPIs are tied to the mission of building a user centric solution connecting the public with the government. Having a one stop shop for the public is
tied to the mission of user experience as well as standardizing cross-departmental services. As it becomes easy for customer to use and turnaround time is reduced the mission of developing tools to broaden public engagement will be achieved as more state of the art technologies and tools are introduced.

**Practice 5: Build operational capacity needed to achieve the targets**

As the targets are set now the leaders will have to ensure the organization has the operational capacity to achieve their targets. The organization’s leadership has to give teams the capabilities necessary for achieving these targets.

This operational capacity might be money and other resources, people and training, technology and production systems, the cooperation of essential partners, and a road map of tactics and strategies that help teams achieve their targets.

**How Seattle IT did increase operational capacity?**

A consolidated project management office (PMO) was created to build the operational capacity needed for PSI to achieve the performance target. Additional funding was provided to accommodate all of the business process changes across multiple departments. The PMO identified the tools, processes and resource capacity needed to achieve the KPIs.

The PMO first selected a City wide solution platform for permitting and licensing that helped them automate the permit process to reduce manual permit submission across all departments. This also achieved the objective of standardizing cross departmental services.

The PMO identified the projects needed for each of the departments to be integrated into this platform solution. Each of the projects was given a project manager with an implementation team. These teams implemented an online “One stop” service portal for customers where customers could find all the necessary information for permitting and submit the applications. By creating a program and breaking this up into smaller projects for each department yet monitored through the program created a seamless approach to achieving the KPIs.

**Practice 6: Monitor and report progress frequently, personally and publicly**

First, this practice of monitoring and reporting needs to dramatize that the organization’s leaders are paying attention to its progress. The leaders will also have to publish the performance data so that every team knows that the leadership knows (and that everyone else knows) how well every team is doing. One of the ways many organizations will monitor and report is through a leadership strategy called “PerformanceStat”. It’s an ongoing series of regular, frequent, integrated meetings. During the meeting the leadership team uses performance data to compare to target. This technique facilitates internal accountability and transparency by monitoring metrics and spotlighting ongoing issues to provide a platform for performance improvement.

**How Seattle IT is monitoring progress?**

For PSI program, this was done through TechStat. Managers and executives meet on the second and fourth Monday of each month for TechStat Operations and TechStat Projects, respectively. The emphasis is on metrics, trends, and providing the story behind our organizational data. The PSI strategy development project is being monitored monthly as per the KPIs.

1. **KPI: The City reduces number of manual permits by 80% within a year.**

   This KPI is monitored as the new online permit system started applications online. Using the daily intake from public users it was tracked whether the application was submitted online or manually. Initially the target was set to monitor quarterly performance. Initial performance was not even at 50% but gradually the improvements started to show.

2. **The City makes it simple and easy to navigate the license and permitting system online.**

   Metric results from usability testing was monitored for progress on this KPI

3. **KPI: One stop shop for permitting and licensing**

   This was achieved through a permit system portal that was built to be shared by all departments. Progress was monitored based on how many new departments joined the portal and how many customers were visiting
the site as well as submitting applications using this portal.

4. **The City meets or exceeds standards for timely turnaround of 24 hours.**

   The progress was monitored through how much time it was taking for the city to respond to customers, issue a permit and close a project. Goal was to reduce the delay in turnaround time by 10% each month.

### SUSTAIN PERFORMANCE

**Practice 7: Reward success to make it sustainable**

This is critical to the framework to enhance and sustain performance. Once leaders have established performance targets they need to recognize and appreciate the team for successes so that they become sustainable. To keep the team motivated the leaders can break down the targets to quarterly and monthly intermediate milestones to be achieved instead of waiting until the end of the project.

And when a team has an important milestone achieved, the organization’s leaders need to find a way to communicate, both to this team and to everyone else throughout the organization. The success of the team often depends on the success of the individuals. Creating healthy competition and giving them a chance to show results generate enthusiasm and excitement to perform. This creates esteem opportunity.

**Success and Reward at Seattle IT**

For the PSI program Executives decided to reward the team with tangible gift and personal acknowledgement. The targets were broken into quarterly achievements. When the team achieved certain milestone, they received commendation that went into their personnel files. They also did milestone celebrations. The team was also recognized and highlighted during City wide All-hands meeting. In this case the team valued the recognition of the managers as well as peers.

During the course of sustainment the leaders may decide to change the performance strategy, create a new target or create how they’d like this to be monitored. However, the performance framework will still stay the same. We’ve to ensure the KPIs are still tied to the mission of the organization. We have to keep on revisiting and adapting to the changes as we go to reach to the goal and drive the results that are anticipated.

### CONCLUSION

Through this performance framework government organization like Seattle IT we’re finding that performance can be improved that drive results. Since the PSI project has started a year ago the results show improvement in user experience as 60% of the permits are being processed online. It’s an intermediate goal that the program has achieved. The program leaders are continuing to monitor at each interval to ensure intermediate targets are met to reach the ultimate objective.

### References:


Potential of using recycled tires as high valued products for economic gains considering SDG: Perspective from Bangladesh

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Paper ID:ICBM-17-455

Abstract: Now a days, we are experiencing wide variety & modes of transport by land, which results in dumping of old tires. But the old tires are not recycled properly after its use in Bangladesh. Since we have an abundant supply of used tires we can produce different types of products which can be economically significant if proper utilization of resources is achieved. The potential for high valued items is significant (both domestic and international market). Using the SDG as indicators towards development of infrastructure, good health & well-being, sustainable economic growth etc. this paper attempts to link these aspect with the recycling tire industry. Through secondary data, this study will emphasize on the prospect and challenges of using old tires to gain economic significance in Bangladesh. The study will conduct FGD from industry experts & survey to understand the challenges & feasibility of this industry and propose actions to take thereof.

Key Words: Tire Industry, Recycling, Prospects & Challenges, High Value products, SDG.

1. INTRODUCTION:

Transport sector of Bangladesh is an important part of the nation's economy. Since the liberation of the country, the development of infrastructure within the country has progressed at a rapid pace, and today there is a wide variety of modes of transport by land. However, there is significant progress still to be made to ensure uniform access to all available transport. Transport Sector is a vital sector of countries infrastructure. Tire is a major component of Vehicle. And tire is frequently changing & major cost consuming components as well. We are paying a huge amount of foreign currency to purchase vehicle tire every year, because the entire consumption is depending on import. Though it is frequently changing we got huge number of old tire after its use. But in our country the old are not properly used. We are using the tire in less productive sector. We are using old tire for producing some low value product except one or two items in our country. The production process is huge threat for our environment. Main ingredients of tire are rubber. This is re-useable. And except rubber we can get wire from tire. Though radial tire is too much popular in transport sector, so we can get a huge quantity of metal wire from old tires which makes the old tire more valuable.

The tire made of Nylon, Rayon or polyester Chords is called Bias Tire [1]. And the tire made of wire is called Radial tire. There is not only difference in ingredients (Nylon,Polyester,Rayon Chord & Wire).But also we found differences in production process.

Table 1: Tire type normally using in Bangladesh [2]

<table>
<thead>
<tr>
<th>Tire Type</th>
<th>Nylon, Rayon, Polyester Chord</th>
<th>Wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Rickshaw</td>
<td>Available</td>
<td>Not Avail.</td>
</tr>
<tr>
<td>Motor Cycle</td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>Light Truck</td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>Bus/Truck</td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>Agriculture Tire</td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>Off Road Tire</td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>Sp. Vehicle Tire</td>
<td>Available</td>
<td>Available</td>
</tr>
</tbody>
</table>

2. RESEARCH METHODOLOGY:

The most tire consumption area is Dhaka & Chittagong in Bangladesh considering quantity based on BRTA Data[3]. On the other hand North & South Bengal is the major part of using big size tires. There are some differences in the ingredients of different types of tires. We selected Dhaka & Jessore for our research. Because the two cities represent the entire country scenario. Dhaka is the most tire consumed area. And Jessore can represent the entire country scenario. This research followed the qualitative research method. Because this is an exploratory research. We tried to explore the potentiality of high valued product produced by old tires. This qualitative study was done based on both primary & secondary data. For Primary Data we prepared open ended question for different entities of entire supply chain of old tires. The shopkeeper who sales tires, the small old tire businessman, the wholesaler, Final user, Industry for recycle or reuse. We had some common question for all parties & some different question based on their character in supply chain. For collecting Secondary Data we targeted:

1) 03 Small size tire selling Dealer of Dhaka
2) 03 Mid-size tire selling dealer of Dhaka
3) 03 Big size tire selling dealer of Dhaka
4) 05 dealer of Jessore Area
5) 03 Small & Medium size businessman of old tires those who purchase old tires directly from tire selling shop
6) 02 wholesaler of old tires
7) 01 Brickfield Owner/Manager
8) 01 cottage industry Owner/Manager
9) 01 Oil produce from tire company Owner/Manager

Based on their character in supply chain the questionnaire outline are as follows:

1) Length of business
2) Core or Side business
3) Sources of procurement
4) Is the sourcing is stable
5) Structured procurement system or not
6) Own arrangement for recycling
7) Support from outside for recycling
8) Reuse product production arrangement
9) Per unit cost consumption up to distribution of final product
10) 10) ROI %

3. LITERATURE REVIEW:

We found that some first world counties are using old tires very systematically & producing lots of items which is economically very significant. But in our country we found that there is no policy for use the old tires. Not found any specific steps for making arrangement of using the old tires from both government & private sector. We got very few initiatives from private sector till now. We found that, some factories are established in Bangladesh for producing oil from old tires. But there is threat for environment as well. That means the factory which produce oil from old tires are contributing in economy more than regular use of old tires but they are not safe for our environment if the exact process will not followed by that organization. Massive disposal sites of scrap tires is common in many cities of modern times as about 1,50,000 tons of scrap tire is produced per year in Bangladesh [4]. The stored used tires slowly degrade under the effects of solar radiation as well as rusting of steel takes place. Degraded material would slowly contaminate soil and underground water over years. The disposal sites waiting under the sun for extended periods of time might catch on fire either by accident or because of bottles or broken glass focusing sunlight. Tires burn with thick black smoke and heat, quickly spreads over the whole disposal area, and leaves oily residue contaminating the soil. Such fires are difficult to put off and generates significant amount of air pollution. One of the overseen problems of scrap tire disposal yards is that these areas become breeding places for rodents and mosquitoes. Stagnant water that collects inside tires is a suitable breeding place for mosquitoes. Elimination of scrap tire disposal sites by proper recycling would also have secondary advantages of eliminating disposal related problems.

It is estimated that more than 1.2 billion old tires are produced every year all over the world, out of which around 1.50,000 tons are produced by Bangladesh. And these tires are not properly maintained or used in our country. A large quantity of the used tires is being randomly burnt as fuel throughout Bangladesh in the brick field, in road construction and other industrial purposes. Hundreds of different toxic pollutants are created by burning tires as well as an enormous number of small particles that settle deep in the lungs. People of Bangladesh, especially children, are at high risk and have been suffering from different diseases due to heavy air, soil, and water pollution. The toxic smoke emanating from the industries not only affects people, but also damages crops and trees. Moreover, the dumped unwanted crops and trees. Tires are among the largest and most problematic sources of waste. Due to the large volume produced, their durability, and the fact that they contain a number of hazardous components, they should not be ignored. There is no other option except recycling the used tires to reduce environmental damage. It contains a large number toxic substance which may cause of many diseases.

4. RESEARCH OBJECTIVES:

4.1. GENERAL OBJECTIVE:

Bangladesh has a huge consumption of tires. But the old tire is not productively used in our country. The major consumption area of old tire is Dholaikhal, Dhaka. Because the large chunk of the old tires are traded over there and from there the main portion of old tire is distributing all over the country. We already know a large portion of old tires are used. The old tire is used in producing various products. But the products are not very significant which can take a substantial part in our economy. But it can play a bigger role in our economy if we use the exact process flow for reuse, recycle of the old tire. The major focus of the paper is how we can use the old tire with more viability & more environmental friendly way.

4.2. SPECIFIC OBJECTIVES:

1. To identifying the process of collecting old tire from every corner of Bangladesh.
2. To find out the bottlenecks & its solution of collecting the old tires.
3. To identify the exact recycling process for best output.
4. To understand the way to achieve economic viability by using old tires.
5. Find out the way to avoid environmental hazard using old tires.
6. How we convert our existing procurement & recycling system into modern process.

8. Study population for the study:
   1) Tire trader
   2) Recycling factory
   3) Tire base cottage industry
   4) Dholaikhal Traders
   5) Large user of Tires like Bangladesh Army Etc.

5. SCOPE OF THE STUDY:

   Inclusion Area:
   All sizes tires. Like
   1) Bus Truck Tire
   2) Light Vehicle tire
   3) Passenger car tire
   4) Auto Rickshaw Tire
   5) Motorcycle Tire
   6) Rickshaw/Bicycle Tire

   Exclusion Area:
   We included all types of tires for our study. So, there is no exclusion area.

6. CONCEPTUAL FRAMEWORK

The prescribed process is “Hub & Spoke Model” [5] for collecting old tire from nationwide operational area where the tire is being used:

   a) From Tire Traders
   b) From Direct user (Large fleet or organization)
      To
      Regional Collection Center
      To
      Centralized processing system

2) New Product Development process[6]:

For producing value added products for better economic output & attain the SDG we follow the new product development cycle model. And the process is as follows:

2.1) Opportunity Evaluation: What can be produce by the old tires comprising what we are producing right now? We are producing cheap washer for screw, Rubber sole for sandals, fan belt for automotive use & some part of old tires are used for producing oil. oil from tire is more value added product than others what we produce right now. So, we have a lot of opportunity to produce more economically viable product.

2.2) Idea Generation: After evaluating the opportunity the study worked on idea generation. The existing supply chain process development for better availability of old tires. And new type of products market penetration possibility finding.

2.3) Feasibility Study & Market Survey:

After generating idea the study tried to do the feasibility study of the development of existing process. And did a very small survey on new products which the study tried to introduce for Bangladesh Market.

3) Value Chain for old tires:

The value chain for old tires needs to redesign for getting maximum output. The initial part of value chain is procuring the old tires after its use. As per study prescribe, if we follow the hub & spoke model for collecting most of the old tires after use than the entire value chain will be changed. We are producing apx.150, 000 tons of old tires every year. But the companies which produce oil from tire are not getting as much as old tires they needed. And till date Oil from tire is the most value added products are producing in Bangladesh from old tires.

4) Linked with SDG:

No longer can industry focus on a single bottom line: profits. They must consider the quadruple bottom line: PEOPLE, PLANET, PROFIT & PURPOSE [7][8]. If we
consider the Quadruple Bottom line than it automatically helps to achieve the related SDG. Tires are scrapped at a rate of 1 tire/person/year leading to over 300 million tires scrapped per year. Landfill space is becoming more and more scarce as tires do not biodegrade and have significant negative space. This scenario is worse in our country than developed country.

Fortunately tires are 100% recyclable. The high quality of steel and rubber found in tires are easily reintegrated into the manufacturing process at very minimal or no change to existing manufacturing processes. Such products using recycled tires have proved to perform better than traditional materials. The global implications of reducing waste tires are many: improved socio-economic justice, reducing landfill, reducing carbon footprint and creating a safer society.

By this study we tried to link the SDG’s following goals:

1) Development of Infrastructure
2) Good Health & Well-being &
3) Sustainable Economic goal.

7. DISCUSSION:

After getting the expert opinion, Focused group discussion outcome & survey report, the study found the potentiality of old tires is very high. There are two different perspectives of potentialities. One is the availability of the old tires. Another is the possibilities of new product introduction in Bangladesh market & existing raw materials sourcing process development. Tire is produced by rubber, wire, Nylon Chord with lots of chemicals & Materials. Which is dangerous for environment such as cyanide from old tires. On the other hand the study focused on the value added product we can produce by old tires. Right now in Bangladesh the oil from old tire is the most value added product we produce. With this the authors recommended for some new products which will be very effective for Bangladesh Market as well it will boost economy for its value added attributes.

8 FINDINGS:

1) The old tire procurement system is not structured. Seller not to sale it brick field or any unstructured & hazardous one. This is the main bottleneck of old tires business in Bangladesh. In Battery sector, battery companies took the initiative to collect the old battery by setting a uniform price nationwide. So, the old battery industry can easily collect the battery from a remote area of Bangladesh.

2) The primary seller is not aware of the value of old tires.

3) There are three sources of old tires, from where we can collect the old tires.
   a) Tire Traders
   b) Bulk users(Transport Company, Big organizations, Government Body like Army Etc.)
   c) Dumping area(Generally controlled by respective city corporation)

4) The product produce from old tires in Bangladesh except the oil is not very significant one. And the oil producing company also face the scarcity of old tires.

5) Every stakeholder in the entire value chain wants to create better business opportunity for all. But there is lack of coordination in between them.

6) Bangladesh have the market of that type of product which can be produced from old tires. But currently we are not producing it. We are importing. Such as Vehicle Bumper, Athletic turf Etc.

7) Majority percentage of old tires is used in brick field in our country. After that the most consumed area is oil from tire production. Rest amount is used for low value product production & land filling.

8) The most structured wing of old tire industry in Bangladesh is oil production companies. But they are not very much proactive. They are also waiting for local & international support.

8. RECOMMENDATIONS:

1) Old tire collection process need to be developed. Because the main problem is lack of synchronization between the entire process. The tire sellers even the small trader of old tires are not connected with the industry where they can get good price. They are getting the same amount of money if they sale it to the wholesale old tire trader or a Brick field. So the industries which produce high value products are not getting the raw materials as much as they demanded. To fill up the gap between industry levels to field, the industry should set up direct procurement center as the study recommended. The industry should also set a competitive uniform price for all traders to motivate them to supply the old tires direct to the Government should take the initiative regarding old tire collection. That no one could not collect or purchase old tire unless he does not have environment friendly processing unit or agency ship of government approved processing company.
2) Though there is no standard policy & price of old tire in our country. The purchaser is setting the price whatever they want. The data comes out at the time of survey. Around 90% of tire trader told that, the price is set by the old tire purchaser and they have syndicates 40% of old tire businessman agreed with the statement. Though the old tire businessman can purchase the old tire at very cheap price, they can sale it anywhere with profit even in a brick field. But if Government fixes a size wise price of old tires, than the brickfield owner could not purchase the old tires on that price. Than the procurement process of old tires became easier and old tires will be available for more value added products.

3) Though the list of products produced from old tires in Bangladesh are not very rich, the study recommend some products for Bangladesh Market [9].

- Splash Guards and Fenders, Bumpers
- Floor Mats for Cars and Trucks
- Floor Liners for Trucks and Vans
- Hospital, Industrial, and Bathroom Flooring
- Waterproofing Compounds for Roofs and Walls
- Dam, Silo, and Roof Liners

The main thing we need to do introducing a structured old tire procurement system for smooth supply commitment to existing & upcoming business potentialities. If we can ensure the smooth supply chain we can move forward to achieve sustainable

9. **CONCLUSION:**

The old tire is hazard from one side & potential one from another side. The demand of tire is increasing day by day. As a result the number of old tires is increasing. The demand trend of the industry has been driven by numerous factors, including increasing automobile sales, the advancement in the public transportation infrastructure, and increasing GNI per capita. According to Bangladesh Road Transport Authority’s (BRTA) vehicle registration statistics, a total of 13,81,464 vehicles had been registered in Dhaka alone up to December 2016. We are facing lots of hazard from increasing number of old tires. Again the increasing number of old tires also a source for sustainable economic development. If we can ensure that the old tire will be collected as per prescribed format than the environmental pollution will not occur. On the other hand by producing high value products using the tradeoff systems we can achieve sustainable economic growth. Beside this we can also ensure the societal wellbeing with infrastructural development.

10. **REFERENCES:**


Why Are They So Addicted? : Modeling Online Games Addiction Behavior Among University Students

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Keywords—Addiction, Clash of clans, HCI, social interaction theory of planned behavior, PLS.

I. INTRODUCTION

The term “game” is defined as an artificial conflict which performed by players, and eventually a substantive result occurs [1]. Various competitive activities are provided to players, and the game’s storyline plays an imperative role in motivating and engaging the players. According to [2], computer games are not only limited to providing entertainment but also involve different training pertaining to strategic communication, health, and education. Researchers identified several criteria to describe a game which are rules, goals, emotional attachment and consequences of game play [3].

Report suggests that 1.2 billion people are now playing games worldwide, with 700 million of those online [4]. Same source also mentioned that 44 percent of the world’s online population is gamers. They spend a lot of time on these games. These games deliver a virtual situation in where gamers have to face different conditions to move in the upper stages after gratifying those conditions.

Video games now establish one of the world’s leading cultural industries, with a global market of 101.1 billion dollars in 2016 and expecting 108.9 billion dollars in the year of 2017[5].390 American colleges, universities, art and trade schools offer video game-related courses or degree programs. From the initial stage to till now, video games have been experienced by many different categories of players with different types of platforms [6] and all of them 27 percent are causal web gamers who play using personal Computers and 37 percent play games using smartphones 2017 and 21 percent play on their handheld device [7].

Nowadays, online games are suitable to participate multiplayer because of allowing software and computers to interact with one another [6]. Therefore, people are now easily getting connected globally via gamming. According to Entertainment Software Association (2016) .54 percent of the most frequent gamers play with others in different region and53 percent of the most frequent game players feel, video games help them connect with friends. Not only that 42 percent of the most frequent game players feel video games help them spend time with family. This report also showed that 40 percent of gamer play with their friends. Beyond the graphically rich gaming environment, these games show increasing success since they seem to meet many social and psychological needs of the players. The players' psychopathological profiles mainly associated with the risk of game addiction.

To our knowledge, just a few studies have investigated the relationship between the constructs of theory of planned behavior (TPB), social interaction and human computer interaction with players’ continuance intention of playing online games. This raises questions about the antecedents of continuance intention to play online games and its impact on online games addiction. Identifying the factors which influence players’ continuance intention would assist us to implement the right strategy to discourage players to become addicted. A better understanding of the determinants of online games addiction among students will allow educators for more informed decisions to implement right strategy to stop addiction motivates our research question:

RQ1: Does theory of planned behavior influence continuance intention of playing online games?

RQ2: Are there any influence of social and human computer interaction on the attitude of playing games?
RQ3: Does continuance intention of playing games lead to games addiction in terms of withdrawal, tolerance, life satisfaction and substitute satisfaction?

In the following, we first addressed the theories related this research. Second, we created a research model and formulated hypotheses. Third, we tested our model using survey questionnaire among 201 students from two different universities. We then discussed the results, discussion and implications for research and for practice.

II. LITERATURE REVIEW

Theory of Planned Behavior

TPB was originally based on the theory of reasoned action [9], which is designed to explain almost any human behavior and has been proven successful in predicting and explaining behavior across various application contexts. It postulates that individuals’ behavioral intentions are determinants of their actual behavior. Behavioral intention in TPB is a function of three determinants: attitude, subjective norm, and perceived behavioral control. Attitude refers to an individual’s positive or negative feelings about performing the target behavior. TPB predicts that the more favorable an individual evaluates a particular behavior, the more likely he or she will intend to perform that behavior [8]. Subjective norm reflects a person’s perception that most people who are important to them think they should or should not perform the behavior in question. The more an individual perceives that significant others think he or she should engage in the behavior, the greater an individual’s level of motivation to comply with those others [9]. Perceived behavioral control (PBC) reflects perceptions of internal and external constraints on behavior [10]. TPB has shown strong predictive utility for a wide range of behavioral intentions and actual behaviors, and a recent meta-analysis conducted by [11] also provides support for its efficacy.

Human-Computer Interaction

Interaction with human-computer interface was defined as the junction of contact between the application (system, apps, and games) and the end user, which enables the user and the computer to communicate with each other [6]. The interactive communication between users and online games takes place via computer/ mobile hardware and software interfaces. A player’s acceptance or rejection of a game can be originated from a good HCI.

Social Interaction

[12] indicated that many players enjoy the online games because they help them enhance their social contacts and give access to computer-mediated patterns of interactions with fellow players. [13] also suggested that social interaction can cause immersion in games.
system and browsers, and occasionally, users must pay to play the game online or must register. These issues might cause discomfort to the players, who might lose their actual opportunity to play the game. For this reason, we see an issue concerning the effect of perceived behavior on actual playing of a game.

H1. Attitude has positive impact on continuance intention to play online games.
H2: Subjective norm has positive impact on continuance intention to play online games.
H3: PBC has positive impact on continuance intention to play online games.

Human computer interaction, social interaction and continuance intention

Interaction with human-computer interface (HCI) was defined as the junction of contact between the application (system, apps, and games) and the end user, which enables the user and the computer to communicate with each other [20]. The interactive communication between users and online games takes place via computer/mobile hardware and software interfaces. A player’s acceptance or rejection of a game can be originated from a good HCI. Thus we propose

H4: HCI has positive impact on continuance intention to play online games.

Online social networking technologies changed the trend of digital games to social network-based online games [21]. Reference [22] also discovered strong significant evidence about the relationship between social interaction and continuance intention. Aligned with this evidence, we also assume that this interaction increases social collaboration as well as the fun and flow.

H5: Social interaction has positive impact on continuance intention to play online games.

Relationship between continuance intention and online games addiction

Addiction in a clinical psychology context is defined as “as a medical condition characterized by compulsive engagement in rewarding stimuli, despite adverse consequences” [23]. The more instances of usage and more time spent on online games causes’ game addiction to become more likely. Most evaluations of online games usage are based on the number of times one plays per day. In this case, [24] stipulated that excessive use of social network game causes the game addiction. Reference [25] modified Young’s Internet addiction scale into the Mobile [26] internet addiction scale to Facebook addiction scale. We therefore decided to change the original interrogative statements into positive statements to include university students in an assessment of online games addictive behavioral events. This study modified [25] addiction scale to make it fit the context of online games. Reference [25] identified four dimensions of Facebook addiction which we transformed into online games addiction. Therefore, the hypotheses are

H6: Continuance intention to play games has positive impact on games addiction

As a result our final research model is drawn below in figure 1

![Figure 1. Research Model](image)

IV. RESEARCH METHODOLOGY

Data collection procedure

This is a quantitative study. Data was collected via survey questionnaire. A total 300 questionnaire were distributed to the students of University A and B. In this research, we actually measured of actual usage of strategy game called “Clash of Clans”, a video game which was developed and published by Supercell, a mobile game development company. Out of 300, a total of 201 were valid responses.

Measures

The survey questionnaire contained two sections. First section asked about their age and gender. Second section controlled with measurement items. The list of measurement items are given below in table 1.
Table 1. Items of the questionnaire

<table>
<thead>
<tr>
<th>Withdrawal</th>
<th>1</th>
<th>When you are not on Clash of clans, you will feel sad, in low spirits, and anxious, but after going on Clash of clans, these feelings will disappear. [25]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>When you are not on Clash of clans, will you still think about being on Online Game or imagine that you are on Clash of clans?</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>You would rather spend more time on Clash of clans than go out to spend time with people.</td>
</tr>
<tr>
<td>Tolerance</td>
<td>1</td>
<td>The time I spend on Clash of clans usually exceeds what I expected.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>I will overlook academic work to spend time on Clash of clans.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Before I have to do something, I will check my Clash of clans to see if there is new information or there are games to play.</td>
</tr>
<tr>
<td>Life problems</td>
<td>1</td>
<td>When people ask me what I do on Clash of clans, I will become more defensive or private.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Because I spend too much time on Clash of clans, my academic work or grades have been affected.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>My academic performance and attention have been affected by Clash of clans.</td>
</tr>
<tr>
<td>Substitute satisfaction</td>
<td>1</td>
<td>I like to make new friends on Clash of clans on this website/app.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>I have discovered that I want to be on Clash of clans again.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>I am scared that without Clash of clans, life will become boring, empty, and uninteresting.</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>1</td>
<td>People important to me supported my playing Clash of clans on this website/app.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>People who influence my behavior wanted me to play Clash of clans on this website/app instead of any alternative activities.</td>
</tr>
<tr>
<td>Social interaction</td>
<td>1</td>
<td>Playing Clash of clans game on this website/app enables me to make friends.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>I enjoy meeting the friends I make while playing Clash of clans on this website/app.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Communicating with others makes Clash of clans on this website/app more enjoyable.</td>
</tr>
<tr>
<td>Perceived behavioral control</td>
<td>1</td>
<td>I have the knowledge to play Clash of clans on this device.</td>
</tr>
</tbody>
</table>

Table 2. Demographic information

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-20</td>
<td>91</td>
<td>45.27%</td>
</tr>
<tr>
<td>21-23</td>
<td>105</td>
<td>52.33%</td>
</tr>
<tr>
<td>More than 23</td>
<td>5</td>
<td>1.5%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>152</td>
<td>76.0%</td>
</tr>
<tr>
<td>Female</td>
<td>48</td>
<td>24.0%</td>
</tr>
</tbody>
</table>

The measurement items were taken from the previous literature. Items for TPB, HCI and social interaction were taken from [6]. Continuance Intention was adapted from [15]. The rest items related withdrawal, tolerance, life problems and substitute satisfaction were adapted from the research of [25]. 5 point likert scale was used to measure the items where 1 indicated strongly disagree, 2- disagree, 3- neutral, 4- agree and 5- strongly agree.

Respondents Profile

The demographic of the respondents tabulated in Table 2 were derived from descriptive analysis. The majority of the age group (52.3 %) was in the category of 21-23 years old. Most of the respondents were Male which is 76.0% and the frequency of the females is 24.0 %. All the students are member Clash of clan games.

The respondents’ demographic information is given in the table 1 below.
Data analysis strategy

To analyze the research model we used the Partial Least Squares (PLS) analysis using the SmartPLS 3.0 software [27]. Following the recommended two-stage analytical procedures by [28]), we tested the measurement model (validity and reliability of the measures) followed by an examination of the structural model (testing the hypothesized relationship) (see [29, 6]). To test the significance of the path coefficients and the loadings a bootstrapping method (5000 resamples) was used [29].

V. RESULT

Measurement Model

To assess the measurement model, two types of validity will be examined, first the convergent validity and then the discriminant validity. The convergent validity of the measurement is usually ascertained by examining the loadings, average variance extracted and also the composite [30]. The composite reliabilities were all higher than 0.7 and the AVE were also higher than 0.5 as suggested in the literature (see Table 3). The discriminant validity of the measures (the degree to which items differentiate among constructs or measure distinct concepts) was examined by following the [31] criterion of comparing the correlations between constructs and the square root of the average variance extracted for that construct (see Table 4). All the values on the diagonals were greater than the corresponding row and column values indicating the measures were discriminant.

Table 3. AVE and Composite reliability

<table>
<thead>
<tr>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addiction</td>
<td>0.917</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.912</td>
</tr>
<tr>
<td>Continuance intention</td>
<td>0.945</td>
</tr>
<tr>
<td>HIC</td>
<td>0.935</td>
</tr>
<tr>
<td>PBC</td>
<td>0.858</td>
</tr>
<tr>
<td>Social interaction</td>
<td>0.927</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>0.907</td>
</tr>
</tbody>
</table>

Table 4. Discriminate Validity

<table>
<thead>
<tr>
<th></th>
<th>Addiction</th>
<th>attitude</th>
<th>Continuance intention</th>
<th>HIC</th>
<th>PBC</th>
<th>Social interaction</th>
<th>Subjective Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addiction</td>
<td>0.702</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>0.540</td>
<td>0.801</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuance intention</td>
<td>0.618</td>
<td>0.754</td>
<td>0.923</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIC</td>
<td>0.535</td>
<td>0.641</td>
<td>0.499</td>
<td>0.910</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>0.365</td>
<td>0.302</td>
<td>0.436</td>
<td>0.632</td>
<td>0.858</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social interaction</td>
<td>0.778</td>
<td>0.716</td>
<td>0.623</td>
<td>0.535</td>
<td>0.418</td>
<td>1.900</td>
<td></td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>0.760</td>
<td>0.780</td>
<td>0.600</td>
<td>0.463</td>
<td>0.276</td>
<td>1.629</td>
<td>0.874</td>
</tr>
</tbody>
</table>

Note: Diagonal represents the square root of Average Variance Extracted (AVE)

Structural Model

To assess the structural model [29, 32] suggested looking at the $R^2$, beta and the corresponding t-values via a bootstrapping procedure with a resample of 5,000. They also suggested that in addition to these basic measures researchers should also report the effect sizes ($f^2$).

Table 5. Hypothesis test result

<table>
<thead>
<tr>
<th></th>
<th>Path coefficient</th>
<th>T Statistics</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_1$ Attitude $\rightarrow$ Continuance intention</td>
<td>0.600</td>
<td>4.623</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_2$ Subjective Norm $\rightarrow$ Continuance intention</td>
<td>0.245</td>
<td>2.600</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_3$ PBC $\rightarrow$ Continuance intention</td>
<td>0.013</td>
<td>0.213</td>
<td>Not supported</td>
</tr>
<tr>
<td>$H_4$ HIC $\rightarrow$ Attitude</td>
<td>0.354</td>
<td>5.182</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_5$ Social interaction $\rightarrow$ Attitude</td>
<td>0.536</td>
<td>7.978</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_6$ Continuance intention $\rightarrow$ Addiction</td>
<td>0.618</td>
<td>12.086</td>
<td>Supported</td>
</tr>
</tbody>
</table>

The significance of the hypothesis is measured by the significance level of each path coefficient. This means, with regard to our model (see Table 5), the relationship between ATT ($\beta=0.600, p<0.01$) and SN ($\beta=0.245, p<0.01$) on CI are strongly significant which indicate $H_1$ and $H_2$ are supported. Surprisingly, $H_3$ which was relationship between PBC and CI is non significant. We also found that HC ($\beta=0.354, p<0.01$) and SI ($\beta=0.536, p<0.01$) significantly influence CI. Thus, $H_4$ and $H_5$ are also supported. Result indicates that our final hypothesis $H_6$, CI has significantly positive impact on games addiction. Overall, our model indicates 37.9% of the variance associated with online games addiction. See figure 2 for final result.

Figure 2. Final Research Model
VI. DISCUSSION

The research goal of this study was to investigate the role of various factors from theory of planned behavior, interaction and continuance intention of playing games to measure online games addiction behavior of the students. Our developed research model argued that apart from perceived behavior control, the other variables are strong predictors for online game addiction. The result of the present study suggests that all of our hypotheses are significant except H3.

The relevant literature of TPB has repeatedly suggested that such factors affect the behavior of users, particularly in the field of information system, as supported in the results of this study. Students feel a favorable attitude toward the game, and they spend more time. As a result, our H1 is significant. This result is consistent with [6] in the context of tertiary level students. In an online community, people who are engaged together share a vision [33], and that shared vision influences other friends to join and play. Therefore, our H2 is significant. PBC refers to self-efficacy and perceived ease of use of the system. This indicates that the easier it is to play the game, or if players believe in their ability to browse the internet, register and play online, players’ playing time will be greater. Surprisingly, H3 was not significant. We assume, some players still discovering various functionalities of clash of clan games but that is not affecting their continuance intention of playing the game.

Social interaction and communication with players or computers cause gamers to experience a sensation of physical and mental connection with a games-based social network [22]. These issues cause our H4 and H5 significant. This result is in line with the research of [6].

Finally, H6 indicated higher level of continuance intention leads to higher level of online games addiction in terms of withdrawal, tolerance, life problems and substitute satisfaction. This result suggests that players spent more time browsing game feeds, games chat rooms, and apps (including games) on a daily basis, and that continuance intention leads to various types of addiction, which is supported by the research model.

Theoretical and practical contribution

The key contributions of this paper are given below in table 6.

Table 6: Key contributions

<table>
<thead>
<tr>
<th>For Research</th>
<th>This paper contributes to the body of work dedicated to helping games researchers to better understand students’ games addiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Our conceptualization moves beyond the recent research model of Alzahrani et al. 2016.</td>
</tr>
<tr>
<td></td>
<td>Proposed research model does not restrict to any specific online games.</td>
</tr>
<tr>
<td></td>
<td>Explores the influence HCI, social interaction and TPB on continuance intention rather than behavioural intention.</td>
</tr>
<tr>
<td>For Practice</td>
<td>Proposed model can be a diagnostic tool for the educators or games stakeholders to assess students’ addiction level.</td>
</tr>
<tr>
<td></td>
<td>This paper provides understanding for stakeholders about the necessity of restricting the factors that influence their game addiction.</td>
</tr>
<tr>
<td></td>
<td>By highlighting TPB, HCI and social interaction, this research sheds light to the university, the first step to identifying factors that could affect students’ games addiction.</td>
</tr>
</tbody>
</table>

VII. LIMITATION AND FUTURE RESEARCH

As with all research, our findings are limited in several ways. First, our targeted sample was very small and they were undergraduate students from two universities. Result might differ in case of large sample size. Second, this is a cross sectional study, students’ intention and addiction might change over time, so a longitudinal study is required. Finally, our preliminary data was collected from the students of computer science or software engineering. In case of students of business administration, tourism or social sciences, these result could be different because of they rarely use technology. In future, we like to work with more samples and add “actual game playing time” variable instead of continuance intention.

VIII. CONCLUSION

With the integrated model of [6] and addiction model of [25], we propose a theory for students’ game addiction behavior. First, we tested the relationship between constructs of TPB and continuance intention. After that, we tested the proposed relationships of continuance intention with the dependent variable which is online games addiction in terms of life problems, substitute satisfaction, withdrawal and tolerance. We also measured the influence of HCI and social interaction with attitude towards game. Our proposed model was empirically tested and contributed to a nascent body of knowledge investigating students’ online game addiction behavior.

IX. REFERENCES


A Case Study on the Product Development of a New Beauty Bathing Soap Brand of ACI Limited

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Abstract - Product innovation and development has become the trend of the companies to move in the direction of globalization day by day which is driving the businesses towards achieving great dimensions. To stay in the long complex and competitive run, companies focus on applying their individual unique strategies on overcoming challenges and seize all possible opportunities to achieve targeted goal. Customer’s expectations and perceptions are the major component for any company’s growth and reputation. Thus, every company always focus on introducing innovative and creative products and service to its consumers and to maintain that every company has a structured and documented approach to new product development (NPD). This case study reflects the NPD process of till the product move towards its promotion; customer’s concept and expectations; and what key factors drives a marketer towards innovating and developing a new product and brand. This study contents all the necessary steps followed by ACI Limited. Regarding introducing the product, a detail market research was conducted in terms of Soap Industry, Soap Categories and Target Consumers. By following nomothetic approach, the study was done among 300 respondents (both male and female) from different socio-economic classes and different occupations by using a structured questionnaire to collect data primarily. An analysis was done based on the collected data and depending on the decision by the top management the development process took place. The case study also aims to draw attention towards the strengths and weaknesses of the NPD process undertaken by the company and the outcome provides valuable guideline regarding further NPD process.

Keyword - Product innovation, new product development, customer expectation, NPD process, Soap industry, case study.

I. INTRODUCTION

Product innovation and development is the key arena of any organization’s success. In order to grow and keep moving to achieve goals in today’s competitive market, marketers focus on the key drivers of the organization for long term success. To attain and keep consumers satisfy, marketers keep track on their needs, wants and desires thus product innovation and continuous development is always on process in every organization as the industry has more focused on new product development (NPD).

ACI limited is no longer behind from the application. It has its own unique strategic plan and know how to achieve it to be the market leader with a competitive advantage by competing with the competitors.

For endorsing bathing time pleasure and protection from germs ACI – Consumer Brands launched Savlon Antiseptic Bar Soap under Health-care category in 2003 and today in the market it has 5 different variants available for the consumers. In Bangladesh Savlon counted as the first of their kind to get presented in the personal care arena in Bangladesh. To carry out the legacy, ACI – Consumer Brands introduced Neem Original Soap by focusing on the growing trend of using natural soap among health conscious people, again under the Health-care category.

Moving forwards, ACI is willing to figure out the opportunities lied ahead in the market in terms of serving its potential consumers. To face the extensive competition, ACI along with its R&D department is working on the further opportunities so that it can meet its consumers’ needs and desires.

This paper provides a clear example of structure NPD process. The literature review discussed about NPD and few success factors along with consumer’s expectation. Later, the research methodology followed for the study and finally the findings which completely focus on consumers’ expectations and perception on using soap long with Front-end planning of NPD process followed by ACI Limited for this particular product.

II. LITERATURE REVIEW

NPD refers to the development of original products, product improvements, modifications and new brands. Development and innovation of a new product has become the key factor for an organization’s success. In recent years, marketers are facing critical challenges to stay competitive in the market due to increased competition [7].

NPD is considered as the key factor for three reason mentioned in of Bigliardi et. al. (2010) and they are: the growing international competition, the increase of demanding markets and the widely changing and diversifying technologies [17]. Competitive advantage has also become more consequential and NPD become the focus for every marketer thus it is classified into toe major groups: NDP process and NPD success [2].

There are number of studies have been done on product innovation and development. However, to establish 4ps (product, place, price and promotion) effectively in the market, marketers applies their different unique strategies of innovation thus the NPD process varies depending on project type and product or service.
The process is a set of steps that includes design, development and marketing of newly created or rebranded goods or services. The product development is done in terms of satisfying consumers’ demand and increase market share in the industry [11].

According to reference [12], to develop new products, an organization must understand its potential customers, market environment and way to deliver value to its targeted consumers. In process, it may construct new and set up systematic product development process for finding and growing products. Dr. Amue & Kenneth C., 2012 NPD success and failure can be identified through the steps characterizing a NPD project as it moves from Idea generation to the Product Commercialization [15].

It is found and suggested by researchers that product design or introduction through the NPD process steps in a designed framework is found more successful than those that are not developed within a framework. Even though the success rate is proven, many marketers often introduce new product or service on the basis of managers and employees subjective opinion regarding what product should it be and whether it will create an effect both in the market and organization and thus most of the cases market needs, feasibility, consumers’ expectation and perception are ignored. However, there always interactions occurs between marketers and consumers while a product or service is being produced, consumed and cocreated in NPD process. Active involvement of customers is highly important as they can help and add value in designing and development process of new product or service [6].

A new product or service development process is being segmented into two parts, Front-end planning and Implementation; which incorporates all the basic principles and steps used by organizations in different industries. Front-end defines what a service’s or product’s concept would be and whether it should be followed to Implementation segment.

The challenges are generally faced in the early stage of the process of development and also on sample development stage. Along with that other challenges lie in designing and implementation as requires resources like manpower, technology and other resources and facilities. Nonetheless, in the whole process there is a possibility of dropping the idea of NPD at every level of the process if it fails or none the alternatives work to meet the purpose of new product or service innovation or development. Thus there are some checkpoints which significantly identifies the critical stages in the process and specify the requirements which needs to meet before proceeding to next level [6].

This whole process step by step however in most of the cases pretty time consuming for many organizations and thus to speed up NDP process, many steps are being worked simultaneously for their product innovation and development, and this refers as Flexible Product Development (FPD). Apart from FPD, organizations’ nowadays also develop the process according to their projects and each differ from one another even if all fall into the basic NPD process.

In the article of reference [2] has shared some examples of successful NPD that may be intervallic in terms of different types of projects. For instance, Reference [10] categorized four kinds of variables that verify the performance of a NPD process and in turn, the success or failure, namely: (i) strategic factors, (ii) organizational factors, (iii) development process factors and (iv) market innovation factors.

Reference [13] identified the eight factors listed below:

- Up-front homework before proceeding further from the idea stage;
- Building in the voice of the customer;
- Seeking differentiated and superior products;
- Early and stable product definition before actual development;
- Strong market launch;
- Tough go/kill decision points;
- Organizing around cross-functional project teams;
- Building an international orientation into the NPD process.

A research by reference [5] reveals success factors within NPD process as follows:

- A strong market orientation;
- An in-depth understanding of user needs and wants;
- A unique superior product, a product with a high performance to cost ratio;
- A strong market launch, backed by significant resources devoted to the selling/promotion effort;
- An attractive market, a high need level, a large growing market, and uncompetitive market;
- Synergy in a number of areas, including technological and marketing;
- Top management support;
- Good internal and external communications.

Reference [1] proposed in their works three main dimensions of success: (i) meeting design goals, (ii) benefits to customers, and (iii) commercial success and future potential, while Millward and Lewis (2005), examining the performance of small and medium manufacturing firms, based their research on the consideration of the following factors affecting the
success of the NPD process: (i) undertaking up-front research into competitors and suppliers, and building in the voice of the customer; (ii) sharp, early product definition in order to target differentiated, superior products; (iii) an international market-focused orientation with effective internal and external communications; (iv) competent, truly cross-functional project teams guided by strong project leaders; (v) senior management support with unhindered access to financial, personnel and political resources; (vi) thoroughly planned and resourced development stages (including market launch) with pre-defined, tough “go” or “kill” critical-decision points in the process” [2].

The above example are referred to larger organizations however small companies have limited idea about NPD thus the practices is hardly noticeable as they follow the footpath of the well-established organizations [2].

NPD arises when the concern of consumer satisfaction come on marketers’ minds. Customer satisfaction is a judgment that a product or service feature, or the product or service itself, provides a pleasurable level of consumption related fulfillment [14]. This satisfaction is achieved when consumer’s expectation and perception are fulfilled, but if that does not happen a gap started to create between the expectation and perceptions. Customer expectation is rising as well as the gap and markers are facing huge challenges every day to meet those expectations and lessening the gap [16]. IBM Institute for Business Value, in reference [9] states that 76% consumers expect the organization will understand their individual needs and 68% consumers predict organizations will synchronize their experiences.

To determine consumer satisfaction, marketers often look into some factors, like product and service features; customer emotions; attributes for service success or failure; perception of equity or fairness; and other consumers, family member and coworkers [6]. These factors influence a consumer’s decision to purchase a product or service. To measure these factor marketers uses Service Quality Index (SQI) or SERVQUAL which is a multi-dimensional research tool. It was founded by Zeithmal, Parasuraman and Berry of reference [6] that contains the dimensions Reliability, Responsiveness, Assurance, Empathy and Tangibles [4]. Marketers’ follow-up with the factors to measure what product or service can be introduced in terms of satisfying consumers’ needs.

III. METHODOLOGY

Both primary and secondary data have been used for the purpose of the study. To collect the primary data, nomothetic approach has been used which was followed by a structured questionnaire that designed in light of the objective of the study. The questionnaire was distributed among the consumers of the fast moving consumer goods (FMCG). Online tool has been used to create the questionnaire; however the survey was done through In-person Interview.

Total 300 respondents (both male and female) were reached to complete the survey. The aim is to talk with the consumers directly and have a clear perception of their views. The method turns out as an effective way to collect necessary information from the respondents by gaining their trust and complete cooperation.

The sample group was selected randomly but according to convenience of communication and availability from the chosen locations. People from different socio economic class and different occupations were the focus of the study as they are the strong potential consumers for the FMCG industry.

In terms of secondary data collection, available resources like publications, journals, articles, research studies and related websites were used to have more insights regarding the study of the project.

III. FINDINGS & DISCUSSION

The survey was conducted to study about the target customers’ usage and purchase behavior in terms of bathing soap. Also, the focus was to understand and get clear insights about their perceptions about existing bathing soaps available in the market and what other possible features they expect in their lifestyle.

![Fig. 2: Gender diversity in the survey](image1)

![Fig. 3: Respondents from different age group](image2)

![Fig. 4: Respondents from different professions](image3)
As the survey was done among both male and female respondents from different age group and belong to different professions, some interesting findings were found. The purpose of breaking down the respondents into diverse groups is to collect different insights from individual respondents and as the interview was done through In-person interview different expectations and perceptions were found and collected on the usage of soap.

Even though the respondents are from different genders, our target group of consumers are Women. In Bangladesh, most of the home and business expenditures started from simple to luxury goods and services are mostly decided by them. While studying the target group of consumers, women have been segmented into three categories to get the bigger picture of the market as their purchasing behaviors based on the different lifestyles impact the market. They are: Home-maker, Working Women and Students.

At present, Bangladesh has a population of 163,421,223 from which 23% live in urban region and rest 77% are still live in the rural areas. This is one of the reason, marketers face difficulties while positioning their brands to their target audiences due to their living standards.

Our target consumers, women are consist of 51% of the total population from which 28% falls under 15 to 24 years old age and 25% under 25 to 34 years old age category. Furthermore, these women are also been segmented on the basis of their Socio-economic Class (SEC) where SEC A (Elite class group), SEC B (Upper-middle class group) and SEC C (Lower-middle class group) contains 4%, 10% and 8% respectively of the total women population [19].

![Fig. 5: Average responses on different features of soap](image)

Moving forward, one of the findings were, in the survey respondents were asked about the important features they want in their soap and rate them between 1 to 5 on the importance level – Strongly Negative, Negative, Neutral, Positive and Strongly Positive. Though cleansing is the foremost purpose of a soap, to identify the important features aside from cleansing, we narrowed down 13 features specifically which are generally found in beauty bathing soaps and popular among consumers’ usage. They are: Nourishment, Moisturizing, Freshness, Anti-bacterial, Fairness, Fragrance, Packaging, Color, Price, Brand Image, Quality Certification, Advertisement and Celebrity Endorsement. The reason behind selecting these features is that they are the most common features asked by the majority consumers. However, other features regarding the texture were hard and soft soap and different shapes found among few respondents where the number was not noteworthy by the feature is concerning for marketers.

From the collected information later it was converted into average where it is clearly observed that for consumers’ freshness is the most important and celebrity endorsement is the least attractive factor. Other features like quality certification, brand image, moisturizing, nourishment and anti-bacterial features also considered important on an average for the consumers.

The purpose of the study is to identify the scope of introducing new product in the market for the potential consumers by recognizing their expectations. Following up with the satisfaction determinants and dimension of SQI, ACI – Consumer Brands focuses on NPD which is new beauty bathing soap. The findings provide a clear picture regarding the demanding features and also some additional outputs that can be also well thought-out while developing the new product.

Along with that a market study was done to identify the other market leaders and what proportion of market shares the existing brands or products are occupying in the soap industry in Bangladesh. The significant market leaders are Kohinoor Chemical Company Limited (KCCL), Square Toiletries Ltd., Keya Cosmetics Ltd., Keya Cosmetics Ltd., Unilever Bangladesh, Reckitt Benckiser (RB) Bangladesh and others. These companies have their branded products in the market which are very popular among consumers and following that each has been holding significant proportion of the market share of the existing soap market.

![Fig. 6: Value Contribution in Soap Industry](image)

From the given diagram it can be said that, in Bangladesh LUX has covered 65% of the market share and then Sandalina is the second in line with 17% of the market share. However, other brands and imported soaps are not also lagging behind, they are trying to increase
market shares and maintain their brand positioning among consumers in the competitive market.

**Note:** In 2015, under toilet soap category Lux, Lifebuoy and Dettol considered as the top brands and Sandalina Sandal Soap ranked 10th in the local top brands in Bangladesh [3].

Moving forward to NPD process, for product development process, ACI limited has three departments through which a product is required to drive. These departments are – a) Product Development Department (PDD), b) Commercial Department (CD), and c) Marketing Department (MD). While developing a product, first the MD team comes up with a concept and let PDD team aware of it for formulation and then PDD team convey it to CD team who contact with the suppliers and distributors for material procurement.

ACI limited follows certain steps while developing a product and three of the departments play major roles repeatedly but with different purposes at every step of whole NPD process. Focusing on ACI Limited’s Front-end development segment, there are six steps which have been following by them to develop a particular new soap brand. They are discussed below.

**Step 1. Ingredients:** As already mentioned earlier, this project is about newly developed product: bathing soap. The product will be developed with a Unique Selling Proposition (USP) which an ingredient is called Shea-butter. Shea-butter is one of the most versatile natural beauty ingredients that provides different type of benefits for skin like skin smoothing, glowing and nourishing [18].

Current local market players in Bangladesh, uses ingredients like Sandal, Honey, Milk, Strawberry, Neem, Orchid, Almond, Mix Fruits, Saffron, Jasmine, Rose, Aloe-vera, Olive, Glycerin and many more. However, ACI Limited is planning to launch the Bathing Soap with Shea-butter which is a new product in the local market.

**Step 2. Fragrances:** Fragrance is one of the most important elements in soap as most of the consumer’s check the scent/smell while purchasing soap. ACI in this case will choose the fragrance that will give the consumers a sensation of scent of Shea-butter originally or similarly. Nevertheless, fragrance has many qualities so to set the while producing. To set a benchmark, ACI Limited will follow the hike of LUX as it is one of the most popular brands in terms of scents.

**Step 3. Shape and Size:** There are different soap shapes are available in the market. Many organizations also introducing creative shapes than the usual, it is especially been seen in the case of handmade soaps. Yet the classic shapes like oval, rectangle, square, pentagon and such like are popular among the consumers.

ACI Limited is planning to offer the Bathing soap in rectangular shape. As it’s the most commonly used among consumers. Because the shape is easy to hold a grip on the soap and consumers feel comfortable to use it. Different sizes of soap is available in the market and their SKUs (Stock Keeping Units) vary from brand to brand. In majority, SKUs are available in ranges started from 35g, 75g, 100g, 125g, 150g and 175g and in the middle there are other sizes that are available. ACI Consumer Brands is planning to launch the new Bathing soap in the SKU size of either 75g or 125g.

**Step 4. Color:** Color plays significant role in successful product design. It has the power to dominate other factors of a product development. To keep that in mind, ACI Consumer Brands will focus on choosing the soap’s color which will be exact look alike She-butter color. This is because ACI wants its consumers to experience with pleasure and sense of using Shea-butter while having a relaxed bath.

**Step 5. Packaging:** Developing an eye catching packaging for a product is one of the biggest challenges a marketer faces. As days passing by, marketers focus more on packaging thus consumers attract towards their products. There are varieties of soap packaging both traditional and creative available in the market.

Paper packaging is now much common among buyers. ACI limited is planning to offer its new product in paper packaging. It is not because the popularity or attractiveness but it provides consumers the look and feel pleasure while purchasing and also for the company it is very cost effective to produce.

**Quality Control Testing:** Quality control testing is being done at ACI Limited in two segments. They are: a) Stability Testing and b) Internal Testing. Stability testing is done once the factors are decided till step 4 in lab where the specialists check whether the product has any defect to fix such like skin side effects or negative reactions on skin. If the stability test got done successfully then it moves to the next step of sample testing called Internal testing which is done in the organization among the employers along with the sample packaging. As ACI Limited has employees in a huge quantity, they can get a good sample population to check again if the product has any more negative reactions/effects on skin or not. Once both the tests get done successfully only then ACI moves to the final stage of the product development.

**Step 6. Pricing:** ACI Limited with the production department has price understanding from the beginning of the idea generation till the end of the final stage of product development. Price has a major role in developing a product. Due to target budget, a marketer required to fix up and re-develop its product at every single stage of the development till it launched.

In this last stage, a product’s price is being finalized of course with the approval of the Executive Director of the Consumer Brands. For the bathing soap, similar process will be followed. The new product will launched for the mass market and thus price competitiveness may vary from other brands as ACI Consumer Brands is planning to focus and build their pricing strategy based on the products SKU size which may create competitive advantage for the brand and the organization.
To develop a product, company has to go through a long term process as the idea experiences with rejections and restart multiple times. However, ACI maintains the departments simultaneously rather than moving step by step, while a product is started to develop. This made the development process faster and easier.

IV. SUMMARY & FUTURE SCOPE OF RESEARCH

Different studies have been done to understand the NPD process, however it always varies from one organization to another. The paper is the attempt to highlight that how a new brand or product have been developed through NPD process by an organization and ensure consumer satisfaction.

Alike other researches, we also faced some limitations which may be improved for future scope of studies. The study has been done by using qualitative approach, which helps to identify the important factors or features of a soap desired by consumers mostly. This also can be converted into quantitative research by following up with different approaches used by individual organizations. The questionnaire could be also developed in a way that would have fulfilled the core objective of the study entirely and more information could have been gathered. In addition, though the research was quantitative, more respondents can be reached if online approach was chosen along.

This case study can be handy for other industries who produced or deal with FMCG. In terms of developing new product, this case study can help in understanding who are the potential consumers to seek information of different arena, depending on the product or service and also in developing questionnaire for new product or service development.

Product or service development is one the most important part of any organization. A product or service is developed in purpose of satisfying consumers’ needs and demands. Nevertheless, consumers’ taste changes and never ending expectations increases which make marketers to look for the loop holes in the market and once it is identified they approach to fulfill the demand in their best possible way.

ACKNOWLEDGMENT

Our heartiest gratitude goes to the esteemed Consumer Brands team of ACI Limited for giving us the opportunity to work with the team and thank you for their continuous support and inspiration throughout the time.

We would also like to express our gratitude to all the people who have helped to make the project a success and supported all the whole way. Last but not the least, we would like to show gratitude to all the survey respondents who have extended their kind cooperation and contributed in accomplishing this project.

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Factors Influencing Investment Decision and Portfolio Construction: A Dhaka Stock Exchange Perspective

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Abstract - Portfolio management is a concept of maximizing return with appropriate risk management. This paper is an empirical research on the factors influencing investment decision and portfolio construction in Dhaka Stock Exchange (DSE). Historical prices were collected from DSE over a period of last five years from December 2011 to December 2016. To construct a portfolio on the efficient frontier, a Top Down approach has been used. For that, the factors considered were: economic condition, Face Value, Cash Dividend %, Cash Dividend BDT, Stock Dividend %, Right Share Ratio %, Right Share Offer Price BDT, Share Split information, and Risk free Rate. Variance, covariance matrix and Solver applications will be applied to determine the different conditions prevailing in three separate scenarios of different combinations of short sale. The three scenarios are - 1. Minimum Risk. 2. Maximum Forecasted Return. 3. Tangent Portfolio = Maximum sharp Ratio. A fundamental analysis of asset valuation is also conducted in the paper. A total of 10 different stocks have been picked from diversified asset classes in order to reduce or minimize unsystematic risk. The suggestions for optimum weights have been estimated and calculated by running Solver under three different scenarios. Thus, a conclusive decision will be provided in regards to the factors influencing investment decision and portfolio construction at DSE.

Keywords - Construction, Efficient, Portfolio, DSE, Unsystematic Risk.

I. INTRODUCTION

Portfolio is designed to hedge investment risk by diversification. However, construction of portfolio has the core objective to maximize risk and minimize return. Most investment destinations can be seen with regards to consideration of required rate of return (RRR). The RRR is the gain that a portfolio generates in excess of initial capital investment and future cash flow generation.

II. LITERATURE REVIEW

Capital Asset Pricing Model is world’s most popular valuation which consist of risk free rate, market risk premium.

Market risk premium is one of the most important issues that, needs to be considered during calculation of Required Rate of Return. For January Market risk premium is 10.81% (Damodaran, 2017). The portfolio risk also includes the Consumer Price Index and GDP of Bangladesh where sensitivity of every single stock performance and their sensitivity with GDP is calculated. (Bangladesh Bureau of Statistics (BBS), August 2016).

Textile Industries established in 1993 have proved highest potential of earning which enhanced total size of Bangladesh GDP. (Raihan, 2014) At present, Lion share of foreign revenue is being earned from this sector. It is also clear that this sector has a high potential of opportunity in Bangladesh.

Unlike Textile industry, Pharmaceuticals industry has not established however have already met continuous growth of 10% to 15% (Kabir, 2016). Therefore, this industry has high potential to be flourish as well as at present the sector is underpriced as they have a huge growth opportunity. This industry have already became a self-depended industry in addition have an export oriented production trend which signs huge future cash inflow from earning foreign currency.

Telecommunication industry has already proved to be one of the most dominating industry in Bangladesh. They influence by network coverage and instant communication all over the country which influenced other industries to grow. However, this industry has low market potential in voice call; they have huge opportunity in data revenue growth. (Grameen Phone Ltd, 2016)

Power sector in Bangladesh has direct influence for other industries life support. As the industrial sectors of Bangladesh is booming this sector has a greatest opportunity to boom. However, shortage of natural
resource, limitation of planning as well as higher house hold demand is challenges in this sector. (Japan International Cooperation Agency (JICA), 2016)

III. RESEARCH METHODOLOGY

A. Efficient Portfolio:
The efficient portfolio is the set of optimal portfolio that offers the highest expected return for a sharp level of risk or the lowest risk for a given level of expected return. Portfolios that lie below the efficient frontier are sub-optimal, because they do not give enough return for the level of risk. Portfolios that cluster to the right of the efficient frontier are also sub-optimal, because they have a higher level of risk for the well-defined rate of return.

Harry Markowitz and others has introduced the efficient frontier model in 1952 within modern portfolio theory. So, it is the set of portfolios featuring this criteria that no other portfolio exists with a higher expected return but with the same risk/standard deviation of return. Hence, the efficient frontier is the best possible investment position of efficient portfolios that will give expected return.

B. Collection of data, Total Gain Calculation, Adjustment of Price data for stock split, cash and stock dividend and right issue, Preparation of Return Series:

Price data of 60 month from year 2012 to 2016 has been collected. For the purpose of total gain, I have analyze the prices of last 61 months that are given on the price sheet of excel. The variations in price also cash & stock dividend have been considered to decide the capital gain then the dividend yield has been calculated.

The formula for dividend yield: \[ \frac{\text{Cash Dividend}}{\text{Current Market Price}} \]

Along with this another formula is been used for calculating capital gain yield.

Issuance of right share, dividend declaration and stock split offer price.

The capital gain yield is calculated by dividend by the earlier month’s prices.

Preparation of Return Series:
The return series is being calculated with the following formulas:

Annualized Historical Portfolio Return = 1 + \[ \sum (R_{\text{Historical}} \times \text{Weight})^{12} - 1 \]
Annualized Forecasted Portfolio Return = 1 + \[ \sum (R_{\text{CAPM}} \times \text{Weight})^{12} - 1 \]
Adjusted Dividend = \[ (\text{Cash Dividend} \times \text{Face value}) \]
Dividend yield= \[ (\text{Dividend} \div \text{Price of the stock}) \]
Capital gain yield = \[ \frac{\text{Current Price} \times (1 + \text{Bonus Share}) \times (1 + \text{Right share}) \times \text{Stock Split}}{\text{Last month price} - \text{Right share offer price}} \]

\[
\text{Total return} = \frac{(\text{Capital gain yield} + \text{Dividend yield})}{\text{Last Month Price}}
\]

C. Preparing co-variance matrix:
The co-variance matrix is presented in Appendix 5. In this matrix, we calculated the covariance of the asset with other asset and with the asset itself. We have also calculated the portfolio excess return.

The formula for calculating Portfolio Historical return = (1+ (stock mean return * weight) ^12)-1, Portfolio forecasted return (1+ (CAPM * weight) ^12)-1, portfolio excess return is: Portfolio weight * market Premium. Sharp Ratio = CAPM/Portfolio standard Deviation.

D. Covariance Matrix:
The covariance matrix is calculated as a part of portfolio volatility calculation. It is calculated on the volatility of the 60 month returns of 10 selected stocks.

E. Required Rate of Return:

Required Rate of Return is calculated by the Capital Asset Pricing Model (CAPM). (Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk, 1964). CAPM is constructed by three (3) independent variable; Risk Free Rate, Market Systematic Risk and Market Risk Premium. Market
Risk Premium is considered from Damodaran’s Website. Beta Coefficient is being calculated from Return series. Bangladesh Bank’s 5 years Bond Rate is considered as Risk Free Rate.

F. Risk Free Rate Calculation

For this report, I have taken all the average of Bangladesh Bank 5 years Treasury Bond Rate. The rate that was given is the annualized yield basis. It is transferred into monthly yield by using the following formula:

Monthly yield = ((1+ annualized yield) ^ (1/12))-1

IV. SECTOR ANALYSIS

Portfolio is maintained by different sectors. If all the stocks are from the same sector and certainly that sector doesn’t perform well then the portfolio will be in bad condition. Therefore it is wise to pick different stocks from different industry to maintain a balance. Sector P/E and Sector Beta are being arranged to make a comparative analysis with particular sector and stock. These sectors have been selected because the sector growth rate is comparatively higher. The future growth rate is potential. Textile, pharmaceuticals, cement, power & fuel are having good growth rate like 55%, 11.37%, 17%, 4.8% respectively.

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</tbody>
</table>

V. COMPANY ANALYSIS (SELECTING COMPANY & ASSET CLASS):

These companies have been chosen to construct a portfolio based on various dimensions. Some of the facts are as follows:

- The companies are ‘A’ category company also have a regular AGM and declare 10% dividend in each year.
- The basic features of the company and expected future growth and potential
- Earning stability to ensure a minimum rate of return.
- Historically high growth rate and large capital gain.
- The price-earnings ratio as a measure of future growth prospect of the company.
- Major sectors of the market for a well-diversified portfolio.
- Risk of the stock and covariance in market and market capitalization.

A. Comparison along with Sector

The general analysis focuses on the overall performances in comparison to whole sector. An analysis of chosen companies and their earning and market capitalization is given below.

<table>
<thead>
<tr>
<th>Name of Stock</th>
<th>Sector</th>
<th>Company Earning % (Company earning/Sector Earning)</th>
<th>Company Market Cap % (Company Market Cap/Sector Market Cap)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaxo SmithKline Pharmaceuticals &amp; Chemicals</td>
<td>2.60%</td>
<td>3.94%</td>
<td></td>
</tr>
<tr>
<td>Square Pharma Pharmaceuticals &amp; Chemicals</td>
<td>39.27%</td>
<td>38.76%</td>
<td></td>
</tr>
<tr>
<td>GP Telecommunication</td>
<td>99.03%</td>
<td>95.55%</td>
<td></td>
</tr>
<tr>
<td>Apex Spinning Mills Limited Textile</td>
<td>0.37%</td>
<td>0.84%</td>
<td></td>
</tr>
<tr>
<td>Islami Bank Bangladesh Limited Bank</td>
<td>10.78%</td>
<td>11.84%</td>
<td></td>
</tr>
<tr>
<td>Lafarge Cement</td>
<td>43.54%</td>
<td>56.68%</td>
<td></td>
</tr>
<tr>
<td>Padma Oil Ltd. Fuel &amp; Power</td>
<td>8.56%</td>
<td>7.70%</td>
<td></td>
</tr>
<tr>
<td>Bata Shoe Company (Bangladesh) Limited Tannery Industries</td>
<td>61.61%</td>
<td>56.93%</td>
<td></td>
</tr>
<tr>
<td>RAK Ceramics (Bangladesh) Ltd Ceramics Sector</td>
<td>96.87%</td>
<td>85.39%</td>
<td></td>
</tr>
<tr>
<td>GQ Ball pen Miscellaneous</td>
<td>0.08%</td>
<td>0.68%</td>
<td></td>
</tr>
</tbody>
</table>
The analysis shows that, from Pharmaceutical Sector; GSK and Squire Pharma is selected as they have good earning potential than as a whole industry. Specially, Squire Pharma owns 38.76% market capitalization however earns 39.27% of the whole sector. The earning potential provides additional value to those particular stocks for invested decision. From Telecommunication Sector GP leads the sector having 95% of market share and earning of 99% of the whole sector.

B. Macro-Economic Risk Analysis

For selection of the company two macro-economic factors, Gross Domestic Product and Consumer Price Index, is considered to measure the sensitivity. The measurement is given bellow which may be used to consider the risk premium. However, as the sensitivity is closed to zero therefore, risk premium is not considered for calculating required rate of return which is the reason Capital Asset Pricing Model is considered as method of valuation.

<table>
<thead>
<tr>
<th>Company’s sensitivity with CPI and GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensitivity with CPI</strong></td>
</tr>
<tr>
<td>Glaxo SmithKline</td>
</tr>
<tr>
<td>Square Pharma</td>
</tr>
<tr>
<td>GP</td>
</tr>
<tr>
<td>Apex Spinning &amp; Knitting Mills Limited</td>
</tr>
<tr>
<td>Islami Bank Bangladesh Limited</td>
</tr>
<tr>
<td>Bata Shoe Company (Bangladesh) Limited</td>
</tr>
<tr>
<td>Padma Oil</td>
</tr>
<tr>
<td>Lafarge Surma Cement Ltd.</td>
</tr>
<tr>
<td>RAK Ceramics (Bangladesh) Ltd.</td>
</tr>
<tr>
<td>GQ Ball pen</td>
</tr>
</tbody>
</table>

VI. MINIMUM RISK PORTFOLIO CONSTRUCTION

A portfolio should concern about portfolio risk. We want to minimize the portfolio risk i.e. the standard deviation. Therefore we have used solver to optimize the portfolio.

<table>
<thead>
<tr>
<th>Stocks</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaxo SmithKline</td>
<td>0.271127568</td>
</tr>
<tr>
<td>Square Pharma</td>
<td>0.307816718</td>
</tr>
<tr>
<td>GP</td>
<td>0.01</td>
</tr>
<tr>
<td>Apex Spinning Mills Limited</td>
<td>0.097259534</td>
</tr>
<tr>
<td>Islami Bank Bangladesh Limited</td>
<td>0.181501719</td>
</tr>
<tr>
<td>Bata Shoe Company (Bangladesh) Limited</td>
<td>0.01</td>
</tr>
<tr>
<td>Padma Oil Ltd.</td>
<td>0.023291133</td>
</tr>
<tr>
<td>Lafarge</td>
<td>0.079003327</td>
</tr>
<tr>
<td>RAK Ceramics (Bangladesh) Ltd</td>
<td>0.01</td>
</tr>
<tr>
<td>GQ Ball pen</td>
<td>0.01</td>
</tr>
</tbody>
</table>

The solver suggest that the portfolio should have investment on maximum fund as given in the figure. It proposes the following data.

<table>
<thead>
<tr>
<th>Results of Minimum Return Portfolio Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio Historical Return</td>
</tr>
<tr>
<td>Forecasted Return (CAPM)</td>
</tr>
<tr>
<td>Portfolio Variance</td>
</tr>
<tr>
<td>Portfolio Standard deviation</td>
</tr>
<tr>
<td>Total Weight</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
</tr>
<tr>
<td>Portfolio Beta</td>
</tr>
<tr>
<td>Trenor Ratio</td>
</tr>
<tr>
<td>Average Risk Free Rate</td>
</tr>
<tr>
<td>Monthly Risk free Rate</td>
</tr>
</tbody>
</table>

VII. MAXIMUM RETURN PORTFOLIO CONSTRUCTION

Maximum return is being desired by every portfolio. Therefore, it should be taken into consideration. Solver suggests the following weights for each stock.

<table>
<thead>
<tr>
<th>Stocks</th>
<th>Weight</th>
</tr>
</thead>
</table>

328
It suggest that the portfolio should have investment on maximum fund in Glaxo Smithkline as given in the figure.

**TABLE 7**
Results of Maximum Return Portfolio

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio Historical Return</td>
<td>24.82%</td>
</tr>
<tr>
<td>Forecasted Return (CAPM)</td>
<td>57.74%</td>
</tr>
<tr>
<td>Portfolio Variance</td>
<td>0.85%</td>
</tr>
<tr>
<td>Portfolio Standard deviation</td>
<td>9.23%</td>
</tr>
<tr>
<td>Total Weight</td>
<td>1</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>5.601</td>
</tr>
<tr>
<td>Portfolio Beta</td>
<td>0.024</td>
</tr>
<tr>
<td>Trenor Ratio</td>
<td>21.253</td>
</tr>
<tr>
<td>Average Risk Free Rate</td>
<td>6.02%</td>
</tr>
<tr>
<td>Monthly Risk Free Rate</td>
<td>0.49%</td>
</tr>
</tbody>
</table>

**TABLE 8**
Tangent Portfolio Construction

<table>
<thead>
<tr>
<th>Stock</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaxo SmithKline</td>
<td>0.86</td>
</tr>
<tr>
<td>Square Pharma</td>
<td>0.01</td>
</tr>
<tr>
<td>GP</td>
<td>0.03</td>
</tr>
<tr>
<td>Apex Spinning Mills Limited</td>
<td>0.01</td>
</tr>
<tr>
<td>Islami Bank Bangladesh Limited</td>
<td>0.01</td>
</tr>
<tr>
<td>Bata Shoe Company (Bangladesh) Ltd</td>
<td>0.01</td>
</tr>
<tr>
<td>Padma Oil Ltd.</td>
<td>0.02</td>
</tr>
<tr>
<td>Lafarge</td>
<td>0.01</td>
</tr>
<tr>
<td>RAK Ceramics (Bangladesh) Ltd</td>
<td>0.03</td>
</tr>
<tr>
<td>GQ Ball pen</td>
<td>0.01</td>
</tr>
</tbody>
</table>

**TABLE 9**
Results of Tangent Portfolio Construction

It proposes the following data.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio Historical Return</td>
<td>23.32%</td>
</tr>
<tr>
<td>Forecasted Return (CAPM)</td>
<td>53.91%</td>
</tr>
<tr>
<td>Portfolio Variance</td>
<td>1.03%</td>
</tr>
<tr>
<td>Portfolio Standard deviation</td>
<td>10.17%</td>
</tr>
<tr>
<td>Total Weight</td>
<td>1</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>4.710</td>
</tr>
<tr>
<td>Portfolio Beta</td>
<td>0.032</td>
</tr>
<tr>
<td>Trenor Ratio</td>
<td>14.957</td>
</tr>
<tr>
<td>Average Risk Free Rate</td>
<td>6.02%</td>
</tr>
<tr>
<td>Monthly Risk Free Rate</td>
<td>0.49%</td>
</tr>
</tbody>
</table>

**IX. CONCLUSION**

Bangladeshi stock market is highly influential market. As we can see form the research that sensitivity with CPI and GDP was close to zero which means it does not effects the buyers. In DSE and CSE there are some reasons for sudden price hike like as high volume and trade, market rumor, foreign investment, institution’s high sell etc. The main objective is to construct a portfolio increasing returns and potentially reducing risk. As capital markets situation have developed and investing styles come in and out of fashion, it is likely that the total portfolio may be too heavily invested in a particular asset class, sector or even share which is present in every fund but to varying degrees. For constructing an efficient portfolio market research is important and buying right stock at the right time it will give high return.
REFERENCES


Testing Semi-Strong Form Market Efficiency: A Study on Selected Industries of Dhaka Stock Exchange

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Abstract – The purpose of this study is to find out evidence for semi-strong form of market efficiency in three selected industries of Dhaka Stock Exchange (DSE). The efficiency of these industries is tested by calculating mean abnormal returns during different dividend declaration periods in 2016, and employing the one sample t-test. The test returns with the evidence of semi-strong-form of Efficient Market Hypothesis (EMH) in the selected sectors, suggesting that investors cannot gain abnormal return based on publicly available dividend yield information as the stock prices adjust accordingly.

Keywords - Dividend, DSE, Semi-strong market

I. INTRODUCTION

The stock market of Bangladesh is tagged as volatile most of the time; therefore, the knowledge about efficiency of the stock market is critical to market participants dealing with the capital market. In the presence of an efficient capital market, it will not be possible for the market participants to go for abnormal profit as new information is quickly absorbed and understood by the market. The semi-strong-form of Efficient Market Hypothesis (EMH) suggests that stock prices fully reflect just not only all the available historical information, but also all publicly available information i.e. in this case, dividend yield information [1]. This paper attempts to measure if the semi-strong-form EMH is true for the capital market of Bangladesh, particularly for the Dhaka Stock Exchange (DSE).

Over the last few years, the Dhaka Stock Exchange (henceforth DSE) has gone through several structural modifications as well as observed some policy reforms. Therefore, a new analysis to support the semi-strong-form EMH in DSE is necessary. Besides, the DSE faced two big market crashes since it was initiated. The main reason was the inefficiency of the market. In order to avoid such drastic events in the future, knowledge of the current market efficiency in DSE is extremely significant.

Given the importance, this paper visits the semi-strong-form EMH through studying three selected industries listed in DSE: Cement, Tannery and Telecommunication; in the event of dividend declaration. As these three sectors are not related to each other, one sector’s efficiency may not also be present in another sector. Thus this study can provide some insight on the overall presence of semi-strong-form EMH currently in DSE, by using measures of abnormal return.

A. Objective

This paper attempts to find out whether semi-strong-form EMH is present in the three selected industries of Dhaka Stock Exchange (DSE), to gain insight into the current efficiency level of the overall capital market.

III. LITERATURE REVIEW

There have been many papers that were published on the test of efficient market hypothesis on different capital markets throughout the world; though it is true that studies on emerging markets are not much available and studies on Bangladesh would be not more than a few. In this part, basically some selected and relevant theories and findings will be presented to acknowledge the limitations of the literature and the justification of the present study.

The concept of stock market efficiency can be divided into two major categories: operational efficiency and information efficiency [2]. Stock market efficiency from the operational perspective tests the functionality of the market in terms of transaction cost, the liquidity of the market, and timeliness in the transaction [3]. The second field of stock market efficiency is information efficiency, through which this study is going to evaluate semi-strong-form of EMH. Testing the information efficiency of the stock market seeks to evaluate how the investors in the market respond to available information. The information efficiency of the stock market, therefore, implies that, it is impossible to earn abnormal returns as the market adjusts quickly to new information at all times [4].

To contradict this assumption, a different approach of testing market efficiency using insider trade data was taken [5]. On condition that they would report their trades to the Security Exchange Commission (SEC), insiders were allowed to trade in their own securities without trading on “material, non-public” information. It seemed logical that an insider’s close knowledge of the company would allow them to time their investments better than an outsider. This was indeed the case. However, it was found that a manipulation of such sort marks a serious anomaly in the studies [6]. It is true that the insiders can earn abnormal profits, but the outsiders resembling insider trades cannot earn abnormal returns; which invalidates the purpose of the studies overall. Largely, as the studies have concluded; outsiders cannot ultimately gain abnormal returns because there is a significant delay between
insiders’ trade and the time when the news of their trades becomes public.

In the context of Bangladesh, earlier when a test of weak form market efficiency was performed on Dhaka Stock Exchange, it reached the conclusion that the market was not weak form efficient [7]. Later a research, particularly on then DSE-20 index was done; and it concluded that the return behaviour of DSE-20 can be predicted [8]. However, another study took the daily price index of listed securities for the period of 1988 to 2000; and it rejected the null hypothesis of weak form market efficiency [9]. Another succeeding test also reached to the conclusion that DSE is not weak form efficient [10]. Subsequently, a separate study found some common stochastic trend in three South Asian markets- Dhaka Stock Exchange, Bombay Stock Exchange and Karachi Stock Exchange, by taking monthly data. The conclusion was that one market’s past return cannot improve the predictability of another [11]. Recently, a random walk test model on all the three DSE indices was performed and the results of these tests also confirmed that DSE is not weak form efficient [12].

Considering the available literature, the current study is going to evaluate the semi-strong-form EMH of DSE based on suitable recent data (i.e. 2016) as multiple tests regarding weak form efficiency have already been conducted. To avoid thin trading bias in the study, the test is going to be conducted on the previously mentioned three sectors which have fifteen individual listed securities.

IV. DATA & METHODOLOGY

A. Data

This study is based on analysis of publicly available secondary data during a certain interval of time. As the selected industries are Cement, Tannery and Telecommunication; share price information of these three industries only are used for the analysis. The observation period ranges from 30 trading days before and after the event of dividend declaration in the year of 2016; with exclusion of the companies which did not declare any dividend. The overall Market Index in those particular periods has also been gathered. For the purpose of this study, all these price related information along with dividend declaration dates have been collected from the DSE and its website.

B. Hypotheses

The intention of this study is to perform a critical analysis of the three selected sectors during the periods of dividend disclosure to test semi-strong-form efficiency in DSE. The null hypothesis for all the periods and industries states that it is not possible for investors to gain abnormal return based on dividend yield information whereas the alternative hypothesis indicates the opposite.

Based on this, the following hypotheses have been developed:

- \( H_0: \) Mean abnormal returns are equal to zero
- \( H_1: \) Mean abnormal returns are not equal to zero

C. Methodology

To test the hypotheses, the capital yield of a particular stock as well as the overall market return during the 30 trading days interval before and after the declaration of dividend are calculated first. In the event of multiple dividend declaration of the same company within the year 2016, all the dividend disclosure dates have been considered whereas the companies without any dividend declaration have not been taken into consideration of this study. Finally, abnormal returns during the dividend declaration period are calculated using the following formula:

\[ \text{Abnormal Return} = \text{Stock Return} - \text{Market Return} \]

Using the abnormal returns, a one sample t-test with a confidence interval of 95% (t-value is 1.96) is conducted to test the null hypothesis mentioned above. If the calculated t-value is within the range of -1.96 and +1.96 as well as the P-value is greater than the 5% level of significance, it can be definitely inferred that the null hypothesis is not rejected.

V. ANALYSIS & RESULTS

A. Cement Industry

A total of seven cement companies are currently listed in DSE. Among them, Aramit Cement (ARAMITCEM) declared dividend for two times in May and October 2016, Confidence Cement (CONFIDCEM) in May and November 2016, Heidelberg Cement Bangladesh (HEIDELBCEM) in February 2016, Lafarge Surma Cement Ltd. (LAFSURCEML) in March and October 2016, Meghna Cement Mills (MEGHNACEM) in November 2016, M.I. Cement Factory (MICEMENT) in October 2016 and lastly, Premier Cement Mills (PREMIERCEM) declared their dividend in October 2016; making the total numbers of events for the cement industry 10. A summary of t-test results for abnormal stock returns of all the 10 events are presented in Table I.

<table>
<thead>
<tr>
<th>Company Code</th>
<th>t-value</th>
<th>P-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAMITCEM</td>
<td>-1.96&lt;0.510&lt;1.96</td>
<td>0.612</td>
<td>Do not Reject Null Hypothesis</td>
</tr>
<tr>
<td></td>
<td>-1.96&lt;0.370&lt;1.96</td>
<td>0.713</td>
<td>Same as above</td>
</tr>
<tr>
<td>CONFIDCEM</td>
<td>-1.96&lt;0.064&lt;1.96</td>
<td>0.950</td>
<td>Do not Reject Null Hypothesis</td>
</tr>
<tr>
<td></td>
<td>-1.96&lt;0.798&lt;1.96</td>
<td>0.428</td>
<td>Same as above</td>
</tr>
</tbody>
</table>


From the table above, it can be seen that the calculated T-values were within the acceptable range of 95% confidence interval. That indicates that the mean abnormal returns were zero. Also, in every case, the P-value was greater than 5% level of significance; reflecting the higher probability of the occurrence of type I error if null hypothesis is rejected. Hence, it is assumed that the stock prices adjusted accordingly and the dividend declaration did not have much impact on stock prices of the listed cement companies in 2016. This fact supports the semi-strong-form efficient market hypothesis in the cement industry of DSE.

**B. Tannery Industry**

There are a total of 6 listed companies in the tannery sector of DSE; among which Legacy Footwear (LEGACYFOOT) and Samata Leather Complex (SAMATALETH) did not declare any dividend in the year 2016 whereas Fortune Shoes Limited (FORTUNE) debuted their trading in late 2016. However, the total dividend declaring events in the tannery industry in 2016 were 3; Apex Footwear (APEXFOOT) in March 2016, Apex Tannery Limited (APEXTANTRY) in August 2016 and Bata Shoe Company (BATASHOE) in November 2016. The t-test results for abnormal stock returns of all the mentioned 3 events are summarized in Table II below.

**Table II: Results of T-test for Tannery Industry**

<table>
<thead>
<tr>
<th>Company Code</th>
<th>T-value</th>
<th>P-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>APEXFOOT</td>
<td>-1.96&lt;0.239&lt;1.96</td>
<td>0.812</td>
<td>Do not Reject Null Hypothesis</td>
</tr>
<tr>
<td>APEXTANTRY</td>
<td>-1.96&lt;0.134&lt;1.96</td>
<td>0.893</td>
<td>Do not Reject Null Hypothesis</td>
</tr>
<tr>
<td>BATASHOE</td>
<td>-3.295&lt;1.96</td>
<td>0.002</td>
<td>Reject Null Hypothesis</td>
</tr>
</tbody>
</table>

From the analysis, a discrepancy from the other dividend declars is evident in Bata Shoe, which ultimately leads to the rejection of null hypothesis in this case. The mean abnormal returns for Bata Shoe in the specified period were not zero. However, the majority of the listed companies of the industry show acceptable range of both T and P-values to not reject the null hypothesis. This means that the returns before and after dividend declaration are not statistically significant and the investors cannot earn abnormal profit by publicly available dividend yield information. This suggests that semi-strong-form of EMH is also existent in the tannery industry of DSE.

**C. Telecommunication Industry**

The telecommunication sector of DSE has only 2 listed companies: Bangladesh Submarine Cable Company Limited (BSCCL) and Grameenphone (GP). In 2016, both of them declared dividends; BSCCL in August 2016 and GP in February and July 2016. These 3 events t-test results for abnormal returns are presented in Table III.

**Table III: Results of T-test for Telecommunication Industry**

<table>
<thead>
<tr>
<th>Company Code</th>
<th>T-value</th>
<th>P-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSCCL</td>
<td>-1.96&lt;0.239&lt;1.96</td>
<td>0.206</td>
<td>Do not Reject Null Hypothesis</td>
</tr>
<tr>
<td>GP</td>
<td>-1.96&lt;0.647&lt;1.96</td>
<td>0.520</td>
<td>Do not Reject Null Hypothesis</td>
</tr>
<tr>
<td></td>
<td>-1.96&lt;0.861&lt;1.96</td>
<td>0.393</td>
<td>Same as above</td>
</tr>
</tbody>
</table>

In all the three instances above, the calculated T-values were within the 95% confidence interval range as well as the P-values were within the 5% significance level range. This reflects the higher probability of type I error occurrence if the null hypothesis is rejected. Therefore, it is understood that the mean of the abnormal returns were statistically insignificant in this case and the stock prices adjusted accordingly after the disclosure of dividend. The results, therefore, are well in coherence with the previous findings of this study and support the presence of semi-strong-form of EMH in the telecommunication industry of DSE.

**D. Summary Findings**

From the independent statistical tests conducted in this study, 15 out of total 16 events revealed results toward not rejecting the null hypothesis i.e. abnormal returns are not being made in effect of dividend disclosure. The selected three industries of DSE, therefore, show consistency with semi-strong-form efficient market hypothesis.

**VI. RECOMMENDATIONS**

Here, the stock prices of the selected industries are found to be in accordance with available public information, which means the small investors would not be deprived in this scenario. However, in the capital market of Bangladesh, some investors still make
abnormal profits through market manipulation and insider information. Therefore, it is essential that the investors are being protected from such sharp brokerage practices of insiders trading and excessive speculation by proper implementation of laws against such practices. Besides, many listed companies’ boards consist of their own family members; and these boards are more likely to give greater weight and pave insider trading opportunities to the interest of select groups. The quantity, quality, credibility and promptness of disclosed information are thus needed to be improved through proper offline and online publication of regular detailed financial and non-financial reports besides the usual annual reports. The payment and settlement system of stock trade are also needed to be monitored so that no one can trade beyond their net wealth. This will reduce the speculative and liquidity motivated trade of the small investors and shield them from market manipulation of the larger players. On the other hand, the investors should also assess the risk-return profile of their investment as well as the liquidity and safety aspects. They need to make themselves educated properly to understand the market so that they are not misled by rumors, hot tips and market momentum.

VII. CONCLUSION

The main objective of the study was to examine the semi-strong-form of market efficiency of three selected industries of DSE and; in the process, to gain insight into the overall efficiency level of the capital market. The paper applied one sample t-test to determine mean abnormal returns in different cases of dividend declaration and reached to the conclusion that semi-strong-form of EMH is present in these unrelated sectors of DSE.

The findings of this research are very interesting and open scope for further studies. Numerous studies in the past were done to test the weak form efficiency of EMH in DSE whereas the result found in this study supports presence of semi-strong-form efficiency in at least three sectors of DSE. Thinly traded markets are usually more prone to inefficiency but in this case the result contradicts with it. The results of this research should be interpreted very cautiously. Further studies consisting of more price-determinant events and longer periods are needed to be conducted to determine the overall efficiency level of the capital market and to initiate measures to ensure market efficiency.

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Abstract: Born in 1971, Bangladesh witnessed a phenomenal growth in banking industry since the liberalization policy was introduced in 1980s. Before the liberalization policy, there were only four domestic banks (Sonali Bank, Pubali Bank, Rupali Bank, and Janata Bank) in Bangladesh and they were nationalized. There were only three foreign banks. However, there was no private bank. As a result, there was no competition in the banking industry of Bangladesh. The banking market was highly concentrated and dominated by four nationalized banks. The profitability of banks was highly unsatisfactory due to risk and competition. Still banking industries are facing those types of risk and competition for generating profit. As much as possible we are trying to find out sort of risk and competition of bank in Bangladesh. Bank lending rates were taken as a proxy for interest rate while Return on Assets (ROA) and Return on equity (ROE) were taken as a profitability of the banks. The failure model was used in the study to witness the effects of interest rate on profitability. The results show that the interest rate has more effects on both ROA and ROE in private banks as compared to the public sector banks. We introduce a new perspective to systematically investigate the cause-and-effect relationships among competition, innovation, risk-taking, and profitability in the Bangladesh banking industry. Our hypothesis are tested by the structural equation modeling (SEM), and the empirical results show that (i) risk-taking is positively related to profitability; (ii) innovation positively affects both risk-taking and profitability, and the effect of innovation on profitability works both directly and indirectly; (iii) competition negatively affects risk-taking but positively affects both innovation and profitability, and the effects of competition on risk-taking and profitability work both directly and indirectly; (iv) there is a cascading relationship among market competition and bank innovation, risk-taking, and profitability.

Key words: Banks, Risk analysis, competition, profitability, hypothesis.

1.1 INTRODUCTION

This Research paper try to assess bank performance, competition and their relationship empirically by using banking sector data and individual bank data from Bangladesh. That why we take some on the bank in Bangladesh to find out the Return on assets and data envelopment analysis grounded bank efficiency are used as bank performance measures, whereas eight structural measures are employed for assessing competition followed by the adoption of regression analysis for identifying its impact. The findings research an improvement of bank performance with a few fluctuations in between the sample periods under study. On the other hand, the level of competition has been consistently increasing in the banking sector, as pointed out by all structural measures and the profitability is ups and down year by year. The regression result shows evidence of a negative relationship between competition and bank performance. It is required to revisit the structural changes of the banking sector. In particular, the regulatory authorities need to ensure necessary incentives for banks, particularly for private banks, to improve their performance in terms of profitability and efficiency. Concerning the banking sector of Bangladesh, the objective of accelerating competition and banking sector performance has been accomplished by the government by adopting different policies including introduction of private sector banks in 1982, initiation of denationalizing state-owned banks in 1983, and declaration of Financial Sector Reform Program (FSRP) for deregulating the banking sector in 1989 by introducing relaxation of reserve requirements, withdrawal of state directed credit policy, development of legal infrastructure, adoption of international standard for loan screening and monitoring, and liberalization of deposit and lending rates (Debnath, 2004). The policy initiative undertaken by the government during 2000 for merging or closing down of unproductive branches of state-owned banks played significant role in creating level playing ground for the private and foreign banks that emerged into the market during the liberalization framework.
2 PROBLEM STATEMENTS:

Identifying the impact of risk and competition among 3 banks in Bangladesh to find out their risk analysis competition and profitability on based on the Banking financial year.

- **Aim**
  The aim of the research is to find out the bank’s profitability by executing impact of risk and competition among the Banks of Bangladesh.

- **Objectives**
  The objective of the research is identifying and analyzing the impact of risk with the competition among the banks and to find out the profitability of those banks in Bangladesh.

- **Individual objective**
  To identify the risk of Banks
  To find out the impact of risk of the banks
  To execute the competition among the banks
  To find out the bank’s profitability among the bank in Bangladesh.

3. Definition of terms

Impact of risk: Once you have identified the risks to your financial institution, you need to assess the possible impact of those risks. You need to separate minor risks that may be acceptable from major risks that must be managed immediately.

Competition of Bank: The global financial crisis reignited the interest of policy makers and academics in bank competition and the role of the state in competition policies (that is, policies and laws that affect the extent to which banks compete). Some believe that increases in competition and financial innovation in markets such as subprime lending contributed to the financial turmoil. Others worry that the crisis and government support of the largest banks increased banking concentration, reducing competition and access to finance, and potentially contributing to future instability as a result of moral hazard problems associated with too-big-to-fail institutions

Bank Profitability: Like all businesses, banks profit by earning more money than what they pay in expenses. The major portion of a bank’s profit comes from the fees that it charges for its services and the interest that it earns on its assets. Its major expense is the interest paid on its liabilities. The major assets of a bank are its loans to individuals, businesses, and other organizations and the securities that it holds, while its major liabilities are its deposits and the money that it borrows, either from other banks or by selling commercial paper in the money market.

4. Review of the related literature:

The banking literature remains divided over the conflicts arising out of the SCP paradigm, also known as the structure performance paradigm, and the ES paradigm. The SCP hypothesis, which, according to Park (2009, p.654) and Seelanatha (2010, p.21), dates back to Mason (1939), is the oldest and traditional hypothesis. It states that the performance of banks largely depends upon the structure of the market such as the number of banks and the market shares of banks; and the profitability of banks decreases with the increase of competition. In other words, the higher the concentration ratio, the higher will be the profitability of banks, reflecting a positive association between market share of a bank and its performance.

In Bangladesh, many scholars argue in the opposite direction to support the competitive market structure. Calem and Carlino (1991) point out that a market with higher concentration is more vulnerable to crisis; and thereby is less competent and equitable. Berger et al. (2004) mention that government intention to restrict competition through foreign bank entry regulation and state ownership of banks generates adverse effect and ultimate poor economic efficiency in a country. Furthermore, it is highly likely that banks in a concentrated atmosphere can engage in non-competitive deeds to generate higher revenue with lower benefits for consumers (Abbasogluet al., 2007; Wong et al., 2008); thus, produce monopoly and corresponding inefficiencies (Suzuki et al., 2008). Importantly, arguments highlighting the possible benefits of competitive market actually emerge from the application of the standard industrial organization economics to the financial sector, particularly the banking sector. Moreover, these arguments show their inclination towards the alternative hypothesis of the SCP, that is, the ES which states that enhanced performance of banks leads to higher market share which in turn results into market concentration associated with superior efficiency. That is, bank-specific efficiency difference in a particular market leads to uneven proportion of market size and corresponding high intensity of concentration. In fact, this hypothesis does not consider market concentration as a random event; instead, it is the result of greater efficiency of the dominant banks (Smirlock, 1985). This is possible because a bank with either superior management or production technology in a
competitive market can lower cost to increase profit and to attain higher market share (Berger, 1995). On the other hand, a bank with higher efficiency than its competitors can also maximise profit either by maintaining the current market size and pricing policies or by accommodating size expansion and price reduction strategies (Lloyd-Williams et al., 1994, p.437). It means that banks under such a market mechanism strive for achieving dual objectives of maximizing profits and minimizing costs and prices, and as a consequence, the highest amount of credit will be allocated (Northcott, 2004). Therefore, according to the ES hypothesis, profitability of banks greatly depends upon the efficiency rather than the market structure of the banking sector. In this way, the emergence of the ES not only challenges the traditional SCP hypothesis but also puts forward an alternative way of analysing the different dynamics of the banking sector. Studies of Demsetz (1973), Brozen (1982), Samad (2008) and Seelanatha (2010) support the ES hypothesis.

Therefore, based on the literature reviewed above, it can be argued that the nature of the relationship between competition and bank performance is rather ambiguous. According to Wanniarachchige and Suzuki (2010), the relationship is country-specific in nature and as such they suggest to conduct more studies at country level. Focusing on the findings of earlier studies, concentrating on the banking sector of Bangladesh such as Samad (2008), the impact of competition on bank performance in the form of profitability and efficiency cannot be generalized since the results derived from pool and annual data portray different results. Because of this anomaly, he urges for further studies to explore the impact of changing market structure on bank performance.

With regard to the development of models for assessing the impact of competition, previous studies concentrating on developing countries adopt bank-specific, industry/country-specific, or a combination of both types of variables. For instance, Wanniarachchige and Suzuki (2010) use industry/country-specific variables only, whereas Ataullah and Le (2006) and Samad (2008) use both variables for their studies. This study also adopts similar approaches for selecting the necessary variables in the regression

4.1 Competition and Profitability

The structure-conduct-performance (SCP) hypothesis from traditional industrial organization theory states that a firm’s performance is determined by its business strategy which is influenced by industry structure [3]. Furthermore, the SCP hypothesis posits that because of collusion and domination, firms earn higher profits in a concentrated market than in a competitive market. In other words, there is a positive relationship between market concentration and firm profitability [4]. With respect to the banking industry, existing literature provides lots of empirical supports for the SCP hypothesis. Bhatti and Hussain test the SCP hypothesis in the context of Pakistan’s banking industry and their result supports the SCP hypothesis [5]. Kamau and Were investigate the driving factors of bank performance in Kenya during 1997–2011 and find that the source of superior performance is structure/collusive power [6]. Uddin and Suzuki empirically assess a negative relationship between competition and profitability by using banking sector data from Bangladesh [7]. Tan and Floors investigate the relationship among market concentration, profitability, and risk-taking in the Chinese banking industry during the period from 2003 to 2009 and testify a negative relationship between competition and profitability [8].

4.2 Competition and Risk-Taking

A standard view of banking supervision is that competition is detrimental to bank stability. On the one hand, competition erodes a bank’s franchise value which is equivalent to the cost of bankruptcy and encourages bank to pursue risky policies, such as lowering capital levels and softening the terms of loans, which increase nonperforming loans and result in credit risk [9]. On the other hand, a bank will select safe policies, which contribute to the stability of the entire banking system, to protect its franchise value when the market competition is restrained [10]. Another view argues that banks’ policies influence the behavior of borrowers, which in turn change bank risk-taking [11]. Specifically, restrained competition results in a high borrowing cost (i.e., interest rates being charged on loans), which possibly raise the credit risk of borrowers due to moral hazard issues [12]. For example, because of the information asymmetries in the credit business, borrowers can conceal their credit condition and payback ability, while banks are always at a disadvantage with respect to acquiring sufficient borrower information. Martinez-Miera and Repullo propose a model to illustrate the effect of competition on bank risk-taking and find that two effects working in opposite directions generate an unclear net effect on risk-taking and that the intensities of these two effects vary with the level of competition [13].
4.3 Competition and Innovation

The relationship between market competition and innovation is a primary focus of industrial organization theory. Schumpeter first states that market competition discourages innovation by diminishing monopoly rents and large firms are able to afford more capital for innovation activities [14]. On the contrary, some researchers assert that the Schumpeter hypothesis is not comprehensive and that there are more incentive factors in a competitive market than in a monopoly market [15]. Increased competition encourages innovation activities because firms in a competitive market attempt to escape competition and obtain monopoly profits [16]. Against al. propose a theoretical model and confirm that two effects vary with competition and produce opposing results; thus the net effect of competition on innovation is unclear [17].

4.4 Innovation and Profitability

The efficiency hypothesis (EH) posits that the bank profitability depends on the bank’s degree of efficiency, whereas the bank’s degree of efficiency is affected by its financial innovation activities [18]. That is to say, innovation improves bank technology, which then increases bank efficiency and enhances bank profitability. Moreover, Allen et al. find that improving a bank’s technology enhances its quality of assets [19]. In addition, financial innovation generates new forms of bank products, such as Internet banking, mobile banking, telephone banking, ATMs, and POS networks, which provide relative high returns and low cost advantages that enhance bank profitability [20–22].

4.5 Innovation and Risk-Taking

Chen states that a bank’s innovation activities improve the efficiency of the screening and monitoring borrowers and eventually reduce the quantity of nonperforming loans and the bank’s credit risk [23]. Schaeck and Cihák propose that great efficiency will translate into reduced likelihood of bank default and enhanced stability [24]. However, Norden et al. claim that whether innovation is beneficial or not depends on why and how it is used by banks [25]. If innovation is employed to improve risk measurement and control, such as the screening and monitoring borrowers, it contributes to bank stability. However, if the innovation supported by banks is mainly for the purpose of achieving high profits, it encourages banks’ risk-taking behaviors and leads to bank failure. Hou et al. find a positive relationship between technical efficiency and risk-taking behaviors of Chinese commercial banks [26].

2.6. Risk-Taking and Profitability

The capital asset pricing model (CAPM) provides the first coherent framework for interpreting how the risk of an investment affects its expected return and depicts that the expected return is calculated by adding the risk free interest rate to the product of the investment’s beta and the expected market risk premium [27]. The investment’s beta is always positive; thus there is a positive relationship between market risk and expected return. A commercial bank must manage its assets through investments, and, in this sense, the bank can be perceived as an investor. Given that the risk appetites of bank managers determine the level of bank risk-taking, if most of a bank’s managers are risk seekers, they will be willing to make risky decisions to obtain high returns. In other words, there is a positive relationship between bank risk-taking and profitability [28].

5. METHODOLOGY

5.1 Research Design:

The methodology adopted involved the conduct of interviews, preparation of questionnaires and their administration. The research used mix methods, incorporating both qualitative and quantitative data gathering methods. Qualitative research because it is based on holistic approach to science and is explained in terms of variables and units of analysis. Both explanatory research and descriptive research were used in accomplishing the objectives of the study. The explanatory research was again used to gain insight into the impact Risk and profitability in banking sector of Bangladesh.

5.2 Sources of Data:

In order to prepare a comprehensive and authentic research the author used both primary and secondary sources of data.

- Primary Sources of Data Although the project is primarily based on primary sources of information, the only such source of
information for this research are gathered from the bank.

- Secondary Sources of Data The secondary sources of information include the materials like different publication, report, and articles given to the author to understand different bank in Bangladesh.

5.3 Secondary Data:

Secondary data is the data that have been already collected by and readily available from other sources. Such data are cheaper and more quickly obtainable than the primary data and also may be available when primary data cannot be obtained at all. This data refers to data that has been collected previously for the purpose of other studies in the past by researchers. Evaluation of secondary data is more about critically analyzing work which has already been carried out and finding the scope of more research opportunities. To ensure validity and reliability of the data, proper scrutiny has been carried out over a period of time. Critical review of literature in chapter two has been conducted through analysis of peer-reviewed articles from various sources. All analysis given previously includes secondary data which has been accessed through internet sources and other databases from different websites. If the time or hassle of collecting the own data is too much, or the data collection has already been done, secondary data may be more appropriate for any research. This type of data typically comes from other studies done by other institutions or organizations. In this research report, the secondary sources have been used like the internet websites, journals, and other research reports to collect the required data.

5.4 Primary Data:

Primary data process of the research can either be done by the researcher or can be outsourced to the person or organization which specializes in this type of survey. Although this type of exercise may be lengthy and costly for gathering the information, the researcher has tried to collect and use this data. This data research is not carried out frequently and organizations generally depend of secondary sources for information. In order to go for this process, the researcher has to take care of everything, starting from designing questionnaires, collecting replies from respondents and then interpreting it depending on requirements. This research is carried out after getting some knowledge from the secondary sources (e.g. Govt. surveys or surveys by other companies). One can decide to go for primary data research if he/she feels that the data available from secondary sources is not fulfilling the requirements. Primary market research can be quantitative or qualitative in nature.

5.5 Data Collection Methods:

In this research, the approaches are mainly categorized into two distinct methods, namely qualitative and quantitative approaches. Both methods are described elaborately in the following section and selected method and approach chosen for the dissertation is subsequently given. Qualitative and quantitative methods of data collection employ different techniques which characterize the differences between the two. Qualitative research report’s data collection concerns more of the attitudes, behavior and the responses from the selected population. On the other hand, quantitative method of data collection is more aggressive where the researcher is required to employ resources for gathering data through different methods of surveys, interviews etc.

This was done with the view to ensuring among other things that copies of the questionnaire reach all the respondents, that adequate and effective report could be established to encourage the respondents to accept and answer the questionnaire faithfully and that all copies of the questionnaire are appropriately answered and retrieved from all the respondents. The researcher did the administration of the questionnaires to customers.
<table>
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<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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| Qualitative research | 1. Flexibility.  
2. Sharing of experiences and Feelings of participants.  
3. Sample size is smaller.  
More explanatory and rich in information.  
4. Participants are free to express their feelings. | 1. Lack of validity.  
2. Subjective and impressionistic.  
4. Dependent on researchers input. |
| Quantitative research | 1. Data is scientific.  
2. Generalized.  
3. Clear presentation of the data collected.  
4. Population is relatively large.  
2. Time Consuming.  
3. Often carried out in an unnatural environment.  
4. Structural bias and false representation of the research questions.  
5. Hypothesis Development:  
Null hypothesis (H0): Competition has not a negative relationship with bank profitability in the Bangladesh banking industry.  
Alternative Hypothesis (Ha): Competition has a negative relationship with bank profitability in the Bangladesh banking industry.  
Null hypothesis (H0): Competition has not a negative relationship with bank risk-taking in the Bangladesh banking industry.  
Alternative Hypothesis (Ha): Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry.  
Null Hypothesis (Ho): Risk-taking has not a positive relationship with bank profitability in the Bangladesh banking industry.  
Alternative Hypothesis (Ha): Risk-taking has a positive relationship with bank profitability in the Bangladesh banking industry. |
Null Hypothesis (Ho): There is not a cascading relationship among market competition and bank innovation, risk-taking, profitability.

Alternative Hypothesis (Ha): There is a cascading relationship among market competition and bank innovation, risk-taking, profitability.

6. Scope of the Study:

This study focuses on some problems like financial, choice, demand and other. That is created by the lacking of the companies such as, design, models etc. The objective of this research is to analyze and identify the customer needs, choices demands and ability to purchases. Besides, the scope of the study is limited for the further research. The limitations of the study are discussed in chapter three of this research paper.

7. Overview of the banking sector of Bangladesh

In spite of the existence of different forms of financial institutions and intermediation, the banking sector dominates the process of channelization of funds in Bangladesh. The size of banking sector assets relative to Gross Domestic Product (GDP) was 69.76% in 2010 compared to the size of market capitalization of the stock market relative to GDP of 32.79% and the size of non-banking sector assets relative to GDP of 5.98% (Bangladesh Bank, 2011; Uddin and Gupta, 2012). By the end of 2011, the banking sector composed of 47 scheduled banks out of which four were state-owned banks, four were state-owned development financial institutions, 30 were private banks, and nine were foreign banks (Bangladesh Bank, 2011). Private banks are subdivided into denationalized banks, Islamic banks and non-Islamic banks, and there were two denationalized banks, seven full-fledged Islamic banks and 21 non-Islamic banks. However, out of the 21 non-Islamic banks, 16 maintained separate Islamic banking windows for their customers leading to a total of 23 banks that engaged in the Islamic banking activities either partly or fully. The adoption of financial deregulation policies for accelerating the number of banks and branches under private and foreign ownerships results into a shift of market share from state-owned scheduled banks to private and foreign banks. For instance, in 1976, state-owned scheduled banks controlled 94.5% of deposits whereas by the end of 2011 the share became 32.1%. The share of private and foreign banks, in contrast, has been in an increasing trend. To be specific, the share of private banks has increased from 3.6% in 1983 to 61.6% in 2011 and the share of foreign banks has increased by 14.5% during 1976–2011. Similar changes can also be observed in the credit market. The permission issued by Bangladesh Bank for the inception of nine new private banks in 2012 accelerates the share of private banks further in future.
Interpretation: A credit risk is the risk of default on a debt that may arise from a borrower failing to make required payments. Loan loss provision is an expense set aside as an allowance for uncollected loans and loan payments. In 2011, the ratio of provision for loan losses to total loan is decreased 0.0064 and 2012 is 0.0137 slightly increased. Again, in 2013 is decreased 0.0079 and 2014 it will be increased 0.0103. And last we saw that, in 2015 is decreased in 0.0055, so we find out that the high significant of credit risk in 2012.

LIQUIDITY RISK

Interpretation: Cash equivalents are investments securities that are for short-term investing, and they have high credit quality and are highly liquid. In 2011 and 2012 it will be 0.1739 and 0.1827, but in 2013 and 2014 it slightly increased 0.2058 and 0.2201. at last 2015 again it decreased. so in this case 2014 lead to most significant of liquidity risk.

MARKET RISK

Interpretation: Market risk is the possibility for an investor to experience losses due to factors that affect the overall performance of the financial markets in which he is involved. In 2011 The ratio of Book-Value of Assets to Market Value of Assets 1.00 and rest of the year 2012, 2013, 2014 and 2015 is same.

Interest Risk:

Interpretation: Interest sensitive assets are assets held by a bank that are vulnerable to changes in interest rates. Interest sensitive liabilities make up a significant amount of the assets of most banks. In 2011 The ratio of Interest Sensitive Assets to Interest
Sensitive Liabilities is 0.8925, but in 2012 it is decreased by 0.8625. so interest risk of UCB bank is decreasing promptly.

1.2 RISK ASSESSMENT OF AB BANK LTD.

Credit Risk:

Interpretation: Loan loss provision is an expense set aside as an allowance for uncollected loans and loan payments. In 2011 The ratio of Provision for Loan Losses to Total Loans is 0.0134 or 1.34%. then it is decreased in 2012 to 0.0098. then it is increased for two years and again decreased to the last year. so it is show that in 2014 credit risk of AB bank is most significant.

Liquidity Risk

Interpretation: Cash equivalents are investments securities that are for short-term investing, and they have high credit quality and are highly liquid. In 2011 0.1650 or 16.50% but in 2012 it is increased to 0.1980 or 19.80% and 2013, 2014 slightly decreased. But 2015 it is again increased. so in this case we understand that in 2012 the liquidity risk of AB bank was most significant.

Market Risk:

Interpretation: Market risk is the possibility for an investor to experience losses due to factors that affect the overall performance of the financial markets in which he is involved. In 2011 The ratio of Book-Value of Assets to Market Value of Assets 1.00. and rest of the year 2012, 2013, 2014 and 2015 is same.

Interest Risk:

Interpretation: The ratio of Interest Sensitive Assets to Interest Sensitive Liabilities
Interpretation: *Interest sensitive assets* are assets held by a bank that are vulnerable to changes in interest rates. *Interest sensitive liabilities* make up a significant amount of the assets of most banks. In 2011, the ratio of Interest Sensitive Assets to Interest Sensitive Liabilities is 0.4531 or 45.31%. It is increased to 2012 that is 0.8666 or 86.66%. and 2014, 2015 it is gradually increased.

1.3 RISK ASSESSMENT OF UTTARA BANK LIMITED:

**Credit risk:**

![The ratio of Provision for Loan Losses to Total Loans](chart1)

**Interpretation:** A credit risk is the risk of default on a debt that may arise from a borrower failing to make required payments. Loan loss provision is an expense set aside as an allowance for uncollected loans and loan payments. In 2011, the ratio of provision for loan losses to total loan is decreased 0.0100 and 2012 is 0.0232 slightly increased. Again, in 2013 is decreased 0.0135 and 2014 and 2015 it is increased to 0.0240 and 0.0345. So in 2012, the credit risk of Uttara bank is most significant and it is increasing year by year.

**Liquidity Risk:**

![The ratio of Cash and Government Securities to Total Assets](chart2)

**Interpretation:** Cash equivalents are investments in securities that are for short-term investing, and they have high credit quality and are highly liquid. In 2012 and 2013, it will be increased by 0.4071 and 0.4041. But in 2011, and 2014 and 2015, it is decreased to 0.3032, 0.3775 and 0.3479. So in 2012, it will lead to high liquidity risk.

**Interest Risks:**

![The ratio of Interest Sensitive Assets to Interest Sensitive Liabilities](chart3)

**Interpretation:** Interest sensitive assets are assets held by a bank that are vulnerable to changes in interest rates. Interest sensitive liabilities make up a significant amount of the assets of most banks. In 2011, the ratio of Interest Sensitive Assets to Interest Sensitive Liabilities is 1.067. It is increased to 2012 that is 1.104. and 2013, 2015 it is gradually decreased. But in 2014, it will slightly increase.
Market risk:

Interpretation: Market risk is the possibility for an investor to experience losses due to factors that affect the overall performance of the financial markets in which he is involved. In 2011 The ratio of Book-Value of Assets to Market Value of Assets 1.00 .and rest of the year 2012, 2013 , 2014 and 2015 is same.

2. Average Calculation:

Risk Measurement of whole Banking sector in Bangladesh with the analysis of AB Bank, UCB Bank, Uttara Bank :

2.1 Credit Risk

The ratio of Provision for Loan Losses to Total Loans

Interpretation: The risk that promised cash flows from loans and securities held by Financial Institutions may not be paid in full. In 2011 credit risk was 0.0073 or .73 percent, In 2012 credit risk was increased to .0155 or 1.5 percent, In 2013 credit was slightly decreased to .0122 or 1.22 percent, In 2014 credit risk highly increased to .0167 or 1.67 percent and In 2015 the risk was constantly same. so we have found out that in 2014 and 2015 the high significant of credit risk faced by banking sector in Bangladesh. so the risk is gradually increasing day after day and it may high negative impact on Bank in Bangladesh. so in this case bank will not appreciate to approve the loan if it is not possible to minimize the credit risk.

2.2 LIQUIDITY RISK:

The Ratio of Cash and Government Securities to Total Assets

Interpretation: The risk that a sudden surge in liability withdrawals may require an Financial Institution to liquidate assets in a very short period of time and at less than fair market prices. In 2011 liquidity risk was 0.2140 or .21.4 percent, In 2012 liquidity risk was increased to 0.2626 or 26.26 percent, In 2013 liquidity was slightly decreased to 0.2569 or 25.69 percent, In 2014 liquidity risk slightly decreased to 0.2501 or 25.01 percent and In 2015 the risk was decreased to 0.2337 or 23.37 percent. so we have found out that in 2012 high significant of liquidity risk faced by banking sector in Bangladesh. The Banks might not follow the central Bank policies that’s why the banks have to face this risk.
2.3 MARKET RISK:

The ratio of Book-Value of Assets to Market Value of Assets

Interpretation: The risk incurred from assets and liabilities in an Financial Institution’s trading book due to changes in interest rates, exchange rates, and other prices.

2.4 INTEREST RATE RISKS:

The ratio of Interest Sensitive Assets to Interest Sensitive Liabilities

Interpretation: The risk incurred by Financial Institution when the maturities of its assets and liabilities are mismatched. In 2011 interest rate risk was 0.8042 or .80.42 percent, In 2012 interest rate risk was increased to 0.9445 or 94.45 percent, In 2013 interest rate risk was highly increased to 0.9963 or 99.63 percent, In 2014 interest rate risk slightly decreased to 0.9707 or 97.07 percent and In 2015 the risk was decreased to 0.9417 or 94.17 percent. so we have found out that in 2013 high significant of interest rate risk faced by banking sector in Bangladesh.

3. Profitability Analysis

3.1 Profitability Analysis of AB Bank:

Return on Assets

2011=Return on Asset: Net income / Total Asset
\[ \frac{1,390,385,050}{154,404,751,243} = .0091 \text{ or } .91\% \]

2012=Return on Asset: Net income / Total Asset
\[ \frac{1,461,809,025}{175,517,312,012} = .0083 \text{ or } .83\% \]

2013=Return on Asset: Net income / Total Asset
\[ \frac{1,098,442,107}{209,748,770,670} = .0052 \text{ or } .52\% \]

2014=Return on Asset: Net income / Total Asset
\[ \frac{1,501,582,377}{256,814,537,089} = .0058 \text{ or } .58\% \]

2015=Return on Asset: Net income / Total Asset
\[ \frac{1,457,312,361}{256,814,537,089} = .0056 \text{ or } .56\% \]

Return on Equity

2011=Return on Equity: Net income / Equity
\[ \frac{1,390,385,050}{15,015,433,185} \]
Return on Equity: Net income / Equity

2012 = \( \frac{1,461,809,025}{16,222,502,086} \) = .092 or 9.2%

2013 = \( \frac{1,098,442,107}{17,308,687,827} \) = .063 or 6.3%

2014 = \( \frac{1,501,582,377}{18,759,103,870} \) = .08 or 8%

2015 = \( \frac{1,457,312,361}{23,575,987,130} \) = .062 or 6.2%

Profit Margin

2011 = \( \frac{1,390,385,050}{8,665,997,427} \) = .16 or 16%

2012 = \( \frac{1,461,809,025}{9,018,446,528} \) = .1620 or 16.2%

2013 = \( \frac{1,098,442,107}{10,121,791,365} \) = .1085 or 10.85%

2014 = \( \frac{1,501,582,377}{12,778,337,269} \) = .1175 or 11.75%

2015 = \( \frac{1,457,312,361}{11,094,155,221} \) = .1313 or 13.13%

3.2 Profitability Analysis of UCB Bank:

Return on Assets

2011 = \( \frac{2,945,202,204}{168,688,543,506} \) = .017 or 1.7%

2012 = \( \frac{1,585,233,380}{207,244,365,339} \) = .0076 or .76%

2013 = \( \frac{3,069,357,562}{225,620,285,172} \) = .014 or 1.4%

2014 = \( \frac{3,700,332,233}{265,912,772,548} \) = .014 or 1.4%

2015 = \( \frac{4,016,037,872}{293,739,350,324} \) = .014 or 1.4%

Return on Equity

2011 = \( \frac{2,945,202,204}{11,094,155,221} \) = .1313 or 13.13%

2012 = \( \frac{1,457,312,361}{18,166,882,999} \) = .08 or 8%
<table>
<thead>
<tr>
<th>Year</th>
<th>Return on Equity</th>
<th>Calculation</th>
</tr>
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<tbody>
<tr>
<td>2013</td>
<td>0.149 or 14.9%</td>
<td>Net income / Equity = 3,069,357,562 / 20,504,781,695</td>
</tr>
<tr>
<td>2014</td>
<td>0.164 or 16.4%</td>
<td>Net income / Equity = 3,700,332,233 / 22,526,684,859</td>
</tr>
<tr>
<td>2015</td>
<td>0.1565 or 15.65%</td>
<td>Net income / Equity = 4,016,037,872 / 25,662,659,327</td>
</tr>
</tbody>
</table>

**Profit Margin**

<table>
<thead>
<tr>
<th>Year</th>
<th>Profit Margin</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>0.317 or 31.7%</td>
<td>Net income / Sale = 2,945,202,204 / 9,294,372,286</td>
</tr>
<tr>
<td>2012</td>
<td>0.317 or 31.7%</td>
<td>Net income / Sale = 1,585,233,380 / 10,177,656,171</td>
</tr>
<tr>
<td>2013</td>
<td>0.247 or 24.7%</td>
<td>Net income / Sale = 3,069,357,562 / 12,412,091,923</td>
</tr>
<tr>
<td>2014</td>
<td>0.242 or 24.2%</td>
<td>Net income / Sale = 3,700,332,233 / 15,269,470,979</td>
</tr>
<tr>
<td>2015</td>
<td>0.256 or 25.6%</td>
<td>Net income / Sale = 4,016,037,872 / 15,627,863,370</td>
</tr>
</tbody>
</table>

**Return on Assets**

<table>
<thead>
<tr>
<th>Year</th>
<th>Return on Asset</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>0.1717 or 17.17%</td>
<td>Net income / Total Asset = 1,654,949,537 / 9,638,640,315</td>
</tr>
<tr>
<td>2012</td>
<td>0.127 or 12.70%</td>
<td>Net income / Total Asset = 1,244,403,575 / 9,809,542,429</td>
</tr>
<tr>
<td>2013</td>
<td>0.1230 or 12.30%</td>
<td>Net income / Total Asset = 1,319,467,473 / 10,701,106,077</td>
</tr>
<tr>
<td>2014</td>
<td>0.126 or 12.6%</td>
<td>Net income / Total Asset = 1,404,251,236 / 12,216,542,897</td>
</tr>
</tbody>
</table>

**Profitability Analysis of Uttara Bank:**

Return on Equity

2011=Return on Equity: Net income / Equity

3,069,357,562 / 20,504,781,695

= 0.149 or 14.9%

2014=Return on Equity: Net income / Equity

3,700,332,233 / 22,526,684,859

= 0.164 or 16.4%

2015=Return on Equity: Net income / Equity

4,016,037,872 / 25,662,659,327

= .1565 or 15.65%
= 0.1150 or 11.50%

2015=Return on Equity: Net income / Equity
1,511,977,074 / 13,201,950,545
= .1145 or 11.45%

Profit Margin
2011=Profit Margin: Net income / Sale
1,654,949,537/ 6,528,429,948
=.2530 or 25.30%

2012= Profit Margin: Net income / Sale
1,244,403,575/ 7,203,717,925
= .1721 or 17.21%

2013= Profit Margin: Net income / Sale
1,319,467,473/ 6,941,005,704
=.1900 or 19.00%

2014= Profit Margin: Net income / Sale
1,404,251,236/ 7,918,337,346
= .1773 or 17.73%

2015= Profit Margin: Net income / Sale
1,511,977,074 / 9,298,891,647
= .1626 or 16.26%

3.4 Profitability analysis of banking sector in Bangladesh by analyzing AB bank, UCB bank, Uttara bank:

3.4.1 Return on Assets =The return of( AB bank + UCB bank + Uttara bank)/ 3

2011= (.0091 + .0170 + .0171) / 3
= 0.0144 or 1.44%

2012= (.0083 +.0076 + .0010) / 3
= 0.0056 or .56%

2013=(.0052 + .0140 + .0099) / 3
= 0.0097 or .97%

2014= (.0058 +.0140 + .0099) / 3
= 0.0099 or 99%

2015=(.0056 + .0140 + .0099) / 3
= 0.0098 or 98%

Interpretation: Return on assets is an indicator of how profitable a company is relative to its total assets. Return on assets gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company’s annual earnings by its total assets, In 2011 return on assets was 0.0144 or 1.44 percent, In 2012 return on assets was decreased to .0056 or .56 percent, In 2013 return on assets was slightly increased to .0097 or .57 percent, In 2014 return on assets slightly increased to .0099 or 99 percent and In 2015 the return on assets was constantly same. we have found out that in 2011 high significant of return on assets by banking sector in Bangladesh, so we think that 2011 was the leading year of return on assets of banking sector in Bangladesh.
3.4.2 Return on Equity = \frac{\text{the return of ( AB bank + UCB bank + Uttara bank)}}{3}

2011 = \frac{(0.0920 + .1844 + .1717)}{3}
= 0.1494 or 14.94%

2012 = \frac{(0.0900 + .0870 + .1270)}{3}
= 0.1013 or 10.13%

2013 = \frac{(.0630 + .1490 + .1230)}{3}
= 0.0783 or 7.83%

2014 = \frac{(.0800 + .1640 + .1150)}{3}
= 0.1197 or 11.97%

2015 = \frac{(.0620 + .1565 + .1145)}{3}
= 0.1110 or 11.10%

Interpretation: Return on equity is a measure of profitability that calculates how many dollars of profit a company generates with each dollar of shareholders’ equity. In 2011 return on equity was 0.1494 or 14.94 percent, In 2012 return on equity was decreased to .1013 or 10.13 percent, In 2013 return on equity was slightly decreased to .0783 or 7.83 percent, In 2014 return on equity slightly increased to .1197 or 11.97 percent and In 2015 the return on equity was slightly decreased to 0.1110 or 11.10 percent. So we have found out that in 2011 high significant of return on equity by banking sector in Bangladesh. So we think that 2011 was the leading year of return on equity of banking sector in Bangladesh. So in 2011 was the high significant of return on equity of banking sector in Bangladesh.

3.4.3 Profit Margin = \frac{\text{the profit of ( AB bank + UCB bank + Uttara bank)}}{3}

2011 = \frac{(0.1600 + .3170 + .2530)}{3}
= 0.2433 or 24.33%

2012 = \frac{(0.1620 + .1530 + .1721)}{3}
= 0.1624 or 16.24%

2013 = \frac{(.1085 + .2470 + .1900)}{3}
= 0.1818 or 18.18%

2014 = \frac{(.1175 + .2420 + .1173)}{3}
= 0.1590 or 15.90%

2015 = \frac{(.1313 + .2560 + .1626)}{3}
= 0.1833 or 18.33%

Interpretation: Profit margin is part of a category of profitability ratios calculated as net income divided
by revenue, or net profits divided by sales. Net income or net profit may be determined by subtracting all of a company’s expenses, including operating costs, material costs and tax costs, from its total revenue. In 2011 profit margin was 0.2433 or 24.33 percent. In 2012 profit margin was decreased to .1624 or 16.24 percent. In 2013 profit margin was slightly increased to .1818 or 18.18 percent. In 2014 profit margin slightly decreased to .1590 or 15.90 percent and in 2015 the profit margin was increased to 0.1833 or 18.33 percent. so by analyzing the whole banking sector in Bangladesh we have found that in 2011 high significant of profit margin banking sector in Bangladesh. so we think that 2011 was the leading year of profit margin of banking sector in Bangladesh.

4. Data analysis and Interpretation

4.1 Hypothesis testing:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>H5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Strongly disagree</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2 = Disagree</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>3 = Neither agree or Disagree</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4 = Agree</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>5 = Strongly Agree</td>
<td>10</td>
<td>3</td>
<td>8</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>65</td>
<td>81</td>
<td>80</td>
<td>75</td>
</tr>
</tbody>
</table>

Average (x̄)          | 4.24| 3.10| 3.85| 3.81| 3.57|

Standard Deviation    | 0.86| 1.31| 0.95| 1.58| 1.76|

| (s)          | T-test value | 0.34 | 4.05 | 2.53 | 1.48 |

H0: μ =3
Ha: μ ≠ 3
N=21

Since the sample size n < 30 therefore we have used t-test.

Hypothesis 1: Competition has a negative relationship with bank profitability in the Bangladesh banking industry.

Question 1: Has Competition a negative relationship with bank profitability in the Bangladesh banking industry?

1= Strongly disagree, 2 = Disagree, 3 = Neither agree or Disagree, 4 = Agree,
5 = Strongly Agree.

Null hypothesis (H0): Competition has not a negative relationship with bank profitability in the Bangladesh banking industry.

Alternative Hypothesis (Ha): Competition has a negative relationship with bank profitability in the Bangladesh banking industry.

Calculation value of T for hypothesis 1:

\[ t_{cal} = \frac{(\bar{x} - \mu_0)}{(s/ \sqrt{n})}, \]  
with the degree of freedom (df)=n-1

\[ = \frac{(4.24-3)}{(0.86/\sqrt{20})} \]

\[ = 6.52 \]

Interpretation of the result:

The critical value of t with df 20 at a =0.05 level of significance is

\[ t_{0.025, 20} = 2.086 \] (for two tailed test)
Since $t_{cal} > t_{0.025, 20}$. Therefore the null hypothesis is rejected or not accepted. So at 5% level of significance, it can be said that Competition has a negative relationship with bank profitability in the Bangladesh banking industry.

Strongly agree 47.62%, agree 33.33%, neutral 14.29%, disagree 3.57%, and strongly disagree 0% of respondents respectively expressed their opinions with the statement that Competition has a negative relationship with bank profitability in the Bangladesh banking industry.

Hypothesis 2: Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry.

Question 2: Do you agree that Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry?

1 = Strongly disagree, 2 = Disagree, 3 = Neither agree or disagree, 4 = Agree, 5 = Strongly Agree.

Null hypothesis (H0): Competition has not a negative relationship with bank risk-taking in the Bangladesh banking industry.

Alternative Hypothesis (Ha): Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry.

Calculation value of $T$ for hypothesis 2:

$$t_{cal} = \frac{\bar{x} - \mu}{s/\sqrt{n}}$$

with the degree of freedom $(df) = n - 1$

$$= \frac{(3.10 - 3)}{(1.31/\sqrt{20})} = 0.34$$

Interpretation of the result:

The critical value of $t$ with $df = 20$ at $a = 0.05$ level of significance is $t_{0.025, 20} = 2.086$ (for two tailed test)

Since $t_{cal} < t_{0.025, 20}$. Therefore the null hypothesis is accepted. So at 5% level of significance, it can be said that Competition has not a negative relationship with bank risk-taking in the Bangladesh banking industry.

Strongly agree 14.29%, agree 33.33%, neutral 14.29%, disagree 23.81%, and strongly disagree 14.29% of respondents respectively expressed their opinions with the statement that Competition has not a negative relationship with bank risk-taking in the Bangladesh banking industry.
Question 3: Do you agree that Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry?

1 = Strongly disagree, 2 = Disagree, 3 = Neither agree or Disagree, 4 = Agree, 5 = Strongly Agree.

Null hypothesis (H0): Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry.

Alternative Hypothesis (Ha): Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry.

Calculation value of T for hypothesis 3:

\[ T_{\text{cal}} = \frac{\bar{x} - \mu}{s / \sqrt{n}}, \] with the degree of freedom (df) = n - 1

\[ = \frac{3.85 - 3}{0.95 / \sqrt{20}} \]

\[ = 4.05 \]

Interpretation of the result:

The critical value of t with df 20 at a = 0.05 level of significance is

\[ t_{0.025, 20} = 2.086 \] (for two tailed test)

Since \( t_{\text{cal}} > t_{0.025, 20} \), 20. Therefore the null hypothesis is rejected or not accepted. So at 5% level of significance, it can be said that Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry.

Strongly agree 38.10%, agree 42.86%, neutral 9.52%, disagree 9.52%, and strongly disagree 0% of respondents respectively expressed their opinions with the statement that Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry.

Hypothesis 3: Risk-taking has a positive relationship with bank profitability in the Bangladesh banking industry.

Question 4: Do you think that Risk-taking has a positive relationship with bank profitability in the Bangladesh banking industry?

1 = Strongly disagree, 2 = Disagree, 3 = Neither agree or Disagree, 4 = Agree, 5 = Strongly Agree.

Null Hypothesis (Ho): Risk-taking has not a positive relationship with bank profitability in the Bangladesh banking industry.

Alternative Hypothesis (Ha): Risk-taking has a positive relationship with bank profitability in the Bangladesh banking industry.

Calculation value of T for hypothesis 4:

\[ t_{\text{cal}} = \frac{\bar{x} - \mu}{s / \sqrt{n}}, \] with the degree of freedom (df) = n - 1

\[ = \frac{3.81 - 3}{1.58 / \sqrt{21}} \]

\[ = 2.35 \]

Interpretation of the result:

The critical value of t with df 20 at a = 0.05 level of significance is

\[ t_{0.025, 20} = 2.086 \] (for two tailed test)
Since $t_{calc} > t_{0.025, 20}$. Therefore the null hypothesis is rejected or not accepted. So at 5% level of significance, it can be said that Risk-taking has a positive relationship with bank profitability in the Bangladesh banking industry.

Strongly agree 14.29%, agree 33.33%, neutral 14.29%, disagree 9.52%, and strongly disagree 23.80% of respondents respectively expressed their opinions with the statement that Risk-taking has a positive relationship with bank profitability in the Bangladesh banking industry.

Hypothesis 5: There is a cascading relationship among market competition and bank innovation, risk-taking, profitability.

Question 5: Is there a cascading relationship among market competition and bank innovation, risk-taking, profitability?

1 = Strongly disagree, 2 = Disagree, 3 = Neither agree or Disagree, 4 = Agree, 5 = Strongly Agree.

Null Hypothesis (Ho): There is not a cascading relationship among market competition and bank innovation, risk-taking, profitability.

Alternative Hypothesis (Ha): There is a cascading relationship among market competition and bank innovation, risk-taking, profitability.

Calculation value of $T$ for hypothesis 5:

$t_{calc} = (\bar{x} - \mu) / (s/\sqrt{n})$, with the degree of freedom $(df) = n - 1$

$= (3.57 - 3) / (1.76/\sqrt{21})$

$= 1.48$

Interpretation of the result:

The critical value of $t$ with $df = 20$ at a $=0.05$ level of significance is $t_{0.025, 20} = 2.086$ (for two tailed test)

Since $t_{calc} > t_{0.025, 20}$, Therefore the null hypothesis is accepted. So at 5% level of significance, it can be said that Risk-taking has a positive relationship with bank profitability in the Bangladesh banking industry.
2. Strongly agree 14.29%, agree 33.33%, neutral 14.29%, disagree 23.81%, and strongly disagree 14.29% of respondents respectively expressed their opinions with the statement that Competition has not a negative relationship with bank risk-taking in the Bangladesh banking industry.

3. Strongly agree 38.10%, agree 42.86%, neutral 9.52%, disagree 9.52%, and strongly disagree 0% of respondents respectively expressed their opinions with the statement that Competition has a negative relationship with bank risk-taking in the Bangladesh banking industry.

4. Strongly agree 14.29%, agree 33.33%, neutral 14.29%, disagree 9.52%, and strongly disagree 23.80% of respondents respectively expressed their opinions with the statement that Risk-taking has a positive relationship with bank profitability in the Bangladesh banking industry.

5. Strongly agree 4.76%, agree 19.05%, neutral 4.76%, disagree 42.86%, and strongly disagree 28.57% of respondents respectively expressed their opinions with the statement There is not a cascading relationship among market competition and bank innovation, risk-taking, profitability.

6. **1. CONCLUSION:**

This research aimed at investigating the impact of risk and competition on bank performance to fill the gap in the existing banking literature in Bangladesh. Based on the empirical evidence, it can be concluded that competition negatively influences the performance of banks in terms of profitability and efficiency. The continuous reduction of bank spread margin under high rate of inflation and the degree of accelerated competition contribute to such negative impact on performance. Moreover, it is also highly likely that the non-price competition in the form of branch expansion and advertisement also exists in the banking sector of Bangladesh as most of the private banks have been experiencing the expansion phase. Such non-price competition may favorably affect the financial deepening of a developing country like Bangladesh where financial sector is mostly underdeveloped in nature. However, due to the absence of deposit rate controls under liberalization, the inefficiencies created by the non-price competition may outperform the gains from financial deepening by creating inferior substitutes for customers and by eroding the franchise value of banks, particularly private banks.

Therefore, based on the empirical evidence, it can be argued that the regulatory authority needs to ensure a structure for the banking sector with necessary incentive for banks, particularly for private banks, to improve their profitability and efficiency. No doubt, various changes under financial deregulation have been successful in accelerating the level of competition. The issue is whether this changing level of competition can enhance the banking sector performance in a developing country like Bangladesh. It is also evident that Bangladesh Bank is going to deregulate the banking sector further by Permitting nine new private banks to enter into the market. Such decision accelerates the competition level in the future, which may result in a decreased performance. Moreover, the issuance of BRPD circular letter illustrates the importance of encouraging private and foreign banks to stimulate agriculture and SME sectors for the economic prosperity of the country. How can it be done? Based on the findings, there is no incentive for banks at this point of time. Under these circumstances, it is vital for the regulatory authorities to revisit the structural changes in order to avoid the occurrence of banking sector instability argued by the existing literature.

### 2. REFERENCES

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A Study On Bangladesh Consumers’ Understanding of Returnable, Recyclable and Reusable (3R) Food Packaging

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Paper# ICBM-17-360

Abstract – Food packaging is the core element of food supply chain. 3R (Returnable, Recyclable and Reusable) food packaging is the largest scope of packaging. Use of 3R packaging has strong interest from the environment and health aspect, though the success of these packaging highly depends on the customers understanding of 3R packaging materials. This paper explains how customers’ perception is influenced by their basic knowledge of 3R packaging materials, from Bangladeshi perspective. After investigating this relation statistically, this research creates a strong ground for further examination on food packaging supply chain and 3R reverse logistics of Bangladesh. Customers' understanding of healthy food packaging material in right 3R context is surprisingly high for different types of Bangladeshi consumers. In order to develop more environment-friendly food supply chain, these findings will become significantly useful.

Keywords - Returnable, recyclable, reusable, supply chain, food packaging, logistics, consumer psychology

I. INTRODUCTION

75% of the American waste stream is recyclable, but they only recycle about 34% of it, that is 10th among top ten. Up to 60% of the rubbish in the UK, that ends up in the dustbin could be recycled [1]. This is an indication that somewhere the efficiency of 3R (Returnable, Recyclable and reusable) food packaging is failing to achieve its desired goal. 3R food packaging comes with two important characteristics. First, reverse logistics is a significant element in this sector, without the proper system of simple reverse logistics it will become a redundant approach. However, a customer can directly contribute to reuse and to some extent recycle food packaging materials. That brings the next factor in the picture, 3R food packaging usually ends up on consumer’s hand and what they decide to do with a particular packaging is very independent of customer level [2]. Therefore, before trying to solve the big problem of efficient use of 3R food packaging from a developing economy context, it is incredibly important to explore how consumers of these developing economy perceive 3R food packaging. This study has investigated how different customers of Bangladesh observe 3R packaging and customers’ attitude toward different 3R food packaging materials. This study explored consumers’ ability to understand different food packaging materials with relation to how they perceive different 3R food packaging. To conduct this study, the researcher focused on diversified demographic characteristics of consumers of Bangladesh.

II. LITERATURE REVIEW

Food is an integrated part of daily life, exclusively user friendliness and environment friendliness of food packaging are demand of time. In 2011, 10.9 million tons of packaging were used, large percentages of this were food packaging, 67% of them were recycled, reused, or recovered [3]. Whether the packaging is paper, plastics, or glass after food hygiene packaging materials’ recyclable and reusable character gets the highest priority. Thus, profits and costs of companies are increasingly influenced by the packaging SCN (Supply Chain Network). Nowadays, numerous food enterprises had focused entirely on consumers and retailers packaging which normally is disposable, however, environmental effects of food packaging took more share of concern of government and community, which indicated an urgent demand for a reusable and returnable packaging supply chain system [4].

A. Defining 3R packaging

Recent literatures and British Packaging Standards listed [5] out three types of packaging: returnable packaging, which was used for transport and delivering products (the ownership do not change), recyclable packaging, which was normally collected and reformed by manufacturers (the ownership is changed), and reusable packaging, which could be used many times either by customers or by producers (the ownership was changed since the packaging was sold).

B. Demand Characteristics of food packaging

The functions of food packaging are complex. Main fundamental functions of food packaging include protection, communication, convenience, and containment. Reference [6] helps to explore the demand characteristics of food packaging are as follows:

- **Hygiene:** This is the basic demand for food packaging.
- **High strength and stability**: food logistics are the longest network that is why industry demand for strong stability and quality of packaging materials in order to avoid damage.
- **Safety and seal**: Also for the purpose of protection, the food packaging should be capable of preventing contamination of outside bacteria or dust particles.
- **Communication ability**: The packaging is an important way of conveying information about contained food and most of them are bound by law and standard (BSI Standards, 2013).
- **The quality of high portability**: It is vital characteristics for easy logistics activities as well as for customers.
- **Environment-friendly**: As to the 3R supply chain, one of the important demand characteristics is that packaging materials should be very recyclable, reusable and sustainable.

### C. Impact of packaging on food supply chain

According to reference [7], relationships between different entities in an SCN, which is especially between a prime organization and supportive entities, have frequently been noted as a very influential force on network structures and their management. Food packaging industry is fully dependent on the food industry, however, there is strong player in the 3R industry who can influence food producers. This relation will be understandable if the whole process can present through a single model (Fig. 1.).

FSCs (Food Supply Chains) maintain close relationships between packaging and prime industry. Food products have to maintain physical, chemical and biological protection, and also information about nutrition and expiration. All of these requirements are met through packaging, which must follow the food product from its processing and manufacturing until its purchase by consumers [8]. The supply chain network for 3R packaging of food products is usually illustrated a long but fast moving model. It covers three different corridors to establish one set of network flow. There is a food products’ flow and a packaging materials’ flow both operate parallel way and there is a reverse flow of packaging materials in three different modes, those are returnable, reusable and recyclable (Fig. 1.).

This network model is trying to cover the life cycle of the packaging materials. Coming from packaging raw materials to packaging production, then it gets along with FSC at the food packaging stage and moves together till consumption stage. Some of those packages have been reused by customers and retailers, some display packaging generally go back to display package providers and a large portion of it gets through a recycling process to get back at the material stage.

### D. Industrial importance of 3R packaging

It is necessary to select a suitable type of food packaging based on the type and properties of each kind of food. Four major materials are used in the packaging industry. Paper and cardboard are key packaging materials. The advantages of them include not only low cost but also easy collection and recycling. Paper is usually for wrapping food directly as primary packaging and cardboard are used to contain several primary packages as secondary packaging for efficient transportation [10]. Plastics are the second popular one. Plastics provide a wide range of advantages such as light weight, low cost and excellent on strength. Glass is another ideal packaging especially for beverage, oil or other liquid food items. Although the easy breakage is a problem of glass, the biggest advantages of glass are hygiene and easily reused or recycled. Reference [11] indicates 11.5 million tons of glass were generated in 2010, about 27% of which was recovered for recycling [12]. Metals such as aluminium and tin play an important role as food packaging materials. These materials are extensively packaged for liquid or powder food.

### E. Communication and complexity in 3R supply chain

After food packaging completes its first supply chain journey with food from producer to customer, then its reverse logistics journey starts from consumer toward backward (Fig. 1.). This touring point is highly influenced by the customers. That prohibits communication and transparency in the supply chain which will lead to missing optimal solutions for some problems and less efficient, such as failure in choosing the right production batch and types of packages [13]. Additionally, a complex internal linkage between the grocery boundary and the retailer boundary deteriorate the efficiency of communication [13]. To deal with it, data-sharing, standardization, and awareness of opening data are needed for the 3R Packaging, nevertheless, lack of trust, numerous principles which need to be standardized,
and lack of knowledge of opening data make opening data system still challengeable [14].

F. Develop research questions

This research has focused on investigating one single issue. Current literatures clearly plot the importance of understanding customers’ perception. Supply chain of food packaging cannot be complete without the support of customers [15]. Therefore, until the consumers’ perception and willingness is not clearly explored, it is not efficient to invest in improvement of reverse logistics of food packaging supply chain.

III. METHODOLOGY

As the purpose of this study is to explicate consumer attitudes and perceptions towards packaging within the food supply chain category, a quantitative research design was employed. The next step was to develop a structured survey questionnaire. The questionnaire accomplishes three goals.

- It examines the hypothesized associations in Bangladesh.
- It tests and quantify data from questionnaire.
- It compiles the research question and literature review.

Over a four-month period, surveys were collected and trends and patterns were examined to find relationships and differences between perceptions among consumers, toward 3R food packaging. The structured survey was sent to the participants using ‘Google Forms’ an on-line database. The sample of respondents was drawn from different areas mainly in the metropolitan Dhaka. 303 respondents were approached. All of them filled the questionnaires, but 27 cases had to be erased for missing and inappropriate information. Thus, the final sample size was 276 respondents, indicating a response rate of 91 %.

The main theoretical framework of the study focuses on finding the relationship between dependent variable (consumers’ perception) and independent variables (consumers’ knowledge regarding 3R food packaging and packaging material). A descriptive study has been used to explain how the independent variables (consumers’ knowledge, packaging material) influence the consumers’ understanding of food packaging. Hypothetically, consumer’s perception of 3R food packaging is dependent on the elements of knowledge regarding 3R food packaging as well as packaging material. This set of elements can influence the consumer’s perception and attitudes towards food packaging individually or collectively. Therefore, the following theoretical framework is sought for.

\[
\text{Consumers' Perception} = (\text{Consumers' knowledge} + \text{Packaging material})
\]  

The statistical tools SPSS and Excel were used for data analysis. Relationships and connections between questions were discussed which has been analysed with multiple correspondence analysis tests. Multiple correspondence analysis is a technique that analyses nominal categorical data set by assigning numerical values to the cases. Descriptive frequencies have been used to find out the association of different demographic variables with consumers’ knowledge of food packaging. Multiple Regression was used to test the value of the dependent variable based on the independent variables. Factor analysis, KMO and Bartlett’s Test were carried out to find out the dependence of the variables. KMO indicator showing value more than 0.6 is a clear indicator of explainable relationship [16]. Multiple linear regressions were used to model the impact of the independent variable on consumer perception regarding 3R food packaging, to predict the relationship between the dependent and the independent variables, and to verify whether these 2 variables will be able to explain the variance in confidence level.

This statistical indicators strength the value of findings and helped to create mathematical base for the acceptance of the finding.

<table>
<thead>
<tr>
<th>TABLE I</th>
<th>KMO and Bartlett's Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</td>
<td>.633</td>
</tr>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td>Approx. Chi-Square 1056.56</td>
</tr>
<tr>
<td></td>
<td>Df 3</td>
</tr>
<tr>
<td></td>
<td>Sig. .000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE II</th>
<th>Regression test output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mo</td>
<td>R</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE III</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Sum of Squares</td>
</tr>
<tr>
<td>Regression</td>
<td>23.809</td>
</tr>
<tr>
<td>Residual</td>
<td>34.506</td>
</tr>
<tr>
<td>Total</td>
<td>58.315</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), knowledge, pack_material
TABLE IV
Coefficients*

<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>.922</td>
<td>.442</td>
<td>2.085</td>
<td>.038</td>
</tr>
<tr>
<td>pack_material</td>
<td>.712</td>
<td>.184</td>
<td>.226</td>
<td>.3865</td>
</tr>
<tr>
<td>knowledge</td>
<td>.106</td>
<td>.048</td>
<td>.129</td>
<td>.2055</td>
</tr>
</tbody>
</table>

a. Dependent Variable: con_perception

IV. FINDINGS ANALYSIS

Gender distributions for the participants were 57.5% male and 42.5% female. A big part of respondents (42.2%) were young people between 18 and 26 years of age. Another predominance was observed with the formal education level similar to age distribution. Around one-third of the subjects (36.4%) stated themselves as student and majority of them (53.5%) had a bachelor’s degree, whereas, other degree distributions were 33.8% for masters, 11.3% for high school. With respect to another occupational standard of the respondents, 37.8% of total respondents were the private employee, 10.9% were entrepreneurs the remaining 14.9% were from others occupation (retired, government employee, housewife, etc.).

Any empirical research work should qualify the KMO and Bartlett’s analysis for checking the relevance of the variables [16]. As such the KMO and Bartlett’s Test is found to be 63.3% and the significance level is 0.000. It is evident that total 62.53% variation of the dependent variable (Table I) (consumers’ perception regarding 3R food packaging) can be explained by the independent variables (consumers’ knowledge and packaging material), which has been found through Total Variance Explained. ANOVA test has unveiled the significance level of this study with the score of 0.000 (Table III) which is less than 0.05; indicating the validity of the study. The result of the coefficient was used to examine the direction and strength of the relationship between the variables. It has been showed that significance level of “packaging material” is 0.000 and the significance level of “knowledge” is 0.028, which signifies the relationship between these independent variables with consumers’ perception regarding 3R food packaging (Table IV). Here, 1 unit change in packaging material will bring 0.226-unit remodel in the consumer perception, whereas, knowledge will bring 0.129-unit of change (Table IV).

In Fig. 2. associate between packaging material and healthiness show that the consumers’ preference for indicating which packaging material is healthy or which is unhealthy. Majority respondents (80%) expressed the idea that the plastic packet was not healthy as packaging material. Nonetheless, a majority indicate interest in reuse the plastic packet to store other items. The result presented in Fig. 3. show consumer’s perception regarding 3R packaging materials. Glass is a familiar and traditional material that has been used for packaging since 50 B.C., which is why more than 80% respondents have perceived the glass packaging as being healthy, because of the strong element of reusability- which has been evinced by 50.4% of respondents. Survey respondents have overwhelmingly agreed that Tetra pack system is healthier to use (76 %) and that they would recycle the package system after the original product was consumed (76.4%). Unlike the glass material, the Aluminium pack was perceived by respondents as a one-way package system, not appropriate for secondary use. 77.2% respondents in Bangladesh agreed in their perception that, the one-time aluminium pack can be easily re-cycled. The majority of participants did not consider the paper packaging to be healthy. 76.8% respondents across the spectrum expressed the idea that they would not use the paper packet after they were done with it (no secondary use) rather it could be re-cycled. Many respondents (60%) perceived plastic box as healthy packaging. Additionally, 70.7% survey respondents accord that they would re-use the plastic box after consuming the original product, whereas, 22.1% respondents appreciate it as recyclable material. The majority of the participant agreed that wood or jute packaging is healthy. 50% respondents from Bangladesh equate the reusability of wood or jute material and 41.3%...
consider it as recyclable. Finally, from the result obtained from fig. 2 and 3, the distribution of the respondents’ responses, about 60% consider metal container as healthy packaging, which could be reusable agreed by 60.5% while only 26.4% people agreed to consider it as recyclable.

V. CONCLUSION

The reverse supply chain of food packaging materials is always far more complex compared to the forward supply chain. It needs extra attention and understanding of bigger picture to make this reverse supply chain managed efficiently. All relevant parties like food-producer, food-retailer, packaging provider, food-logistics, government, social entities, and consumer all have role to play in this 3R packaging network. Since it is a circle network so if any one of them does not operate efficiently then the whole process will face the risk of failure, however, higher waste is an add-on with that. Among different stakeholders of this process, food consumers are the most complicated group. It does not require a lot of interruption to cause failure in this supply network. If a customer shows careless attitude and ignores the actual 3R class of food packaging, then it will be remarkably difficult for the packaging producers and the food producers to keep the reverse supply chain efficiently running. If customers consider healthy packaging materials as unhealthy or reuse a recyclable material then the entire 3R supply chain will be interrupted. So consumers’ attention on hygiene and reusability are the keys of efficiency here. This research already establishes the relation clearly and pinpoint the importance, therefore, to improve 3R food packaging supply chain this relation needs to be considered.

VI. FUTURE RESEARCH SCOPE

This findings open doors for more extensive research on 3R food packaging materials’ supply chain. Food supply chain, food packaging supply chain and operations of grocery stores are strongly connected and correlated. In order to increase efficiency among these sections’ correlation, extensive research is required. However, in Bangladesh there is some recent research have developed on modern grocery store operation, at the same time there are researchers working on food and agricultural supply chain. This paper is a very important addition to this section from a packaging perspective.

Understanding on how consumers of developing economy perceive food packaging will help to conduct the more scientific study on the efficiency of food supply chain. It will also allow future research to put these findings in the baseline to develop extensive research on how better and innovative food packaging can enhance efficiency of food supply chain with consideration of consumers’ perspective on food packaging.

Furthermore, to ensure efficiency in food supply chain and food packaging supply chain, producers need to confirm customer understand the hygiene level of packaging materials. Because with the better understanding consumer will be more considerate to put the effort in participating in recycling and returning packaging materials. On top of that, it will also be interesting to explore how to introduce healthier reusable food packaging, because clearly, consumers have a more positive perception of reusable packaging materials than any others. Through more research on food packaging supply chain, food industry can find more innovative 3R packaging options.

REFERENCES

[10] D. Hellström and M. Saghir, "Packaging and logistics interactions in retail supply


An Empirical Study on Expatriates’ Adaptability to Life and Work in Bangladesh

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¹Department of Business Administration, Northern University Bangladesh, Dhaka, Bangladesh
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Abstract – The paper studies cross cultural adaptability of 45 expatriates from 18 different countries living in Bangladesh, the purpose of which was to bring out the factors that facilitate or hinder their adjustment with the sociocultural and organizational aspects. The paper finds that almost every expatriate has at least a few Bangladeshi friends and two third of them find no difficulty in getting along with the local people. Most of the expatriates feel lonely in Bangladesh and more than two-third thinks they lack entertainment facilities. About 48% of them have reported improved standard of living compared to their home countries. Even though two-third of them thinks that cultural orientation upon arrival would help them to better adjust to life in overseas assignment, only 36% received such training. Almost 90% expats think that learning local language would help them to adjust to life in foreign countries. About 88% of the expats expressed their working in Bangladesh as pleasant experience.

Key Words: Bangladesh, Cross Cultural Adaptation, Expatriates, Life, Work

I. INTRODUCTION

Bangladesh has become the most lucrative hub for foreign direct investment and subsidiary location due to the immense prospect it holds to global and domestic companies. Foreign Direct Investment in Bangladesh increased by 2003.53 USD Million in 2016 [1]. To cater for this investment, local employees and expatriates are relocated for transfer of appropriate knowledge, skills and work techniques. As such Bangladesh is already witnessing sizable number of expatriates who are either hired by foreign or local companies.¹

The term adaptability can be explained from two perspectives- i) personality traits associated with intercultural adjustment potential which however to a great extent depend on individual’s own traits, personality, local knowledge, and ii) country specific factors associated with intercultural adjustment potential. In many cases, expatriates are confronted with both job-related and personal adjustment problems. If ignored, these adjustment problems may result in stress to expatriate’s social and professional lives and even may lead to premature exit from service and turnover.

¹ As of 2016, around 200,000 foreigners are working in Bangladesh, of which only 5% are registered with Board of Investment (BOI), Bangladesh Export Processing Authority (BEPZA) and NGO Bureau Affairs.
II. LITERATURE REVIEW

The performance of expatriates heavily depends upon the host country workforce and different kinds of support systems created by organization within for better adjustment including informational support, cooperation and emotional support. The adaptability of the expatriates also depends upon how intercultural conflicts with the workforce of the host country are dealt with [10], [11]. Some writers have highlighted the importance of intercultural adjustment training for handling intercultural sensitivity and interactions [12], [13], [14], [15].

Another important dimension for cultural adjustment has been elaborately discussed by Geert Hofstede, a Dutch social psychologist and management scholar. Analysis of responses from over 116,000 IBM employees to questions about their job and work settings revealed systematic cultural differences across four dimensions: power distance, individualism/collectivism, uncertainty avoidance, and masculinity/femininity. According to the exponent Bangladesh scores high in power distance, collectivism, masculinity, uncertainty avoidance. [16], [17].

Black, Mendenhall and Oddou proposed a comprehensive model of determinants of adjustment to international assignments [18]. This model was subsequently expanded and tested by Shaffer, Harrison and Gilley who additionally examined two individual factors and three positional factors as moderators of adjustment determinants. The Non Work factor was one of the outcome of the study that are synonymous with the factors related to a country culture that can either facilitate or hinder cross-cultural adjustment.

The above literature indicates that for successful overseas assignment the managers have to take various factors related to culture and the work environment of the host country into consideration. They basically focused on how expatriates’ social relationships with host-country nationals contribute to their adaptation abroad and thereby improving their productivity and work efficiency.

III. METHODOLOGY

The primary objective of the current study is to explore the expatriates’ adaptability to life and work in Bangladesh, so that the managers in international assignment perform their duties successfully. Thus, this exploratory study has employed survey method using a structured questionnaire.

A. Questionnaire Design

The questionnaire was designed to include factors related with host country culture and the cultural distance between the expats and the hosts, the social relationship of the expats to the host country nationals and the work environment. The present study has adapted the Framework of International Adjustment (FIA) model as proposed by Black, Mendenhall and Oddou [18] with minor modification.

B. Sample design and data collection

A total of 45 respondents were surveyed for the present study. The respondents were selected from a wide variety of demographic, socioeconomic and organizational backgrounds to reflect the true multinational workforce structure in Bangladesh.

IV. RESULTS AND DISCUSSION

A. Demographic Analysis of the Expats:

As most of the expats living in Bangladesh are male, the sample includes 69% male and 31% female. Most of the respondents belong to 31 to 40 years of age group (31%), followed by more than 50 years (29%) and between 21 to 40 (20%). On the educational qualifications of the respondents, most of the samples have master’s degree (51%), followed by bachelor degree (36%), and PhD (9%). Most of the expats come from Asian countries (62%) which include India (17%), South Korea (13%), Japan (9%), China (7%), Beside Asian countries expats also hailed from USA (11%) and UK (7%).

The main five sectors the expats are working include, i) Education (20%), Government and Affiliated Agencies (18%), Business including the Garments Sector (17%), NGOs and Development Organizations (16%), and MNCs (13%). For the majority of the expats (56%), the jobs here were not their first assignment overseas. Most of them (52%) earns more than Tk. 2,00,000/per month and have not worked in Bangladesh (69%) prior to the current assignment.

Most of the expats follow Christianity (47%), Islam (18%), Buddhism (13%), Hinduism (11%) and others (11%). 76% of the sample expats are married with 24% single. 50% of the married people are accompanied by their spouse and for 38%, their children are staying with them. About 59% of the expats visit their home country at least twice a year, 33% at least once a year, and the remaining 8% visit their home country at least once in two years.

<table>
<thead>
<tr>
<th>TABLE I DEMOGRAPHIC FACTORS OF THE EXPATRIATES (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

B. Social Lives of the Expatriates in Bangladesh:

About 93% of the expats have at least a few Bangladeshi friends and it is strange that 7% of the expats have no Bangladeshi friend. 67% expats always get along with Bangladeshis, 28% sometimes and 5% never get along with the locals here. Most of the expats (56%) feel
lonely in Bangladesh as most of them (69%) also find lack of entertainment facilities in the country.

The aspects of life which bother them the most are traffic situation in the city (54%), political unrest and instability (35%), and pollution in the city (7%).

TABLE II
SOCIAL LIVES OF THE EXPATRIATES

<table>
<thead>
<tr>
<th>Bangladesh</th>
<th>Friend</th>
<th>Get along with B’deshis</th>
<th>Feeling lonely</th>
<th>Aspect of life bothers the most</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ma.</td>
<td>38</td>
<td>A. 67</td>
<td>S. 56</td>
<td>Political unrest 35</td>
</tr>
<tr>
<td>Few.</td>
<td>55</td>
<td>S. 28</td>
<td>N. 44</td>
<td>Traffic 54</td>
</tr>
<tr>
<td>N.</td>
<td>7</td>
<td>N. 5</td>
<td></td>
<td>Pollution 07</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Law and order 02</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. Opinion about Bangladesh and the Bangladeshis:

95% of the expats opined that Bangladeshis are friendly, while 86% also mentioned them as helpful. It is interesting to note that 45% of them had different ideas about Bangladeshi people before coming to Bangladesh.

As far as the expats’ opinions are concerned, Bangladeshis are quite open on accepting people of other religions and from other countries. This has been demonstrated by that only 4% of them think that their religious background has hindered their interactions with Bangladeshi people.

While comparing with the living standard of the expats at home and in Bangladesh, 25% think that their living standard has been compromised but 48% has reported improved living standard in Bangladesh.

TABLE III
OPINION ABOUT BANGLADESHIS

<table>
<thead>
<tr>
<th>Social aspects</th>
<th>S. A</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>S. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friendly</td>
<td>53</td>
<td>43</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Helpful</td>
<td>20</td>
<td>66</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lack of entertainment facilities</td>
<td>42</td>
<td>27</td>
<td>20</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Religious background hindered interaction</td>
<td>2</td>
<td>2</td>
<td>27</td>
<td>38</td>
<td>31</td>
</tr>
<tr>
<td>present standard of living is below previous</td>
<td>9</td>
<td>16</td>
<td>27</td>
<td>33</td>
<td>15</td>
</tr>
</tbody>
</table>

D. Impacts of Cultural Orientation among the Managers for International Assignments:

It is to be noted that only 36% of the expats were given cultural orientation upon arrival in Bangladesh. But the training provided was inadequate to many in helping them to adjust with the social lives of the expats as only 40% of them think that the cultural training they received was adequate and 20% opined those training programs as totally inadequate. However, nearly two-third (66%) respondents think that cultural orientation would help them to adjust to their life and works in Bangladesh.

Learning the local language is very important aspect of successful adaptation to social life in any country. As understood, learning the language of the host country would enable the expats to communicate well with the locals. Though English is well spoken in Bangladesh with some limitations, learning Bangla would help them to adjust to lives in Bangladesh. This is evidenced from the opinion that 89% of the respondents think that learning Bangla will help them to adjust to lives in Bangladesh.

TABLE IV
CULTURE AND LANGUAGE ORIENTATION

<table>
<thead>
<tr>
<th>Cultural Aspects</th>
<th>S. A</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>S. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture is totally different</td>
<td>22</td>
<td>44</td>
<td>18</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Cultural orientation would help to adjust</td>
<td>16</td>
<td>50</td>
<td>25</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Learning Bangla help</td>
<td>29</td>
<td>60</td>
<td>9</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Received cultural training was adequate</td>
<td>14</td>
<td>26</td>
<td>40</td>
<td>11</td>
<td>9</td>
</tr>
</tbody>
</table>

E. Work Environment in Bangladesh:

On the aspect whether the working environment in Bangladesh was a pleasant experience or not 73% responded positively with none negatively. Getting along with other expats well 67% noted positive view with only 7% having difficulties, while 84% gets along with other coworkers easily, 7% noted negatively. On whether the information provided by the employers about the jobs were accurate, 65% noted positively, while only 4% opined negatively. On the organizational loyalty, it is overwhelmingly positive (82%) that the expats feel they are part of the organization.

An interesting question was asked about the business environment, whether they differ from that of theirs, mostly (57%) expressed dissimilarity of the business environment, with only 9% expressed them as similar.

On the relevance of their previous job experience, 63% expressed them as relevant, with only 14% said otherwise. On the organizational culture whether their opinions are sought after, 72% noted positively, while 62% noted appreciation of ideas even if they were wrong. Furthermore 85% of the expats opined that in their organizations different views are mostly welcomed. On how far disagreement with the higher authority are welcomed, only 45% noted their agreement, though 80% of the expats expressed that innovations and new ideas are welcomed in their organizations.

TABLE V
WORK ORIENTATION TO THE EXPATS

<table>
<thead>
<tr>
<th>Aspects of working environment</th>
<th>S. A</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>S. D.</th>
</tr>
</thead>
</table>
F. Correlational Study on Different Aspects of the Expatriates’ Lives:

This study indicates that there is a significant relationship between different aspects of the expatriates’ lives and works in Bangladesh. For instance a significant relationship is found between whether the religious background has hindered the interaction with Bangladeshis and lack of entertainment facilities in Bangladesh. This perhaps indicates the lack of availability of western types of entertainment which are primarily considered as religious taboo in Bangladesh.

A correlational study on different aspects of adaptation indicates that there is a significant relationship between whether the religious background has hindered the interaction with the Bangladeshis and lack of entertainment facilities available here. This perhaps indicates the conservative nature of Bangladeshi people in socially acceptable forms of entertainment available to the foreigners.

Furthermore, the significant correlation between impact of cultural orientation to adjust to life in Bangladesh and whether the received cultural training was adequate for adjusting with social life indicates the importance of cultural training for the expats prior to their arrival. It is also interesting to note that lack of knowledge in local language (Bangla) does not hinder the adjustment to life in Bangladesh, as quite a considerable urban citizens in Bangladesh are now able to communicate in English well. However, most of the expats still think learning the local language would help them better communicate with the locals.

The expats whose coworkers are sensitive to the needs, received cultural training upon arrival, and would like to use the experiences here for his or her career improvement also find working in Bangladesh a pleasant experience.

This is to note that the expats who think that working environment in Bangladesh is different than that of their home countries are nevertheless able to get along with their Bangladeshi coworkers. The expats who were given accurate information about their jobs are the ones who work in organizations where different views are tolerated, innovations are encouraged and well received and team works are encouraged.

The expats who think their business environment is different than that of Bangladesh, works in the organizations where their opinions are sought after, different views are welcomed and bosses are sensitive to their needs; are able to get along with their coworkers, indicating their easy adaptability to work life in Bangladesh.

The expats who find their bosses and coworkers sensitive to their needs, think that their experience here will help them to progress in their international career, work with the organizations where different opinions are tolerated and sought after, and think working here as a pleasant experience are unlikely to terminate their contract.

<table>
<thead>
<tr>
<th>TABLE VI</th>
<th>CORRELATION BETWEEN DIFFERENT ASPECTS OF LIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Friendly</td>
</tr>
<tr>
<td>Friendly</td>
<td>1</td>
</tr>
<tr>
<td>Helpful</td>
<td>1</td>
</tr>
<tr>
<td>Entertain ment facilities</td>
<td>1</td>
</tr>
<tr>
<td>Religious background</td>
<td>1</td>
</tr>
<tr>
<td>Standard of living</td>
<td>1</td>
</tr>
</tbody>
</table>

Working in Bangladesh is a pleasant experience 16 57 27 0 0
Always get along with other expatriates 11 56 26 7 0
Employer gives accurate information about the job 16 49 31 2 2
Feels like he/she is a part of the organization 39 50 11 0 0
Gets along with other co-workers 41 43 9 2 5
Business operation here is different 23 34 34 7 2
Opinion is sought after 10 62 26 2 0
Opinion is appreciated even it might be wrong 7 55 34 2 2
Different views are welcomed in organization 16 69 13 2 0
Innovations/new ideas are encouraged 27 53 16 4 0
Co-workers are sensitive 11 49 31 9 0
Boss is sensitive in needs 20 47 31 2 0
Current experience will open new opportunities 22 51 25 2 0
The cultural training was very valuable for the job 6 35 50 6 3
Feeling proud telling people about this job 31 51 18 0 0
The work process here is slow 16 50 23 9 2
Satisfied with job in Bangladesh 27 52 21 0 0
G. Analysis of the Open Ended Questions:

This is a summary of the candid views and perception of the respondents to the following open-ended questions: 1) Description of a Bangladeshi by the respondent using three character attributes and 2) How the business operation here is different from the respondent’s country.

Most respondents agree that a typical Bangladeshi is friendly and cooperative (49%). This attribute is followed by hardworking (18%), helpful (16%), hospitable (9%), honest (7%) and talented (7%). This is to be noted that most of the same respondents added similar adjectives as above to describe their Bangladeshi counterparts. Beside these attributes, a few of the expats have characterized Bangladeshis as simple, relaxed, flexible, enthusiastic, respectful and religious. It is interesting to note that, most Indian Diasporas have quoted us as spendthrift, openhearted, kind and of soft nature. Few respondents hailing from UK specified us to be family and religion oriented and highly sensitive to own culture; love eating out and dressing up for occasions.

On the flip side, Bangladesh people are perceived as talkative, conversationalist, loud, interfering, curious, immensely opinionated, lazy, unskilled, corrupt and political savvy.

From the perspective of work structure and methods, Bangladeshis counterparts whatever be their role and status in the organizations are perceived as unique on the following parameters: a wide practice of non-professional work practices based on inter-personal relationship, less structured and more regulated where last minute changes are normal, emotion ingrained in everything that is done and tend to override organizations’ targets and objectives, extreme unpunctuality regarding time management and no sense of urgency seem to work even at pressing condition and not to mention the widespread corruption and unethical practices across all types of the organizations. Moreover, both management and owners tend to work in ill structured organizational settings with high government intervention and bureaucratic control.

Looking closely to their remarks, it can be said that most expats had in fact given their opinions by comparing their own cultural attributes with that of Bangladesh, and henceforth these are some of the specific findings of the survey:

- Most Americans say the Bangladeshis have immense respect for people.
- Most Indians believe Bangladeshis are spendthrift.
- Most Pakistanis say we are honest and sincere
- Europeans believe we are not structured and organized with most things we do.
- Most Sri Lankans and Danish believe we lack transparency and honesty with what we do.
- Chinese counterparts believe we are unskilled and unprofessional and tend to exaggerate when we describe people and incidents.

V. CONCLUSION

This paper has been written to explore the factors by which the expatriates are able to adjust to the life and work in Bangladesh which would not only increase their work efficiency but also would reduce the chance of premature end of their overseas assignment. The expats who received cultural training upon arrival in Bangladesh are unlikely to terminate their contract prematurely, and thus, the companies who hires expats should design cultural adjustment training programs for them. As most of the expats think learning Bangla would help to better adjust with the life and work in Bangladesh, such training program should also have a component for understanding the local language.

Though, most the expats have at least a few friends, they feel lonely as they also feel lack of entertainment facilities available for them. As far as the expats are concerned, the working environment needs a lot to improve as they think those as non-professional, interpersonal relation based, less structured and more regulated, lacking time management and urgency. Organization taking these matters into consideration seriously will not only improve their organizational efficiency but also get the best results from the expats they hire for knowledge and skill transfer. However, this paper would also like to suggest the corporations, especially to the local ones to have an industry-university dialogue so as to reduce the dependency on the foreign expats, as the country is over burden with a considerable educated unemployed. (47% educated unemployment rate)²

ACKNOWLEDGMENT

The authors would like to express their gratitude to the following volunteers who helped in interviewing the expatriates and collecting the data: i. Israt Jahan, ii. Kazi Tanbin Haque Orin, iii. Ariful Islam, and iv. Mashjida Nusrat.

² Special Report of the Economist Intelligence Unit (EIU), 2015, (Source: http://www.thedailystar.net/is-graduate-unemployment-rate-really-47-22302)
REFERENCES


Abstract - The primary objective of every power plant owner is to get constructed and to operate his plant as cost-effectively as possible to maximize his profit. This means that he has to minimize – besides the investment costs for construction - the life cycle costs, which are influenced by different factors. One of them is the operation and maintenance (O&M) cost incurred in course of operation period of the power plant. The power plant utilities are further driven to reduce their life cycle costs by the deregulation of the different power markets. Cost reduction by outsourcing of operation and maintenance (O&M) activities is one opportunity to meet such requirements. This paper shall give an overview of the O&M Services operated by different plant shown on different examples in Bangladesh as well as the approach to customize services in compliance with different clients and market requirements.

Keywords - Operation & Maintenance, Outsourcing O&M services

I. INTRODUCTION

The quality of human life depends to a large degree on the availability of energy sources. However, the present dependence on the fossil-fuel (petrol, gasoline, diesel, oil, coal or gas) based energy systems draws the major concerns in terms of high emission of GHGs and also due to the running out of these sources gradually. If the current rate of energy consumption is continued, the limited reserves of coal, oil and natural gas may last only for 122, 42 and 60 years respectively. In an assessment report, it was observed that the global fossil carbon emissions have increased from 2000 million metric ton/year to 7000 million metric ton/year within only 50 years between 1950 and 2000. The present annual worldwide power consumption has already attained an annual level of 14 terawatts and is expected to double in the next few decades due to the increase in world population and the rising demand of energy in the developing countries. This unique blend of experience and technical knowledge is the basis upon which power plant operations and maintenance (O&M) services can help plant owners maximize availability, profitability and safety performance.

II. STRUCTURE OF OPERATION AND MAINTENANCE

A. Operations

1) Administration: To ensure effective implementation and control of operation activities.
2) Conduct of Operations: To ensure efficient, safe, and reliable process operations.
3) Equipment Status Control: To be cognizant of status of all equipment.
4) Operator Knowledge and Performance: To ensure that operator knowledge and performance will support safe and reliable plant operation.
B. Maintenance

1) Administration: To ensure effective implementation and control of maintenance activities.
2) Work Control System: To control the performance of maintenance in an efficient and safe manner such that economical, safe, and reliable plant operation is optimized.
3) Conduct of Maintenance: To conduct maintenance in a safe and efficient manner.
4) Preventive Maintenance: To contribute to optimum performance and reliability of plant systems and equipment.

III. O&M MISSION STATEMENT

Another useful approach in soliciting management buy-in and support is the development of an O&M mission statement. The mission statement does not have to be elaborate or detailed. The main objective is to align the program goals with those of site management and to seek approval, recognition, and continued support. Typical mission statements set out to answer critical questions – a sample is provided below:

1) Who are we as an organization – specifically, the internal relationship?
2) Whom do we serve – specifically, who are the customers?
3) What do we do – specifically, what activities make up day-to-day actions?
4) How do we do it – specifically, what are the beliefs and values by which we operate?
5) Finally, how do we measure success – what metrics do we use, (e.g., energy/water efficiency, safety, money savings, etc.?)

IV. MEASURING THE QUALITY OF OPERATION AND MAINTENANCE PROGRAM

1) Capacity factor: Relates actual plant or equipment operation to the full-capacity operation of the plant or equipment. This is a measure of actual operation compared to full-utilization operation.
2) Work orders generated/closed out: Tracking of work orders generated and completed (closed out) over time allows the manager to better understand workloads and better schedule staff.
3) Backlog of corrective maintenance: An indicator of workload issues and effectiveness of preventive/predictive maintenance programs.
4) Safety record: Commonly tracked either by number of loss-of-time incidents or total number of reportable incidents. Useful in getting an overall safety picture.
5) Energy use: A key indicator of equipment performance, level of efficiency achieved, and possible degradation.
6) Inventory control: An accurate accounting of spare parts can be an important element in controlling costs. A monthly reconciliation of inventory “on the books” and “on the shelves” can provide a good measure of your cost control practices.
7) Overtime worked: Weekly or monthly hours of overtime worked has workload, scheduling, and economic implications.
8) Environmental record: Tracking of discharge levels (air and water) and non-compliance situations.
9) Absentee rate: A high or varying absentee rate can be a signal of low worker morale and should be tracked. In addition, a high absentee rate can have a significant economic impact.
10) Staff turnover: High turnover rates are also a sign of low worker morale. Significant costs are incurred in the hiring and training of new staff. Other costs include those associated with errors made by newly hired personnel that normally would not have been made by experienced staff.

TABLE 1

<table>
<thead>
<tr>
<th>Metric</th>
<th>Variables and Equation</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Availability</td>
<td>%= Hours each unit is available to run at capacity/Total hours during the reporting time period</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>Schedule Compliance</td>
<td>%= Total hours worked on scheduled job/Total hours scheduled</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>Emergency Maintenance Percentage</td>
<td>%= Total hours worked on emergency jobs/Total hours worked</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Maintenance Overtime Percentage</td>
<td>%= Total maintenance overtime during period/Total regular maintenance hour during period</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>Preventive Maintenance Completion Percentage</td>
<td>%= Preventive maintenance completed/Preventive maintenance scheduled</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>Preventive Maintenance Budget/ Cost</td>
<td>%= Preventive maintenance cost/Total maintenance cost</td>
<td>15% - 18%</td>
</tr>
<tr>
<td>Predictive Maintenance Budget/Cost</td>
<td>%= Predictive maintenance cost/Total maintenance cost</td>
<td>10% - 12%</td>
</tr>
</tbody>
</table>

V. ADVANTAGES & DISADVANTAGES OF OUTSOURCING O&M SERVICES.

A. Outsourcing Advantages

The biggest advantage of outsourcing a power plant’s O&M program, of course, is its flexibility. Outsourcing enables a power plant manager to recruit and dissolve a large workforce quickly - reducing an in-house O&M workforce can be a considerably more difficult task. Moreover, ability to fluctuate worker use to meet exact day-to-day facility needs is an important benefit. A power plant manager can be benefited by permitting the use of
fewer workers per year to perform a given amount of work. He can eliminate the employment of full-time personnel to handle peaks. He also permits the scheduling of seasonal work requirements to take advantage of seasonally good weather and eliminates seniority concerns, since contract workers must compete with fellow workers to retain their jobs. The service receiver can provide a power plant manager with services beyond normal O&M tasks, including: additional supervision as needed for the provided services; intermittent supervision in specialty areas such as critical equipment inspection, and repair; and, in some instances, job planning and estimating, equipment tests, construction drawing takeoffs, and so forth. Most importantly O&M service receiver enables an authority to replace the contractor or phase the power plant’s O&M work into an in-house organization. It requires less training of contract service personnel as well as less time than typical facility O&M employees to reach a given level of work performance efficiency and passes on to the contractor the responsibility for essentially all or a significant part of a facility’s O&M services, leaving the power plant’s key personnel more time to concentrate on overall plant management.

B. Outsourcing disadvantages

After determining and evaluating all the benefits of outsourcing O&M work, a power plant manager should then consider a number of pitfalls and problems, including:

1) Trade and craft union jurisdictional lines: Service contractors generally follow union jurisdictional lines, except in emergency situations, or where there are “right to work” laws in the state where the work is performed. Trade and craft performance restrictions rigidity varies from contractor to contractor, and from project to project - because different people are involved.

2) Industry competition: Power plant managers should not control overtime and O&M contracts, because in some regions, facilities O&M personnel will be attracted to construction work by substantial overtime opportunities, by offers of supervisory positions, and by special deals or incentives on the part of construction contractors.

3) Wage rates: If the cost of contract labor gets too high in relation to facility in-house labor rates, power plant managers cannot, or will not, be able to afford the need for contract O&M services, and therefore must carefully monitor regional construction wages vs. facility O&M wages.

4) Peak staffing: During periods of heavy construction work in a geographic area, normally the only way an O&M contractor can attract substantial numbers of personnel for facilities work for relatively short periods of time is to work overtime - enough to meet or exceed overtime that is being worked on construction projects, or to pay higher than normal union or area hourly wage rates, or both.

5) Specialty support: Some O&M contractors cannot provide sufficient skills supervision, or trades-people/crafts-people, (or both) with reasonable support backup.

VI. METHODOLOGY

The primary information required for the report is collected through direct interaction with the interview of different people working on Different power plants. Secondary data have been collected from relevant books, newspapers, journals, magazines, company annual report, and other relevant papers. The study is based on a descriptive research. The methods of the research has been used is survey with structured questionnaires and observation. Customer satisfaction has been considered as the dependent variable in the research. The price, service quality, performance, reporting, expertise of the employees of service providers and commitments has been considered as independent variables.

TABLE II
VARIABLE TYPES & SEGREGATION

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Variable Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td></td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
</tr>
<tr>
<td>2. Service addition.</td>
<td>3. Service quality.</td>
</tr>
<tr>
<td>5. Communication.</td>
<td>7. Communication frequency.</td>
</tr>
</tbody>
</table>

The approach towards identification of the problem, i.e. why customer satisfaction is coming down, is based on the answers of the following questions.

TABLE III
SCALE USED FOR THE SURVEY

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely agree</td>
<td>9</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>8</td>
</tr>
<tr>
<td>Agree</td>
<td>7</td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>6</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>5</td>
</tr>
<tr>
<td>Somewhat disagree</td>
<td>4</td>
</tr>
<tr>
<td>Disagree</td>
<td>3</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>2</td>
</tr>
<tr>
<td>Extremely disagree</td>
<td>1</td>
</tr>
</tbody>
</table>

VII. RESULTS
Data has been collected through personal interviews from the employees of both O&M service contractors and service receivers of different power plants through mail and direct contact. To find the root causes and provide possible remedial suggestions, the following questions were asked to the respondents. The scale has been used is a constant sum scale where the higher the number, the better the value carried by the variables. Considering,

SA = Service Appeal, P = Price, SA = Service Addition, SQ = Service Quality, C = Competitiveness, COM = Communication, CF = Communication Frequency OSD = Operator’s skill and dedication, TWAD= Total weight Achieved by each descriptors.

<table>
<thead>
<tr>
<th>Responses</th>
<th>Weight Carries for Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>P</td>
</tr>
<tr>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>TWAD</td>
<td>105</td>
</tr>
</tbody>
</table>

From the data, it is observed that mainly three factor are playing a negative role for the service to be continued with the service receivers for company. They are:

A. Price
B. Service Quality
C. Operators Skill and dedication.

VIII. DISCUSSION

A. Price

In terms of pricing, the outsourced company should be more competitive. In this case, they are using market penetrating pricing strategy. They offer very low price with respect to their competitors. As a result, they cannot pay sufficiently to their internal people, which in further de-motivating them to be dedicated. Furthermore, most of their service receivers think the lower the price, the lower the service quality. Therefore, their price should be more competitive.

B. Service Quality

The outsourced company should work hard to improve service quality in terms of availability, reliability, equipment, facilities etc. If other two factors work well, naturally it can be hypothesized that service quality will also improve.

C. Operator’s Skill and Dedication

To improve operator’s skill and dedication, company should motivate their employees. To do that they can follow the followings”

1) Conduct annual training reviews, possibly as part of annual performance reviews. The O&M leadership team should provide input to the supervisory staff on training needs and goals.
2) Develop an individual training plan and budget for each facility staff member using in-house resources as well as outside classes, conferences, and seminars that focus on energy-efficient building operation.
3) Arrange training for O&M members in control logic that optimize energy-efficient operation. For example, certain sensors (such as the mixed air sensor and the supply air sensor) are more calibration-critical for preventing energy waste than others. Therefore, staff should clean and check the calibration of these sensors more frequently than other sensors.
4) Training for management-level facility staff should include contract and energy-related financing such as performance contracting, negotiating under utility deregulation, arranging service contracts, and equipment leasing.
5) Increase some financial benefits such as salary, leave encashment, incentives, performance bonus, best employee of the month etc.

IX. CONCLUSION

A well-functioning services sector is the key to the overall economic performance of the outsourced company and to the welfare of its people. Reform of services sector policies provides an important opportunity for policy makers to strengthen employment, productivity and innovation. It will also help in strengthening the capacity of company economies to adjust to economic globalization in services and to the growing importance of services for the future growth of company’s economies. This is important since seizing the new growth opportunities in the services sector will be possible only through a comprehensive strategy based on a policy mix that is suited to each country or circumstance. Moreover, a more productive services sector also underpins better performance of other sectors, notably the manufacturing sector, as this increasingly relies on support and inputs from efficient and cost-effective producer services. While not all services sectors have expanded and some have declined in size, the overall impacts of reform have been very positive. Enhancing the performance of services will require further consideration by policy makers of company. In areas where best policy practices are still
being developed, it is important that owner tread carefully and avoid actions that could harm service sector growth. Moreover, further improvements in the knowledge and statistics about the drivers of performance in different services sectors of company would help in developing, monitoring and evaluating suitable policies.

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Evolution of hiring practices in the mobile telecom industry in Bangladesh over the past decade

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Abstract - Telecommunication makes the whole world in a small village and by using this service life become more comfortable and easier. This sector plays a vital role in the economy of Bangladesh occupying the top positions among others. But recently this sector faces some crisis related to governmental SIM tax, corporate tax and also the competition in the market. The purpose of this study is to explore general recruitment practices in the mobile telecom industry in Bangladesh and how it is changing with time. This paper discusses how several factors like technological advancement, the growth of market competition, outsourcing, diversification of women empowerment, economic changes in the country, youth leadership programs have been influencing hiring practices into different mobile telecom companies in the country during the last decade.

Keywords - Recruitment, human resource, changes, mobile telecommunication, Bangladesh

I. INTRODUCTION

Telecommunication is an important sector of any country which can play essential part in the country’s economy [1]. The mobile telecommunication industry has turned into a dynamic key area for financial development in several countries around the world [2]. Infrastructure, maintenance, improvements, recruitment and training of personnel are stimulating an intense global competition that warrants a fair compensation to the human capital. The exponential growth of communication technologies, the social phenomena of integration, and the need to go deeper into globalization, constitute a mechanism that must maintain a balance between development and maintenance of human resources in a suitable way.

Back in 1997, around 70 countries representing nearly 90 percent of the world’s telecom businesses signed an ambitious agreement in Geneva, pledging to open their respective markets to international competition [3]. There were, of course, the great emporiums: The United States, Canada, the European Union and Japan. However, there were also present countries that have been reluctant to this opening, such as Brazil, the Philippines, India or Colombia. The most prominent absentees were China and Russia. This agreement, under the auspices of the World Trade Organization, was achieved after several years of hard negotiations, initiating a revolution in one of the already most dynamic sectors of the world economy. In fact, what that agreement achieved was to consolidate a noticeable trend in the countries that have led the process: Great Britain, New Zealand, and the United States [4].

Until recently, telecommunications have been characterized by the predominance of companies under monopoly that have operated under cartel conditions to inflate the prices of their international services. Competition among telecommunication monopoly and private companies brought several changes into the handling of Human Resources, being appropriate to explore general recruitment practices in the mobile telecom industry. What is needed is a better approach to help the poor, an approach that involves partnering with them to innovate and achieve sustainable win-win scenarios where the poor are actively engaged and, at the same time, the companies providing products and services to them are profitable [5].

Alternative strategies will need to take less conventional directions that will have substantial implications for business models and business strategies in emerging and developed markets alike. [6].

A. Objectives: The objective of this research is to explore general recruitment practices in the mobile telecom industry in Bangladesh and how it is changing with time. This paper discusses how several factors like technological advancement, growth of market competition, outsourcing, diversification of women empowerment, economic changes in the country, youth leadership programs have been influencing hiring practices into different mobile telecom companies in the country during the last decade.

B. Limitations: As a part of research limitation, the persons whom we interviewed for primary data they felt reluctant to provide the proper information. Most of them asked not to include their name into this research study for reference.
The upcoming trend in global telecom is offering the opportunities in other countries and showing the significant signs for realizing the value for entering a new market through utilitarian method. These utilitarian methods might have different directive procedures and the purposes, possible entry strategy; joint venture, licensing, acquiring national player or the fully own subsidiary. Telecom market has kept on presenting the opportunities for generating the high volume of revenue and certain sectors predict the overall substantial growth. [10]

At present there are six mobile operators in our country. According to the number of subscribers and profitability Grameen phone Ltd is in the top position among six operators. Except teletalk though their local names are Grameen phone, Banglalink, Aktel, Warid, Citycell but their main companies are the world’s famous and big organization. They have invested a lot and also they have more plans for investment. There is no doubt that their key objective is to earn profit. Government should create an environment and principles for profit. Besides these government should preserve consumer’s right. [11]

Telecommunication markets have changed dramatically in recent years. Customers in many countries who used to have only one service provider now have a wide variety to choose from. The fight to attract and keep customers has resulted in the development of marketing strategies. [12]

The total number of mobile phone subscribers in Bangladesh is 129.584 million until the end of the end of February 2017. There are six different companies operating in Bangladesh at this moment. In terms of subscribers, Grameen phone Ltd (GP) tops the list with over 59.306 million subscribers; Banglalink Digital Communications Limited is placed second with 31.309 million, Robi Axiata Limited (Robi) third with 27.017 million, followed by Airtel Bangladesh Limited (Airtel) in fourth. Teletalk Bangladesh Ltd. (Teletalk) ranks fifth with (8,219 million), Pacific Bangladesh Telecom Limited 3.733 million is sixth. Citycell was unable to generate the Sub-Base Report to Bangladesh Telecommunication Regulatory Commission (BTRC) because of some Technical Difficulties [11]. In terms of revenue (2015-2016), Grameen phone Ltd (GP) tops the list again 108.8 billion BDT, Robi is placed second 51.55 billion BDT, Banglalink third 43.6 billion BDT, following Airtel fourth 14.9 billion BDT, Teletalk fifth 9.8 billion BDT and CityCell sixth 722 million BDT [12].

The telecommunications industry experienced unprecedented employment gains in the latter half of the 1990s and into early 2001, growing by 36 percent from January 1996 to March 2001. This fast-paced growth was fueled largely by changes in Federal regulation, the anticipated demand for telecommunications products associated with those changes, and with rapidly developing technology. The subsequent employment downturn, one signal of the end of the “tech boom,” was large and quick. The industry regrouped and changed its focus to new and emerging technologies as consumer demand for telecommunications services shifted from traditional landline based services to emerging wireless services. Telecommunications shed 25.3 percent of its employees from the March 2001 peak through 2005 [8].

The Telecommunications Act of 1996 greatly influenced employment in the telecommunications industry after its performance, changing the regulatory policy of telecommunications as the first major overhaul on communication issues. Its main goal was to “let any communications business compete in any market against any other [9]. That act made possible the access to telecommunications, enhancing the sector in a way that made possible to be the starter of the globalization as we currently understand it.

II. LITERATURE REVIEW

Telecommunication is the transmission of signs, signals, messages, words, writings, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems. Telecommunication occurs when the exchange of information between communication participants includes the use of technology. It is transmitted either electrically over physical media, such as cables, or via electromagnetic radiation. It includes many technologies such as radio, television, telephone and mobile telephony, data communications, computer networks or the Internet. Many of these technologies, which were borne out of the need to satisfy military or scientific needs, have converged in uniformity, focused on a non-specialized consumption called information and communication technologies, of immense importance in the daily lives of people, companies, institutions, State and the political[7].
Mobile phone sector is the top sector for foreign investment and source of government revenues. Enormous investment is made as well as government earns huge revenues from this sector. The position of Bangladesh in attracting the foreign investment is not in satisfactory level. But Bangladesh is one of the top ten countries in the world for investment in this sector. From 1997 to June 2008 total investment in this sector is Tk. 229.56 billion. [1].

The various fees and taxes that the government levies on the industry are very high. Operators also must pay spectrum charges when renewing their licenses. The 2G (second generation) licenses of four mobile operators that expired in November 2011 were not immediately renewed because the operators objected to the unduly high spectrum charges and the ambiguous way they were computed. The operators brought the matter to the High Court and although some of the cases are still pending, the licenses were renewed in August 2012, after MOPT and the Ministry of Finance intervened. These fees have made it very difficult for the operators to be profitable. [13].

IV. METHODOLOGY

In the preparation of the methodology I have used the current needs of telecommunications companies, which are characterized mainly by high dependence on information systems. Besides that, this industry is characterized by high flexibility and competition and compressing of the corporate strategy timeline. The grounded theory of business analysis defines the specifics of the telecommunications industry, focusing on the very specific description of the procedure for collecting the sample data and following the rule of thumb as it were. A blend of Primary and secondary data was used. The research was mostly qualitative.

The study has been conducted through the personal interviews of 5 academicians who were previously contributing to the mobile telecom industry in Bangladesh and very much knowledgeable about recruiting trends of the companies. 7 current and former employees from different mobile telecom operator companies have also been interviewed personally and an email survey comprising a set of open-ended questions was used to collect more information and investigate the present and past scenario of hiring practices in the industry. The study is explanatory in nature which is based on in-depth interviews and secondary data sources.

V. HIRING PRACTICES IN MOBILE TELECOM INDUSTRY IN BANGLADESH

Recruitment refers to the process of attracting, screening, and selecting qualified people for a job at an organization or firm. It is initiated by recruiters. It also may be engaged by an employment agency or a member of staff at the business or the organization is looking for recruits. To find the right kind of candidates, recruits must work closely with hiring managers throughout the recruitment process [14].

In Bangladesh perspective, many companies do not follow any specific process for recruitment and selection. There are lots of limitations a company face in case of recruitment and selection process. But the recruitment and selection process must be developed, modern and fair. Future employers will demand not only increased skills and high-performance workplace practices but also a more flexible workforce. Labor market experts believe that nontraditional workers—people who work in alternative arrangements such as on-call workers, independent contractors, temporary help or leasing agency workers, as well as contingent workers [15].

Basing on the telecommunication sector where huge demands were, GP Human Resource Management has played vital role in providing energetic, efficient and effective labor force. The department has evolved over the years. It has introduced modern and innovative ideas in Human Resource Management; a simple example is the recruitment through internet [14].

When recruiters’ select entry-level candidates, they concentrate more on pro-activeness, creativeness, ideas which related with the job posted. At the time of Selection process, the recruiters collect CV to create a CV bank. Mostly, there’s an interview and a written exam, if the candidates miss then the officers try to inform them. HR selects candidates from a pull of application so that they can choose most suitable candidates.

VI. MAJOR CHANGES IN RECRUITMENT PROCESS IN MOBILE TELECOM INDUSTRY IN BANGLADESH (FINDINGS)

1. **Technological advancement**: Telecommunication industry is one of the biggest means to hold the communication among people these days. Gone are those days of an old phone with wire, with the invention of mobile phones there is a boom in this industry as more and more people got attracted and associated with this industry. New businesses are open both on small as well as large-scale. The advancement in the field of technology brought high-speed broadband facilities and its usage is increasing the revenue of the countries worldwide. Many companies are learning that where they place their digital bets can have a profound impact on their overall business performance.
Telecommunications companies worldwide found a strong correlation between profit margin and five select areas of IT: robust customer analytics, digitization of order management, self-service customer relationship management, a simplified IT-application landscape, and automation of IT-infrastructure management. These factors are playing a pivotal role in the hiring practice in telecommunication industry these days. References in his interview stated that “At the beginning the hiring was done by collecting resumes manually and the information were all kept in an excel file. However, with time the things became more automated and software are more used.”

2. Growth of market competition: Intense competition has arisen in this sector because of the removal of monopoly rights from the state-owned mobile phone services. In Bangladesh, there are new telecom companies cropping up. This creates competition and thus the hiring process changes with time. The companies were previously trying for penetration and now when the market is saturated, they are now taking a hard turn on the hiring process. Now the market has become saturated and there is hardly any need for new recruitment as no new task is at hand. Rather, there is a need to reduce headcount because of redundant wants. For this reason, the companies are not recruiting like before [17].

3. HR outsourcing: A widespread practice these days is to outsource jobs to 3rd party organizations. Telecom companies in Bangladesh are also getting adapted to such trend and thus the number of employees is being cut down as the skilled people are doing multiple tasks at the same time. Nowadays the hiring in telecoms is significantly reduced because the market is in the saturation phase. All the companies are trying to outsource and trying to get rid of the heavy heads under voluntary retirement schemes, they are trying to cut down jobs of the big heads. They are trying to reduce their HR [18]. The big heads are getting paid more than their job. Whereas, a skilled employee with a much lower salary would have done twice the tasks assigned to him. Reference [18] asserted that “HR outsourcing was introduced within Bangladesh in around 2006 or 2007. Citycell was the first to outsource call centers in 2010. Then the others followed. Citycell started this trend because the revenue was decreasing. In 3rd party call centers, Citycell could get manpower for around 8000 BDT (currency of Bangladesh) salary whereas then minimum salary was 22 thousand BDT.”

4. Diversification of women empowerment: Prioritizing the male applicants over the females was a widely practiced trend even a few years back. However, it is changing now. Due to government’s various initiatives to encourage women empowerment, women are getting equal opportunities everywhere which ultimately are helping more female talents to come out. This is where diversification of women empowerment is coming along. The mobile telecom industry is also hiring equal number of female employees as male. However, female employees sometimes cannot be deal with similar or equal terms as male employees have as they might have special needs that include maternity leave, pick and drop service for night shift etc. Companies need to formulate their policies keeping these issues in account. As such, the hiring practices in mobile telecom industry have been changed due to this diversification of women empowerment.

5. Economic changes in the country: The economic condition of Bangladesh is gradually improving. The lifestyle of people has become upgraded, annual income has risen significantly and as such standard of living has gone up. Now, 89% of the total population has a cellular device to communicate. People are willing to pay higher for services now. Therefore, more skilled and multitasking employees are sought by the mobile telecom companies. Mobile companies are giving preference to those employees who are more talented, smarter and dedicated to serve the continuously growing customer base. This improvement especially in the economic field in Bangladesh is playing a key role in the change of hiring practice of telecom industry in Bangladesh.

6. Youth leadership programs: Regarding young talent and leadership programs, there were no leadership programs in the past, but in 2008 and 2009, the telecom companies came up with concept called Youth Leadership Program. There are two types of career track - one is on leadership career, and another one is on developing certain skills and expertise. So, the employees can be specialized and thus this program helps them to nurture the leadership qualities among them. Youth leadership programs are giving a chance to young people to come and show their potential. This lets them understand the field to a depth as well. A platform
is given to the young people in general so that they can show their talent and the telecom companies will get their potential employees from there. Hence telecom companies are now also focusing on hiring competent employees with leadership qualities.

VII. FUTURE OF HIRING PRACTICES IN TELECOM INDUSTRIES (CONTRIBUTION / IMPLICATIONS OF THIS STUDY)

From this study the companies of telecom industry will be able to take more accurate decisions while conducting HR operations in light of future possible hiring trends. The following hiring practice inclinations are emerging to help attract top technical talent and deal with a future for companies who need to hire IT professionals.

1. Creation of high technology work: During the creation of these new high-tech jobs, most current jobs will endure, albeit in altered form. Skills will need updating as technology introduces innovative ways of completing age-old tasks [19].

2. An Increase in Transparency: Top technical employees have requested greater transparency for years and it looks like they’re finally getting what they want. More employers are expected to be upfront about compensation and benefits this year so that IT candidates can have all the information before they decide to apply to a position, which will prevent wasted interviews and save both companies and potential employees some valuable time [20].

3. Security Skills will be a Must-Have: The organizations are in need to hire specialized cyber security professionals. Demand for skills of safety will increase, and the supply of guard talent is shortening [21].

4. The Importance of Online Profiles and Code Examples will increase: More hiring managers are paying attention to potential employees on a digital basis. IT specialists are aware of this, and a lot of them are passing up their online profile to present employers with further insights into their talents and abilities.

5. The gender pay gap will continue to shrink: Inclusion, political intentions, and social changes reveal that the gender pay gap is narrowing. Companies are making paces to correct this thanks to changing attitudes and increased awareness. The gender pay gap is demanded to continue to shrink in the IT industry.

6. Status Updates: Many organizations have done away with the tradition of rejection letters and have experienced backlash from potential employees. Inadequate treating of candidates can impact the ability to attract top talent and earnings [22].

VIII. CONCLUSION

Mobile phone sector is one of the most promising sectors in Bangladesh for foreign investment. The Bangladesh market seems to be very reasonable & prospective for cheap working labor cost and the need to establish communications all over the country makes this country a potential market full of opportunities. However, because of market saturation in the mobile telecom industry in Bangladesh, all of the companies are barely recruiting new employees. The mobile network operator companies were formerly striving for infiltration and now when the market is immersed, they are taking a hard turn on the recruitment process. The process became tougher and competitive and the percentage of recruiting new employees into the companies is decreasing day by day. In this situation, the study investigates that there are several factors related to the certain changes in the overall hiring practices. We found several factors such as technological advancement, growth of market competition, outsourcing, diversification of women empowerment, economic changes in the country and youth leadership programs, these attributes are influencing the recruitment process of the mobile telecom companies over the last decade and this study describes the attributes with proper evidence to depict the scenario of current hiring practices and changes over years. Further studies could be conducted by considering other attributes like transformation of training and development process, vertical and horizontal shift of demand in applicants’ skills and some others contingent factors.

REFERENCES


APPENDIX

A. Questionnaire for personal interviews and e-mail survey:
1. What are the major changes in the recruitment process you have been experiencing over years? In which areas?

2. What have technological changes been integrated into the hiring practices in the mobile telecom industry in Bangladesh over the past years?

3. In which area the company outsources Human Resources functions? Is the rate of outsourcing increasing or decreasing? Why?

4. What facets of growth of market competition have been influencing the hiring practices in the past years?

5. How several economic factors (market growth, FDI, government policy, changes in income, wages etc.) affect recruitment process?

6. What are the changes in training and development programs over the past years?

7. Can you identify the changes in the skills, abilities, qualifications required in a candidate?

8. How the company plans global employment? What are the changes in this area?

9. As women’s participation in workforce has been increasing, has this segment brought up any change in general hiring practices? If yes, how?

10. Your observation about current hiring trends. What will be the future of hiring practices in telecom industries in Bangladesh?

B. Additional questions:

1. Share your experience with the overall hiring process of the company. How do they recruit employees? What methods do they use?

2. How candidates used to apply in vacant positions when applying online wasn’t available?

3. How have job responsibilities been changed over years?

4. What sources do you use for recruiting candidates? Mention the changes over times.

5. Who are the stakeholders participating in the interview session? Then and now

6. Local employees into top level management (Then and now).

7. How government and legal issues brought changes in the hiring process in different time?

8. How total compensation system affects recruitment process? Depict the changes considering related issues.

9. In your experience, which benefits/perks attract the employees mostly? Any significant changes in benefit packages

10. Can you indicate the influences of young talent/leadership programs?

C. Demographic profile:

Name: _________ (Optional. If the name is given, it can be used as a reference.)

Current Organization: _____ (Mandatory)

Current Job Position: ______ (Optional but filling up this option would be appreciated)

Job Duration: ____ (Mandatory)

Previous Organization: ___ (If applicable, not mandatory)

Job Position: ______

Job duration (in the previous org.): _____ (not mandatory)

Additional info: ____ about yourself (not mandatory)
Why SMEs in Developing Countries Should Go International? : A Perspective of Affinity International Ltd.

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Abstract - Considering the recent decade, SME, Small-Medium sized Enterprises are at the limelight in the countries which are developing; taking Bangladesh as an example. Economic and political instability, low level of technological development, lack of availability of highly skilled labors, etc. led the entrepreneurs to engage in this sector. One of them is Affinity International Limited which started their journey in 2009. Affinity is one of many SME that entered the pre-dominated Pharmaceutical Industry. Affinity Limited aimed to find a possible market gap in the supply chain of pharmaceutical industry of Bangladesh. They became an indenting firm that engaged in indirect import of excipients. However, their local business did not seem feasible, thus they quickly decided to go international and indent high quality APIs and raw materials. The main strategy of Affinity was to catch the attention of global pharmaceutical giants by importing high quality products. They mainly became business partner with China and India and then sold their products to local giant companies like Square, Incepta, Popular, Healthcare pharmaceuticals. This is actually a common scenario for the most of the SMEs in Bangladesh that, they have to find globalization strategies very soon after being started their journey so that they do not become obsolete in the market. Those who can adapt and redesign their internationalization strategies fast can cope up with the dynamic market and others fade away.

Keywords – Affinity, SME, internationalization.

I. INTRODUCTION

Now a day Small-Medium sized Enterprises (SME) have become very popular in developing countries especially in Asian countries. In India, SMEs accounts for 80% of all enterprises and are also contributing 35% of productions of exportable goods\(^1\). Similar to India, SME are also the dominant form of business organization in Bangladesh. According to the National Private Sector Survey of Enterprises in Bangladesh (2003) conducted by the International Consultancy Group (ICG) of the UK, in collaboration with the Micro Industries Development Assistance and Services (MIDAS), there were approximately 6 million Small and Medium Enterprises (SMEs) and the percentage is increasing day by day\(^2\) (See Table 1). As a result now there is a very high density of SMEs in the industrial economy of Bangladesh and because of this high density, new SMEs do not get proper opportunities of doing business with conventional products. So, maximum of them move for globalization where they create new scopes for doing business with new products. Active internationalization provide the SMEs opportunity to increase their resources by reaching new markets. Affinity international Ltd. is one of those SMEs who are using these opportunities and conducting business in international market. Mainly they are one of the intermediaries in pharmaceutical sector in Bangladesh.

Shimon and Islam are two friends who Co-founded Affinity Ltd. Since childhood they had a dream of starting their own business. As soon as they came of their age, both of them seriously engaged themselves to materialize their dream. With the help of Mr. Shimon’s father they started a SME with the name of Affinity LTD. But it didn’t work out well due to the established companies’ rule over the market, political barriers, very less amount of profit all these factors made Shimon and Islam doubt their decision. So they changed their game plan and went for globalization. To their immense pleasure they found that it is really going well for them. They realized many other local businessmen are facing the same problems as them. They wanted their story be told and let others know of how something small can also go big and as long as someone has passion for their work it is possible for to make their dreams come true.

Background:
In Bangladesh, SMEs are really hitting off for the last few years. By SME we mean Small-Medium sized Enterprises. According to National Industrial Policy 2010, any firm employing less than 10 workers are micro enterprises, 25-99 workers are small enterprises whereas a medium enterprise employs 100 to 249 workers in Bangladesh\(^3\). The main reason for SMEs to be so popular is that it is easier to start a small business. For a country like Bangladesh, where economic and political condition are far from stable, low level of technological development, lack of availability of highly skilled laborers it is best suited to focus on SME. Additionally the risk that has to be taken if the project fails is also relatively smaller. Moreover, as it employs fewer workers so per head cost is low which helps in adding to the profit. All these reasons are egging the new entrepreneurs of Bangladesh to get more involved and interested in this sector.

Although SMEs are increasing day by day but it is still hard to find many SMEs in pharmaceutical sector in Bangladesh. This is because the giants like Square, Incepta, Beximco, Opsonin, Renata are so established and has conquered the market so well that it hardly gives other company to prosper much in this sector\(^4\). Even so many intermediaries are coming up and trying their level best to
survive and progress. And one of such intermediaries is Affinity international Limited.

**TABLE I**

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth Percentage of Small Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>7.69</td>
</tr>
<tr>
<td>2002-03</td>
<td>7.21</td>
</tr>
<tr>
<td>2003-04</td>
<td>7.45</td>
</tr>
<tr>
<td>2004-05</td>
<td>7.93</td>
</tr>
<tr>
<td>2005-06</td>
<td>9.21</td>
</tr>
<tr>
<td>2006-07</td>
<td>10.28</td>
</tr>
</tbody>
</table>

Source: Bangladesh Economic Review 2006-2007

Affinity International Ltd. was founded by Mr. Muzaffor Hossain Paltu (father of Shimon) in March, 2009. However, it is mainly because of MD. Moidul Islam (Director, Business Development) and Zaffar Hossain (Managing Director) hard work and passion that has enabled Affinity to prove in every sense of how a small local company can go big. Its game plan was to become the bridge between manufacturer and API supplier and provide pharmaceutical raw materials, API and bulk drugs to the local pharmaceutical companies. For easier understanding, Affinity provided the pharmaceutical companies the ingredients needed to make medicine. Initially, it started locally with only four members including one pharmacist. They struck deals with local importers and engaged in indirect import of raw materials of medicine and supplied the excipients to pharmaceutical giants like Square Pharma and Beximco Pharma. At the beginning they only supplied different flavors (used in cough syrups and medicines) to local pharmaceuticals. But gradually they have evolved and is now working hard on third generation products like biopharmaceuticals, anti-cancer products and so on. However this is not an easy task. There are many criteria that are needed to be fulfilled if one wants to work on pharmaceutical products. Such as, to preserve medicines it needed to be kept under a particular temperature (which differs from medicine to medicine), packaging and labeling performance qualification study has to be done, storage and movement of material between two sites need to meet the standard operation procedure, amount of time needed to bring product etc. Affinity has been working hard to meet all this specification and give their customer the best quality products.

With the help of latest technology, Affinity has been able to reduce the distance and has created a smooth and effective communicating channel between finished product manufacturer and API supplier. Using e-commerce Affinity has been able to give and take orders from various manufacturers. They are now working with the top-notch pharmaceutical companies of our countries like Beximco, Incepta, SQUARE, Healthcare pharmaceuticals.

**Internationalization:**

In March of 2009 Affinity Limited, aimed to find a possible market gap in the supply chain of pharmaceutical industry of Bangladesh. They discovered a way to source excipients for local companies. This market was predominated by local suppliers of conventional raw materials of medicine. Nonetheless, they managed to strike deals with local importers and engaged in indirect import of raw materials of medicine.

Affinity performed their operation only when the chemical importers called for the raw material delivery service. Therefore, they did not have any direct contact with the pharmaceutical industries. In the beginning, Affinity delivered products of the German company BASF. However, after 6 months the local market for indirect import became heavily competitive and their business plan did not seem feasible. As a result, Affinity decided to divert their approach, instead of doing indirect import they choose to go for a more direct approach.

The pharmaceutical market is a vast and fast paced market where new medicines and their ingredients are constantly developing and are high in demand. During this period, the pharmaceutical titans of Bangladesh were fiercely competing and had a continuous need for a lot of pharmaceutical raw materials, Active Pharmaceutical Ingredients (API) and bulk drugs. However, managing such an enormous supply array of raw materials was too much for even the big guns. This was a massive opportunity which the founders of Affinity Limited pounced on. They revamped their business model and dedicated their effort towards import of Active Pharmaceutical Ingredients (API). Affinity chooses to work stay from conventional raw material and instead work on new and upcoming materials in demand like API, excipient and Bio-tech products.

In 2010, Affinity settled to serve as an indenting company to work as a bridge between manufacturer and API supplier. They prepare the pro-forma invoice for their clients and then the clients open a LC from their suitable bank and select the product they want to purchase. Affinity primarily started to focus on providing seamless, cost effective communication channel between Finished Product manufacturer and API supplier.

The founders of Affinity always had a vision to go international and make a name in the international market. As they went global they changed their name to Affinity International Limited. They chose the English name (Affinity) instead of a Bengali corporate name, as a part of strategic decision to make Affinity a major global competitive force.

In the years following 2010, Affinity International Limited obtained raw material manufacturing clients from India and China, who have Certification of Suitability by European Directorate for the Quality of Medicine (EDQM) and European Union Good Manufacturing Practice (EUGMP). On the other hand, Affinity continued their supply operation with local Pharmaceuticals. This how they internationalized their company and built a firm global network.
Global Network:
Md. Moidul Islam, Director of business development of Affinity International, noted that if he wanted to make his company recognized internationally, he had to maintain a lot of patience while passing the initial period of struggle to find work, to inform them that there was a company like his [6]. Working with local pharmaceuticals helped them a lot to gather experience and to show the name of their company to the international pharmaceutical market. At the very first phase of their journey, they contacted with Mitford Bangladesh to collect foreign products like Colidron from Germany, which they stocked after their own fulfillment and Affinity bought those products to sell them to local companies. Six months later the idea for changing their initial business pattern knocked their mind. They decided to decrease their product line and increase the quality, which would make them available only for some pharmaceutical giants. After starting their company in 2009, they never stopped their knocking to companies which ultimately opened the door for them after three years. For this they not only used internet to contact them but also made sure to let their presence be known to all by attending as more international fairs as possible. These fairs helped them to make international contacts which bought great results for them.

In 2012, they first got their international order from Incepta to work with an Indian pharmaceutical company Neutra Care pharmaceutical Co. ltd. Incepta proposed them that they would work with them by deferred LC. Therefore Olmesertol was their first ever product launched in Bangladesh. As Incepta does all the chemical experiment issues by themselves, they did not have to think about the source approval. Finally, after that they did not have to look back anymore. Initially they started getting offers from pharmaceuticals of India and China. Intas pharmaceuticals, Nanogen pharmaceuticals, Suzhou Tianlu biopharmaceuticals, BrightGene-bio chemical technology Co. ltd are some of their prominent manufacturers and suppliers with whom they are currently working.

They started importing active pharmaceutical ingredient, excipient, nutraceutical and herbal product, veterinary product etc. Once they had succeeded to bring any product by fulfilling all the paper works, approvals from DG drugs and the stability test, they did not have to face this hassle for the second time or more. For the second time this product can enter our market just by only passing the QC test. Though they worked with both of the large emerging market, they preferred India more than China. Again, it’s a reminder that countries always find it easier to trade with neighboring countries in case of globalism. Affinity’s Pharmacist partner helped them a lot by letting them know what was really going on the pharmaceutical market. In exchange Affinity informed them about the products they will work on each year.

Md. Moidul Islam always kept them updated with the latest product available at the market and decided to work with only some of the products which are costly and qualified, and is affordable by only the pharmaceutical giants. Being enthusiast about their future in international market, Moidul Islam said, “There was a time when we used to sit hours to meet the company executives. We were chasing them to give us a chance. And now it is them who contact us to get their job done. We do not chase them anymore. That is how the table turns.” Now the ideas about their marketing mix will portrait the whole picture about their company’s operations.

Affinity’s Marketing Mix:
Affinity International Limited viewed their clients as their partners rather than as a customer. They always thought from the client's point of views and listened to the clients’ needs with sincerity. They worked hard to provide best quality and that resulted to win the trust and satisfaction of their customers. Affinity had specific segments in terms of selling and buying. In terms of selling, they had a small segmentation. As they worked with new and emerging products and these products required much researches and facilities and the price of those products were also high, so, not every pharmaceutical company in Bangladesh could afford these. So their major customers were top pharmaceutical company who graved good portions of market shares in the markets [5]. Again in terms of buying, they had also a specific segment. They only contacted with those international companies who had proper certifications like GMP, ISO etc. and maintained a non-negotiable quality standard [5] (See Table II).

i. Products:
Affinity international mainly engaged in business with new and emerging products. They supplied Active Pharmaceutical Ingredient, Excipients, Biotech Product, Nutraceutical & Herbal product and Veterinary product.

<table>
<thead>
<tr>
<th>TABLE II</th>
<th>AFFINITY’S CLIENTS AND SUPPLIERS LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAJOR CLIENTS LIST</strong></td>
<td><strong>MAJOR MANUFACTURERS &amp; SUPPLIERS</strong></td>
</tr>
<tr>
<td>➢ Incepta Pharmaceutical s Ltd.</td>
<td>➢ Zibo Weibin Imp. &amp; Exp. Co. Ltd.</td>
</tr>
<tr>
<td>➢ Beximco Pharmaceutical s Ltd.</td>
<td>➢ Intas Biopharmaceuticals Ltd.</td>
</tr>
<tr>
<td>➢ Popular Pharmaceutical s Ltd.</td>
<td>➢ Nanogen Biopharmaceuticals Ltd</td>
</tr>
<tr>
<td>➢ SQUARE Pharmaceutical s Limited</td>
<td>➢ Suzhou Tianlu Bio-pharmaceutical Co., Ltd.</td>
</tr>
<tr>
<td>➢ Healthcare Pharmaceutical s Limited</td>
<td>➢ BrightGene Bio-Medical Technology CO., Ltd.</td>
</tr>
<tr>
<td>➢ YanchengHengsheng International trade Co. Ltd.</td>
<td>➢ Run Shaanxi Days of Biological Technology Co., Ltd.</td>
</tr>
</tbody>
</table>
They were less engaged in doing business with conventional products as they were lots of firms who were already doing business with those conventional goods and there was a less scope to grow business with those products. But sometimes they delivered some conventional products for some specific or core customers to meet their client’s preferences.

It was not easy to do business with new products in any markets, especially in pharmaceutical industries where a new pharmaceutical product had to go through a long evaluation process before being commercially launched. Firstly, Affinity supplied the sample of the product to their clients. The clients ran a quality control test on the sample. If they were satisfied, then they ran a development test to check the stability of the products. If they were also satisfied with development test, then they decided to commercially launch the product. This whole process took almost two years. Presently they are dealing with 23 products (See Table III) which successfully overcame those evaluation processes and commercially launched and many products are still on different evaluation processing stages.

**ii. Place:**

Affinity International Limited mainly worked as an intermediary between the international suppliers and the local buyers. They mainly worked for the commission. They did not import any products under their own names. Even if they did not open a “letter of credit (LC)” by their own name. They always imported goods under their client’s name. Affinity did not store any product. When the product came from foreign country, it was directly delivered to the clients. Affinity took the help of different courier service for delivering the products, like World Courier, FedEx, DHL etc. They mainly communicated with their clients and suppliers through mail. They had one corporate office which is situated in Shantinagar, Dhaka.

**iii. Price:**

As an indenting company, Affinity International Ltd. work as an intermediary between the supplier and the buyer of API, Fine Chemicals, Biotech, Herbal, Veterinary Product and other industrial chemicals. But “How the company set the prices for these goods?” posed a vital question. As Islam & Shimon mentioned, Affinity international Ltd. set the prices of imported products and raw materials or gathered from another local company, according to the demand and affordability of both the supplier company and the client (buyer) company and got its share in a commission basis. Unlike of the other companies in other sectors; this is how the company charged of their goods as an indenting company. Actually, the process of setting up the price was two-way negotiation; interpreting the process: if the supplier company said they could afford to supply 1 unit of goods for currency of 10, then the Affinity International Ltd. asked the buyer whether they could afford it. If the company agreed then Affinity International Ltd. confirmed the deal. But this process varied if the buyer company said that they could afford currency of 7 for 1 unit of goods then again Affinity International Ltd. had to negotiate with the supplier company. If they accept the offer then the deal is carried on, but if they deny it then the deal is cancelled.

Again, Islam & Shimon regarding tax issues noted that, the company did not have to face any such difficulties when they imported the goods and the raw materials because the supplier company from whom these goods were imported actually took care of the tax issues.

**iv. Promotion**

Islam & Shimon also clarified us that, for promotions Affinity International Ltd. did not need any special effort to the foreign companies from whom it is imported or even if they accumulated the raw materials and goods from any local company, they just contact the supplier and

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**TABLE III**

**AFFINITY’S PRODUCT LIST**

<table>
<thead>
<tr>
<th>No.</th>
<th>Product Name</th>
<th>Origin</th>
<th>No.</th>
<th>Product Name</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mint Flavor</td>
<td>Spain</td>
<td>13</td>
<td>Etanercept</td>
<td>India</td>
</tr>
<tr>
<td>2</td>
<td>Enoxaparin Sodium</td>
<td>China</td>
<td>14</td>
<td>Rituximab</td>
<td>India</td>
</tr>
<tr>
<td>3</td>
<td>Ursodeoxycholic Acid</td>
<td>China</td>
<td>15</td>
<td>St. Johns Wort</td>
<td>China</td>
</tr>
<tr>
<td>4</td>
<td>Palonosetron</td>
<td>China</td>
<td>16</td>
<td>Ginkgo Biloba</td>
<td>China</td>
</tr>
<tr>
<td>5</td>
<td>Fondaparinux</td>
<td>China</td>
<td>17</td>
<td>Silymarine</td>
<td>China</td>
</tr>
<tr>
<td>6</td>
<td>OlmesartanM</td>
<td>India</td>
<td>18</td>
<td>Spirulina</td>
<td>China</td>
</tr>
<tr>
<td>7</td>
<td>Erythropoietin alpha</td>
<td>India</td>
<td>19</td>
<td>Panax Ginseng</td>
<td>China</td>
</tr>
<tr>
<td>8</td>
<td>Interferon alpha</td>
<td>India</td>
<td>20</td>
<td>Dextrose Anhydrous</td>
<td>China</td>
</tr>
<tr>
<td>9</td>
<td>Filgrastim</td>
<td>India</td>
<td>21</td>
<td>Sodium Chloride</td>
<td>China</td>
</tr>
<tr>
<td>10</td>
<td>Peg Filgrastim</td>
<td>India</td>
<td>22</td>
<td>Potassium Chloride</td>
<td>China</td>
</tr>
<tr>
<td>11</td>
<td>Peg EPO</td>
<td>India</td>
<td>23</td>
<td>Tri-Sodium Citrate</td>
<td>China</td>
</tr>
<tr>
<td>12</td>
<td>Ranibizumab</td>
<td>India</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Company profile, 2017
the buyer company and created a bridge between them.

Actually it worked like this, Affinity International Ltd. gathered the requirements of the raw materials that the buyer company needed and knowing that the company (Affinity International Ltd.) contacted the potential supplier company and thus they fulfilled the needs of the both supplier and the buyer parties.

Furthermore, there were various global strategies that the SMEs like Affinity International Ltd. could undergo to back their marketing mix.

Global Strategy:

Affinity has been serving the pharmaceutical industry for a long time and working with renowned overseas principles in worldwide and has strong relations with them. The main strategy of Affinity was to catch the attention of global pharmaceutical giants by importing high quality products.

Their clients directly imported from foreign companies and they just made all necessary arrangements, which are mainly the paperwork, to get their job done. One of their strategies was also to act as an intermediary; this is because since pharmaceuticals were manufacturing thousands of products it became quite impossible for them to directly deal with other companies for individual product. So this is when Affinity stepped forward to act as an intermediary for business.

In addition, another vital aspect for Affinity was, their focal point was always on importing new quality and costly products, so they endeavor to bring raw material for cancer cures and different kinds of flavors for the giant companies.

On top of that, the companies who wanted source approval from DG Drugs, Affinity provided this service to them as well. Though there are some companies like Incepta Limited who manage themselves, but if any company wants Affinity to perform it they can provide it at their best.

Apart from their pharmaceutical raw materials, API, and bulk drugs being indented through a well-organized overseas network, good friendship with hundreds of professional & outstanding manufacturers in India, China & worldwide (See fig. 1), Affinity had this desire to expand their network extensively. Their primary strategy was to provide seamless, cost effective communication channel between finished product manufacturer and API supplier. Therefore, Affinity was very much committed to deliver the world’s class serviced to satisfy their customers on both ends of Pharmaceutical Supply Chain. Having all the drawbacks, amongst the challenges SMEs like Affinity International Ltd. in Bangladesh faced abundantly, few of them were managed to be pinpointed.

Challenges:
The road to success was rather steep for Affinity. First of the many challenges that Affinity faced was managing credit terms in local market. They used to deliver the excipients from local importers to their powerful clients like Beximco, Square etc. These clients used to set credit terms of approximately three months. However, in reality they used to pay them back after six or more months. Problems like this not only questioned their ability to generate any profit but also their chances of survival.

The next hurdle Affinity faced was during the processing of their legal documents and licensing. According to Islam and Shimon, the Government offices of Bangladesh are too bureaucratic and processing time is painfully slow.

For importing APIs and raw materials a firm will need to get a source approval from the government by submitting the profile of the foreign manufacturing firm. The red tape structure of the government offices stood out to be one of the biggest barriers to trade for Affinity. As a result, it took them longer to go global than they expected.

The biggest trouble for Affinity was the harassment they had to go through in the international customs office. In Bangladesh there is no clear importing policy for small firms like indenting firms. And sometimes Affinity had to bring chemical samples that were similar in appearance to narcotics. Thus, the customs officers used to feed upon these opportunities and flood Islam and Shimon with various threatening questions along with cutting open some of the samples which made the sample valueless.

Conclusion:

In a world where surviving is tough and no one’s there to help, Affinity International Ltd. gives hope to all other local SMEs. Though Affinity was able to pull themselves together in this battle, but still there is big war ahead of them. Would they be able to survive in that war by following these strategies only? Or do they need to come up with more changes? Will they be able to establish themselves in more advanced market or is this the end for them? With so many questions in our mind we can only wait and hope for the best.
References


Notes

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Exploring the Adoption Behavior of Technology Driven Services by the Rural Consumers in Bangladesh

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Abstract: This study particularly aims to identify factors that are affecting rural consumers’ behavioral intention to use various technology driven online based services. A total of one-hundred and four rural consumers were surveyed with the self-administrated questionnaires, followed by in-depth interviews in a village, locally known as Dollar Bazar, under Savar district. Initially, a total of ten manifest variables, primarily adopted from prior studies, were encoded in SPSS for deriving factors through EFA technique. Studies confirmed that rural consumers of Bangladesh prefer to have an attractive graphical interface of a particular online based services, accompanied by short training facilities provided by the service provider. This study can further be extended by exploring the relationship between the identified factors and intention to use (ITU) in a CFA simulator. The essence of the research may contribute to the existing literature related to technology adoption.

Key words and phrases: Perceived Attractiveness, Perceived Interaction, Intention to use, rural consumers

I. INTRODUCTION

Information Technology in a form of various online services such as money tracking services of Western Union, has created copious opportunities for today’s dynamic digital consumers. As a result, people rely mostly on technology driven products and services to fulfill their needs. Nowadays, people tend to transact online banking rather than off line, shop online rather than in-store, watch movies online rather than go to the theater. This emerging technology and its associated products and services have also expanded its wings to the rural community in which people usually love to live green, eventually turning them into digital consumers. However, this transformation has received very limited attention in various scholarly studies[1]. Through this study, an attempt has been made to examine the key influential factors affecting Bangladeshi villagers’ intention to use online money tracking system in a simulated environment. This study is considered the initial stage in which we are simply incorporating a limited number of manifest variables to convert symptom into several latent variables.

II. LITERATURE

Hitherto, not much studies have been conducted to investigate or identify various factors affecting rural consumers’ behavioral intention to use various technology based products and services. Technology acceptance model(TAM) solely proposed by Davis [3] to determine factors that influence unbanked rural communities to adopt mobile banking services in Zimbabwe. Study confirmed that factors, namely relative advantages, personal innovativeness, and social norms along with the original TAM constructs had a direct effect on intention to use (ITU) [2]. Furthermore, [4] examined the adoption behavior of agriculture technology in Ethiopia. Through their result, they concluded that cooperative members of a particular society can play an important role in accelerating various technologies. [5] Identified factors causing in shopping behavior in rural trade areas. In their study, three variables had been identified such as demographic and lifestyle, socioeconomic attitude, and attitude towards local retail facility. In Bangladesh, the Technology Acceptance Model has been applied by [8] to understand farmers’ behavioral intention to use ICT based Microfinance, later on the same model had been applied in China for describing Chinese farmers’ behavioral intentions to adopt P to P based online lending platform. However, both studies identified factors such as Occupation Relevancy, Innovativeness, self-efficacy and social influence as the key factors describing the overall adoption behavior of rural consumers.

III. METHODOLOGY

A total of one-hundred and four respondents were surveyed with a self-administrated questionnaire in a village known as Dolla Bazar, located in Manikganj district by a trained research assistant, who was nominated by the lead researcher. This study followed purposive sampling technique for which all sample units were sampled based on their technical knowledge and skill about cell phone and internet. All individuals were
provided with a short demonstration of the process of generating money tracking confirmation report of Western Union via smart phone on the available mobile phone network along with a printed flowchart before participating in the survey [6],[7]. In some cases, copies of questionnaires were distributed among respondents with the help of a trained research assistant in the study area. Consequently, the respondents who have a little education were briefed and instructed in local language by the research assistant, finally, research assistant ticked the selected option on behalf the respondent.

Research questionnaire was divided into two parts; part one and part two. Part one of the questionnaires was consisted of some basic questions related to respondents’ demographic information while part two of the questionnaire was comprised of 10 categorical questions anchored with the manifest variables adopted from prior studies related to IT/IS adoption such as UTAUT, TAM published by renowned journals. All items which were originally written in English, were translated into the Bengali language. During the survey, which was followed by a couple in-depth interviews and FGDs (these were conducted between July 2016 and January 2017), each chosen individual was asked to fill out the standard and structured questionnaire indicating their responses in a seven-point Likert Scale ranging from (1) Strongly Disagree to (7) Strongly Agree for each statement.

Collected data were coded into SPSS for Exploratory Factor Analysis followed by Reliability analysis (Cronbach’s alpha) in order to measure the internal consistency of the retained components.

IV. RESULTS

1. Demographics of the respondents:

Demographics data reveal quite fascinating picture about the respondents of this study who were primarily rural villagers, over 62% of them were male, and the rest were (37%) female. Majority (41%) of the respondents were aged between 30-39 years old whereas 38% of the respondents were aged between 20-29 years old. In addition, 16% of the respondents were aged between 40-49 years and the rest (5.6%) were above 50 years old. Majority of the respondents (42%) passed secondary level of education. 28% of the respondents passed higher secondary level while 29% of the respondents completed graduation and post-graduation level. Majority of the respondents (60%) had computers at home. Surprisingly, the majority of the respondents (52%) were connected to the internet. Furthermore, 84% of the respondents owned various branded smartphones.

2. EFA Result:

Table 1: KMO and Bartlett’s Test

<table>
<thead>
<tr>
<th>Source: Estimated result</th>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</th>
<th>Bartlett's Test of Sphericity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Approx. Chi-Square</td>
</tr>
<tr>
<td></td>
<td></td>
<td>df</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig.</td>
</tr>
<tr>
<td>In table 1, the calculated value of KMO Measure of Sampling Adequacy is 0.862 which exceeds the standard cut point of 0.50. Similarly, the Bartlett’s Test of Sphericity is significant at 0.000(P&lt;0.001). It proves that the dataset is suitable for conducting factor analysis.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Communalities

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, interaction found lower than the initial cut point, therefore, eliminated from the dataset. Furthermore, 85% of the variance in explained by the variable namely, “Enjoyment, In addition, 74% variance in “Easy to learn”, 72% of the variance in “Convenient” and “Attraction” is accounted for.

Fig 1 shows a graphical representation of all calculated eigenvalues against all factors. Based on the graph placed above, it can be seen that only two components can be retained since there are two major turns can be observed. 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, two components were extracted and retained.

Table 3 Total Variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sum of Squared Loadings</th>
<th>Rotation Sum of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
<td>Total % of Variance</td>
</tr>
<tr>
<td>1</td>
<td>5.131</td>
<td>57.013</td>
<td>5.131</td>
</tr>
<tr>
<td>2</td>
<td>1.280</td>
<td>14.218</td>
<td>1.280</td>
</tr>
<tr>
<td>3</td>
<td>0.757</td>
<td>8.748</td>
<td>3.557</td>
</tr>
<tr>
<td>4</td>
<td>0.514</td>
<td>6.461</td>
<td>3.707</td>
</tr>
<tr>
<td>5</td>
<td>0.424</td>
<td>4.707</td>
<td>3.638</td>
</tr>
<tr>
<td>6</td>
<td>0.327</td>
<td>3.638</td>
<td>3.547</td>
</tr>
<tr>
<td>7</td>
<td>0.236</td>
<td>2.618</td>
<td>3.131</td>
</tr>
<tr>
<td>8</td>
<td>0.182</td>
<td>2.024</td>
<td>2.864</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis. Source: Estimated result

As shown in table 3, it can be stated that the two retained components explained over 71% of the variance while the remain eight components explained nearly 34% of the variance in total. So, it is quite rational to retain two components for this study.

Table 4: Rotated Component (Orthogonal) Matrix

<table>
<thead>
<tr>
<th>Rotated Component Matrix*</th>
<th>Component</th>
<th>Perceived Attractiveness (Interface)</th>
<th>Perceived Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attractiveness(Interface)</td>
<td>855</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment(Operation)</td>
<td>841</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accomplishment of the task</td>
<td>825</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to learn(Interaction)</td>
<td>794</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to remember(Knowledge)</td>
<td>725</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convenient(Interface)</td>
<td>832</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to use(Interface)</td>
<td>789</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fast and quick(Interaction)</td>
<td>751</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User friendly(Interface)</td>
<td>750</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


From the above table 4, it can be summarised that the total nine manifest variables are classified and distributed under two retained factors and finally renamed as Perceived Attractiveness (PA) and Perceived Interaction (PI). Perceived interaction can be explained by four observed variables whereas perceived attractiveness can be explained by five observed variables. Finally, reliability analysis was conducted for the two retained factors. As shown in table 5, it can be concluded that the two retained factors have high level of internal consistency since each calculated Cronbach’s Alpha is greater than .70.

Table 5 Reliability Statistics (Retained factors)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach's Alpha</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Interaction</td>
<td>.829</td>
<td>4</td>
</tr>
<tr>
<td>Perceived Attractiveness</td>
<td>.905</td>
<td>5</td>
</tr>
</tbody>
</table>

V. DISCUSSION

Perceived Interaction (PI) is the degree in which consumers perceived knowledge by interacting with a system while Perceived Attractiveness (PA) is the graphical interface of a system. Evidence found that, both PA and PI are playing crucial role in describing the adopting behavior of technology based services by the rural villagers in Bangladesh. Furthermore, it is not evident to claim that the variables, such as PA, PI, ITU are correlated or Intention to Use of an online services is influenced by PA or PI in Bangladesh, unless more studies are conducted.

VI. CONCLUSIONS, AND DIRECTIONS FOR FUTURE RESEARCH.

This study attempted to identify factors that affect rural consumers’ intention to use various technology driven products and services in Bangladesh. This study was initiated in a local village locally known as Della Bazar in Savar district under Dhaka. Study deployed various research instruments such as questionnaire, FGD, and in-depth interview. Study examined ten manifest variables, primarily derived from prior literature and studies. Furthermore, total nine manifest variables were encoded in SPSS for multivariate analyses, one variable were eliminated because of not exceeding the standard indicators. Lastly, two factors were extracted and retained in line with the standard indicators and renamed as PA (Perceived Attractiveness) and PI (Perceived Interaction).

Findings of the study can be an important outline for companies such as telecom operators, financial institutions, value-added services(VAS), content developers for developing informatics tools and strategies for rural consumers. The essence of the research may also contribute to the existing literature as to technology adoption.
This study can further be extended by one of the following ways; one, more manifest variables should be incorporated in order to explore more meaningful factors. Two, the relationship among PI, PA and ITU should be explored by applying Pearson Correlations. Three, the effect of PI, PA on ITU can be measured by applying OLS (ordinary least squares) method.

References


Further readings


Insights into Plastic Litter Collection and Recycling Practices in Bangladesh: A Qualitative Study

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Paper ID:ICBM-17-495

Abstract- The consumption of plastic products in Bangladesh has been increasing at a rapid pace due to the wide range of its applications from households to industries. This ever rising trend in plastic consumption is leading to plastic waste in municipal areas which is in need for proper management, disposal and re-use. The collection of plastic waste and its recycling procedures (mechanism) is a mandate for any country, especially in a developing country such as Bangladesh, as plastic products are designed to have a short lifespan but may last decades or even centuries. Recycling plastic has been proven difficult and uneconomical in Bangladesh due to cost of collection, separation, sorting and washing. At present, plastic litter is mainly dumped in the landfill sites along with various types of organic and inorganic waste while a nominal percentage is collected through informal sector for recycling. This paper addresses the current scenario of plastic litter collection and recycling practices in Dhaka, Bangladesh. The study employs qualitative research using observation and interview techniques of various litter management hubs such as landfill sites, public gathering places etc. This implication of this paper may serve policy makers to understand the current scenario and devise interventions by revamping the supply chain model or devising a comprehensive business model via resource to achieve economic and environment sustainability.

Keywords: plastic litter, sustainability, recycling, supply chain management

1. INTRODUCTION

Plastics are lightweight, durable and inexpensive materials that can readily be molded into various products. Because of the unique properties, plastic materials are used in a wide range of applications from households to industries in Bangladesh. As a result, the production and uses of plastics in Bangladesh have increased in last three decades at a rapid pace. Subsequently, the need for reuse, recovery and the recycling of plastics takes on a massive importance. The contemporary plastic recycling industry is immense in scope which presents both opportunities and challenges. Plastic recycling refers to the process of recovering waste or scrap plastic and reprocessing the materials into functional and useful products, sometimes in entirely different form from their previous state [9]. The goal of recycling plastics is to maximize economic gain and hence to reduce high rates of plastic pollution while putting less pressure on virgin materials to produce brand new plastic products, conserving energy and preventing plastics from getting into the oceans. Therefore, recycling is one of the most preferred plastic waste management options we have. For attaining the necessary information, understanding how sustainable plastic waste management use of various types of plastic products will be judicious in understanding current situations. Before recycling, plastics are sorted according to their resin identification code (e.g: Appendix 2 Table 1) . After recycling, the recycled resins are reprocessed into marketable plastics products (e.g: Appendix 2 Table 2). The objective of this study is to understand the current scenario of plastic Litter collection and recycling practices in Bangladesh and hence to identify probable gaps in existing plastic recycling supply chain.

II. LITERATURE REVIEW

The total global production of plastics grew from around 1.5 million MT in 1950 to 311 million MT in 2014. Post-consumer plastic waste collection reached 25.2 million MT in 2012, an increase in comparison to 2011. Plastics consumption rate in Europe, nevertheless, is around 60 million MT/ year. There are promising signs in the growing collection and recycling activities around Europe. Today the recycling industry plays a significant role in Europe’s move towards a sustainable society. Recycling processes are very often hampered by: inseparable composites of polymers use of unnecessary additives or by combining plastics with other materials like: paper, metal, fibers in a way that that does not allow for an easy separation[8]. In 2014, 25.8 million MT of post-consumer plastics waste ended up in the waste upstream. 69.2% was recovered through recycling and energy recovery processes while 30.8% still went to landfill and almost 8 million MT of plastics waste were landfilled in Europe [9]. Considering the per capita consumption of plastic in 2014 was 3.5 kg, national consumption of plastic in Bangladesh was amounted to be about 545,300 ton and total plastic waste which was available for recycling was about 50,213 ton. This indicates that only 9.2 percent of total plastic consumed in the country in 2014. Hence
a large part of landfill plastic waste remains outside the purview of waste management which cause damages to the environment. The whole supply chain of recycling of solid waste lacks proper management and operation. There is absence of a holistic approach particularly from the sustainable waste management point of view. In contrast to other developing countries, there are no specific laws, rules and guidelines for municipal waste management in Bangladesh [4]. Many household waste collection schemes – either capturing plastics waste alone or together with other materials – exist in Europe. These systems should share the same objective to maximize recovery of recyclables and recover value from waste by diverting this valuable resource from landfilling. Collection schemes are aligned with downstream infrastructure for pre-treatment, sorting, and recovery to maximize recovery, improve environmental performance and manage costs [7]. 95% of the value of plastic packaging material, worth $80-120 billion annually, is lost to the economy, and there could be more plastics than fish in the ocean (by weight) by 2050 [11]. According to International Solid Waste Association (ISWA), a shift in plastics production from the West to Asia has occurred: 40% by weight of world production is now in Asia, with 20% each in Europe and North America. China is the largest individual country at 24%. The drivers were increasing local demand and lower costs - mainly labor, but also their implementation in both manufacturing and reprocessing. This regional shift also drives the demand for used plastics. The annual volume of globally traded waste plastics is around 15 Mt, less than 5% wt. of the new plastics production in 2012. Such a small percentage suggests that to-date international trade is a minor means to extract their resource value. Europe collectively is the major exporter, with the world’s top 5 country exporters being Hong Kong SAR (re-exporting imported material to China), USA, Japan, Germany and the UK. The top world importers are: China at $6.1B and its SAR Hong Kong at $1.65B, followed by the USA, the Netherlands and Belgium. Plastic scrap flows from Western countries with established collection systems mainly to China, which dominates the international market, receiving around 56% wt. of global imports. Europe (EU-27) collectively exports almost half of the plastics collected for recycling (3.4 Mt, worth of €1.7B), corresponding to 12% of the entire post-consumer plastic waste arising. Europe depends entirely on China to absorb its exports (at least 87% of European exports end up in China). Between 2006 and 2012, plastic scrap imports in China increased from 5.9 Mt to 8.9 Mt., [10].

The assumptions and parameters that are used in the plastic recycling value chain model are based on a comprehensive literature review as well as taking expert opinions to ensure good representativeness of recycling figures, while ensuring the workability of the model. Plastic recycling value chain can be divided from the methodological point of view into the following overall operations: Collection, Sorting/separation, reprocessing (secondary raw material production) and product manufacturing (e.g.: Appendix 1) associated with people, process, profit and planet, the four dimensions of Quadruple Bottom Line (QBL) for Sustainable Prosperity.

**Collection of Plastic Waste**

Plastic litter recycling process starts from the collection of waste. Plastic litter from houses, industries, business organization, park, streets, commercial sources and other public gathering hubs is amassed in one place before proceeding to next stage. Systems that include collection of post-consumer plastic waste can be roughly divided into three overall categories-mono materials, multi-material and mixed municipal solid waste collection.

**Sorting of Plastic Waste**

Next process is sorting after collection. Different types of plastic like PET, PE, PP, and PVC are found to be mixed in one place. In this step plastic litter is separated into different groups and color to preserve the quality of recycled products. It can be done by manual or mechanical sorting.

**Shredding**

In this stage sorted plastic litter puts in shredder where it is converted into small flakes. At first, large size of plastic litter cut into small pieces which are done manually by using sharp knife. Then the small size pieces are fed into shredder manually or by means of conveyor belt. The shredder has blades rotating at high speed as it is operated with motor run by electricity which cuts plastic pieces in into flakes.

**Washing**

After the flakes are collected from the shredder they are put in a rotating drum along with water and detergent. The drum is rotating at a high speed by using motors which separates dust grease and oil from the flakes. The flakes are then dried either in sunlight or using hot air and finally packed in sacks for further processing.

**Pelletizing and End using**

After the plastic flakes are dried then they are further precede in two stages. One is they are directly used along with other materials and virgin materials in the production process. The other is they are put into extruder where they are melted then after they are drawn into strands which is passed over water cooled tank. They are converged toward pelletizer where the strands are cut into plastic pellets using cutting blade. The pellets are stored in sacks which are used later for other purposes.

### III. CONCEPTUAL FRAMEWORK
The dimensions of Quadruple Bottom Line (QBL) for sustainable prosperity can be aligned with the plastic litter value chain model defined as follows:

**People**
In every step, from plastic litter collection to recycling people involvement is obvious which will create a number of job opportunities. Waste pickers, waste sorters who now work individually and in unsafe condition could be drawn into main-stream work. As a result quality of life for people, e.g., health, vigor, wellbeing, flourishing must be considered for future sustainability.

**Profit**
Profit is the best index of sustainability in competitive markets. Without profit markets are not possible and without markets quality of life is weakened. The generation and distribution of profit are regulated in relation to their impacts on a quadruple bottom line for sustainable prosperity where competitive productivity in producing and distributing goods and services for consumption and profit with scarce resources. By products, after productive and scientific treatment can be used for making various types of products which will indeed decrease the import of virgin raw materials and make the final cost of product cheaper.

**Planet**
The whole world is much aware on the sustainability of the planet’s resources where individual, community, and ecosystems survival across lifespans and generations. Burning of plastic litter will release toxic elements in environment and uncontrolled dumping will release leachate in the ground which will make people sick polluting land, air and water. Implementation of successful plastic litter recycling value chain model can help achieving Sustainable Ecosystems.

**Partnership**
The recycling value chain of plastics is very diverse and includes multiple actors in each step of the chain, from collection, transport, dismantling, sorting (possibly several steps) and finally to recycling. The different stages of the chain affect each other.

In all aspects of the plastic litter recycling value chain people, profit, planet, and partnership are closely associated.

**IV. METHODOLOGY**

Dhaka is the capital of Bangladesh and it is the most densely populated municipality of the country. Therefore, rate of plastic waste generation is increasing daily with increasing number of citizens. So this study was carried out hoping that it will be aid in the plastic litter collection and recycling practice of the city. If plastic recycling can be effectively done in Dhaka city then that successful model can be launched in other municipalities of Bangladesh and the whole country will be covered eventually. The author has selected this city because it is the same area where he has been working and become familiar with this particular sector. As the study was conducted in Dhaka city, thus it will portray whole Bangladesh.

This is a qualitative study where both primary and secondary data has been used. For primary data an open-ended questionnaire was developed and respondents were selected from age group of 14-60 whom were interviewed face to face. For secondary data authors relied mostly on different journals, reference books, articles and various reputed websites. Study fields were mainly households, primary plastic waste collectors, middle dealer of waste, wholesale market of recycle plastic and recyclers. Interviews were taken by designing four questionnaires targeting the respective populations. Since it is a small scale study, face to face interviews were done on the following levels: 1) in meeting with 50 randomly selected households of Uttara, Khilkhet, Baridhara, Gulshan, 2) in meeting with 50 randomly selected households of Dhanmondi, Wari, Jatrabari, Khilgaon, Shahajapur 3) in meeting with 10 Primary Plastic Waste Collectors (Rickshaw Van Puller) and Waste Pickers (TOKAIS) at Dhaka City Corporation (Both North & South) collection points 4) with field visits to Middle Dealers (Vangari Dokan) in Islambagh, uttara, badda, Mirpur where open-ended interviews with shop owners and recyclables collectors (Feriwallas) were conducted. 5) in a visit of some plastic recycling factories and wholesale market of recycle plastic located in old town areas and open-ended interview conducted with respective owners and factory managers. As is it a qualitative study with open-ended answers; so no specific statistical analysis was done.

**V. FINDINGS AND DISCUSSION**

Literature reviews reveals that subsequent treatment with modern sorting and recycling technologies produces high quality resource streams with the required market-driven qualities for recycling and recovery. Recycling operations depend profoundly on production and consumption and China is the only country to extract the utmost benefit from it. Bangladesh can draw lesson from China.

Plastic litter collection and recycling challenge in Bangladesh is obvious to any spectator, mainly in Dhaka. With increasing number of citizen, rate of waste generation is increasing rapidly and Dhaka City Corporations (North & South) are responsible for gathering all types of co-mingled organic and inorganic waste from municipal collection points in the city’s different wards and for the disposal of waste in designated dumpsites without separating recyclable waste.

**Households**
Households pay to municipalities or private societies or welfare organizations who hire rickshaw van...
drivers for door to door collection of their waste and it leads to less littering, but does not play any significant role to sort and collect recyclable plastic litter. Out of 100 household respondents approached during interview of this study only 5 respondents replied that they sort plastic waste and used to sell recyclables buyers (Feriwallas), others only yield mixed waste. Therefore, handling of waste is nearly similar in every respondent’s house which is mixing all of them in same bin. This mixed waste is either picked up by Rickshaw-van drivers (Vangariwalas), or the household members bring them to municipal collection points themselves. In some cases, households dump mixed waste in streets, water bodies, open unused spaces and it will eventually be picked up by municipal cleaners.

Survey outcomes in Uttara, Gulshan, Baridhara, Dhanmondi, which can be designated as a middle-to-higher income zones, displayed that usually the maid (80% of households) or the caretaker (10%) are in charge of waste management at household level. They gather and store plastic litter and finally sell to waste pickers or recyclables buyers (Feriwallas). Most of the household family members admit this practice to permit maids or caretakers to earn extra income. In terms of volume and value of trash it is not enough to fuel the majority of households to separate recyclables as still major portion of organic and inorganic waste co-mingled and goes to landfill.

Rickshaw-van drivers (Vangariwalas) collect mixed litter, and separate some plastic litter with other recyclables which they sell in recyclables shops (Vangari Dokans,) and get some extra amount in addition to the salaries as given by the municipality or community. They bring the remaining waste to a designated municipal collection point, from where it is transported to the dump fill sites.

**Waste Pickers (TOKAI)**

During interview all of the 10 waste pickers unanimously responded that they collect recyclables from dumps, roadside, municipal collection points and other public gathering hubs without official permission. 6 out of the 10 respondents replied that they don’t get expected amount on selling mainly plastic litter and they used to sell 5 TK/KG to 15TK/KG based on plastic types and quality.

**Middle Dealers (Vangari Dokan)**

All middle dealers of plastic located in different places responded during interview that at first they sort different types of waste and they sort plastic waste according to the type and quality of plastic and used to sell recyclables buyers. 7 out of 10 respondents replied that they spend 5-15 TK/KG for the household and curbside as collected by the waste pickers and sell to the recyclers by adding markup (2TK-5TK/KG). They also added that they spend 50-70 TK/KG for buying industrial plastic and sell to the recyclers by adding high markup (10 TK-20 TK).

**Recyclers**

During field visit it had been observed that almost all plastic recycling factories located in Islambagh, Old Dhaka and run by traditional local technology at a dirty unhealthy environment where manual washing with dirty river water, manual sorting takes place regularly. During interview, four owners of several recycling factory replied that they used to buy plastic trash from middle dealers (Vangari Dokan) and direct from the industries. They spend 10TK/KG to 30 TK/KG for the trash as collected from middle dealers or other intermediaries whereas they spend 40 TK/KG 80/ KG for the industrial plastic waste. According to them industrial plastic waste can be recycled comparatively at lesser hassle and get premium price from the recyclables shops or from the direct manufacturer. While processing household plastic litter is time consuming, full of hassle and most cost involvement with less profit or sometimes incur financial loss. During field visit the author experienced that modern recycling process and technology are completely missing into the whole recycling process.

**Wholesale Market (Recyclables Shops)**

While answering the Interview 8 out of 10 respondents of recyclables shop owners replied that they always anticipate larger amounts of clean recyclables as a result from increased source segregation and they state that volume and money are not limiting issues to increase their trade volume and income. It was found from the field survey that the rate of different types of recycle plastic granule and flakes and the table below shows the value of different quality of plastic materials based on different available sources.

**Table 1: Value of different qualities of plastic (virgin and secondary raw materials). All values are given in BDT/25kg bag:**

<table>
<thead>
<tr>
<th>Plastic Type</th>
<th>Virgin Granule</th>
<th>High Quality from Source Separated and Fine Sorted Plastic (from Industry)</th>
<th>Average to Low Quality (from Households and Public Gathering Hubs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDPE</td>
<td>3200-3500</td>
<td>2000-2200</td>
<td>900-1000</td>
</tr>
<tr>
<td>LDPE</td>
<td>3000-3500</td>
<td>2000-2200</td>
<td>800-1200</td>
</tr>
<tr>
<td>LLDPE</td>
<td>3200-3500</td>
<td>2500-2800</td>
<td>800-1200</td>
</tr>
<tr>
<td>PP</td>
<td>3000-3100</td>
<td>2400-2700</td>
<td>800-1200</td>
</tr>
<tr>
<td>PET</td>
<td>3500-4000</td>
<td>2800-3000</td>
<td>800-1200</td>
</tr>
<tr>
<td>PVC</td>
<td>3200-3500</td>
<td>2200-2500</td>
<td>400-800</td>
</tr>
</tbody>
</table>

The table shows that the price of secondary raw materials is very much depending on the quality and the recycling of industrial plastic litter can produce high quality secondary raw materials. But the volume is very nominal. However, volume of mixed and dirty waste is much higher which eventually produce low quality secondary raw materials and thus cannot produce value added products. Presented results suggest that recycling already takes place at several levels via different stakeholders. But the system is not improved to ensure ultimate value creation.
Despite significant demand for recyclables plastic the sector is not able to improve their activities producing clean recyclables of higher value as source segregation and incorporation of upgrade recycling technology are completely missing from the whole value chain. In the current plastic litter collection and recycling practices there is huge scope for expansion at micro-level which will exploit the value of recyclables. Source segregation at household and other waste generating sources along with inclusion of appropriate technology into the plastic litter collection and recycling value chain will certainly improve the quality of recyclables, and thus increases their value. Thus, we can enjoy the ultimate benefits of plastic use whilst working to achieve economic and environment sustainability and iterate to develop better future solutions.

VI. CONCLUSION

In this present unsustainable economy the waste produced is a resource and should be re-injected into the economy. Switching from a linear to a circular model will quicken the positive changes in the waste sector which will definitely create significant impact on our lives. Development of the recycling processes also lies within in the power of education and awareness. Sustainable development concept should be encompassed at all levels of education, from elementary school to university levels. In order to exploit the secondary raw materials that Bangladesh has at hand, the following steps can be taken widely.

Information- Awareness campaigns and environmental education can be initiated at all level on the benefits of waste segregation at source for better life and the wider environment needs.
Regulations- Penalties on littering & open dumping can be a useful weapon for tackling carelessness of people.
Waste collection & sorting - Develop basic waste collection and source segregation infrastructure and cut down on waste leakage in transportation and landfills. The collection numbers as well as the quality of sorted waste need to increase. The quality of the sorted waste is one the first steps to increase efficiency of the circular economy which would have a cost impact on the rest of the cycle and help to improve financing of the system.
Mechanical recycling- The recycling capacity across country needs to be enhanced and improved via investments in the sector while incorporating state of the art recycling technologies such as product type sorting, color sorting, washing, metal detecting, shredding, pelletizing and other related machines and devices.

Higher recycling rates- Commercially viable waste treatment processes must be implemented which includes increased recycling infrastructure to capture more valuable segments of the plastic litter stream. The higher the targets the more inspiration there is to increase recycling rates which will positively influence the economy and environment. Tax and duty waivers, special electric charges with uninterrupted power supply for the recyclers can help achieving higher recycling rates.

Secondary raw materials market- The formation of a well-functioning secondary raw materials market needs to be facilitated and thus the circular economy can only be achieved. Consequently, the demand for recycled plastics needs to be increased by, for example, adding the minimum recycled content with the virgin raw materials to produce new products or else developing value added new products from recycled plastic granules.

Public private partnership- To truly reach long term, sustainable development goal, we must change how we use plastic and what types of plastic we use, as well as the processes used in its treatment and recovery. This means combination of regulations and incentives to galvanize the private sector into real change.

Taking together these steps with long term vision will bring us closer to the principles of the circular economy that will truly allow for value to be utilized out of the plastic trash stream. All stakeholders are required to work together to create the incentives necessary for this to materialize.

Bangladesh should take the lead on moving towards developing a more sustainable model which can be viewed from global perspective as the materials flows are global. Understanding about the challenges, opportunities and benefits of recycling while investing significant capital will quicken the transition towards circular economy and will help fighting existing waste management system inefficacies.

As this particular study was conducted with a limited span of time further studies are mandatory which address involvements to enable source segregation and collection or inclusion of suitable recycling technology and it will allow insights on viable technical preferences. That could be more appealing to all concerns, but also explore interactions among people of several levels and treasure suitable results.

REFERENCES


[8] Plastic Recyclers Europe (2016) – Plastics recyclers Europe 20 years later & the way forward making more from plastics waste


APPENDICES

2. **Table 1: Types and applications of plastic**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Types of Plastics</th>
<th>Common use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PETE</td>
<td>Polyethylene Terephthalate</td>
<td>Plastic soft drink, water, sports drink, beer, mouthwash, ketchup and salad dressing bottles. Peanut butter, pickle, jellies &amp; jam jars.</td>
</tr>
<tr>
<td>HDPE</td>
<td>High Density Polyethylene</td>
<td>Frosted milk, juice, cosmetics, shampoo, dish &amp; laundry detergent bottles, yogurt and margarine tubs.</td>
</tr>
<tr>
<td>V</td>
<td>Polyvinyl Chloride</td>
<td>PVC (or vinyl) is used to produce products such as pressure pipes, outdoor furniture, food packaging, shrink wrap, liquid detergent containers, etc.</td>
</tr>
<tr>
<td>LDPE</td>
<td>Low Density Polyethylene</td>
<td>Bread bags, milk pouches, grocery bags, squeezable bottles such as honey and mustard bottles.</td>
</tr>
<tr>
<td>PP</td>
<td>Polypropylene</td>
<td>Ketchup bottles, yogurt containers and margarine tubs, medicine bottles, appliance parts, luggage.</td>
</tr>
<tr>
<td>PS</td>
<td>Polystyrene</td>
<td>Compact disc jackets, food service applications, grocery store meat trays, foam egg cartons, cups, plates &amp; cutlery</td>
</tr>
<tr>
<td>OTHER</td>
<td>Other Types of Plastics</td>
<td>Three and five gallon reusable water bottles, some citrus juice and ketchup bottles, safety glasses, automotive tail lights.</td>
</tr>
</tbody>
</table>

(CPIA, 2009)

**Table 2: Post-Consumer Recycled Plastic Products**

<table>
<thead>
<tr>
<th>#1 PETE</th>
<th>Pullover sweatshirts, pillow stuffing, carpet backing, yarn</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2 HDPE</td>
<td>Plastic lumber, blue boxes and compost bins, consumer bottles</td>
</tr>
<tr>
<td>#3 VINYL or PVC</td>
<td>Drainage pipes, cable insulation</td>
</tr>
<tr>
<td>#4 LDPE</td>
<td>Plastic lumber and compost bins</td>
</tr>
<tr>
<td>#5 PP</td>
<td>Ice scrapers, industrial packing cases, automotive battery cases</td>
</tr>
<tr>
<td>#6 PS</td>
<td>Cassette and CD cases, office accessories</td>
</tr>
<tr>
<td>#7 OTHER</td>
<td>Picnic tables, outdoor signs.</td>
</tr>
</tbody>
</table>

(CPIA, 2009)

<table>
<thead>
<tr>
<th>Trade Flow</th>
<th>Trade Value</th>
<th>Net Weight(KG)</th>
<th>Trade Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export</td>
<td>$6,606,944,815</td>
<td>14,428,897,482</td>
<td>14,428,897,482</td>
</tr>
<tr>
<td>Import</td>
<td>$9,459,409,205</td>
<td>15,853,971,409</td>
<td>15,853,971,409</td>
</tr>
<tr>
<td>Re-Export</td>
<td>$972,369,133</td>
<td>2,972,712,246</td>
<td>2,972,712,246</td>
</tr>
<tr>
<td>Re-Import</td>
<td>$1,038,381</td>
<td>1,352,208</td>
<td>1,352,208</td>
</tr>
</tbody>
</table>

Source: ISWA (2014)

4. QUESTIONNAIRES

A) QUESTIONNAIRE FOR HOUSEHOLDS

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Age</th>
</tr>
</thead>
</table>

1) Who is responsible for handling waste in your household?
   - O Mother
   - O Father
   - O Children
   - O Housekeeper
   - O Others

2) Do you use paid private waste collection enterprises?
   - O Yes
   - O No
   If yes, how much do you pay?
   Ans: 
   If no, why not?
   Ans: 

3) When you dispose of waste, do you separate the different waste materials?
   - O Yes
   - O Sometimes
   - O No

4) If yes, what kind of materials do you separate?
   - O Plastic
   - O Paper
   - O Metal
   - O Glass
   - O Rags
   - O Aluminum cans
   - O Other

5) What do you do with the materials you separate?
   - O Reuse them
O Sell them
O Give them away
O Other

6) To whom are you selling or giving the materials to?
Ans:

7) If you sell them, please specify their price
   O Plastic
   O Metal
   O Glass
   O Paper
   O Aluminum
   O Other

B) Questionnaire for wholesaler/middle dealer

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) What kind of wastes do you buy?
   O Metal
   O Glass
   O Plastic
   O Wood
   O Paper
   O Other, Please specify…………………………

2) How much waste do you buy during a day/week/month/year?
   Ans:

3) From whom do you buy the wastes?
   O Micro and small enterprises
   O Collectors
   O Industries
   O Household
4) Whom do you sell the materials to?
Ans:

5) How much do you pay per kg?

- Plastic _____________________
- Metal _____________________
- Glass _____________________
- Wood _____________________
- Paper _____________________
- Aluminum ____________________
- Others _____________________

6) What is the price per kg of material that you sell?

- Plastic _____________________
- Metal _____________________
- Glass _____________________
- Wood _____________________
- Paper _____________________

7) Are there any problems concerning this kind of activity or business?
Ans:

C) QUESTIONNAIRE FOR WASTE COLLECTORS IN THE INFORMAL SECTOR

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) What kind of materials are you collecting?

- Glass
- Plastic
- Leftover food
- Metals
- Paper
- Other _____________________

2) Where do you collect the materials?

- Household
O Streets
O Waste bins
O Landfill
O Other

3) What is the price per kg of material that you sell?
   O Plastic ____________________________
   O Metal ____________________________
   O Glass ____________________________
   O Wood ____________________________
   O Paper ____________________________

4) How do you relate to an increase in the price of the materials?
   O Collect more
   O Collect the same amount as usual
   O Collect less
Global Market Opportunity Assessment for Eco-Friendly Diversified Jute Geo-Textile Products

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¹DBA Student, Institute of Business Administration, University of Dhaka, Bangladesh
²Associate Professor & Chairperson, BBA Program, University of Dhaka, Bangladesh

ABSTRACT:
Literature reveals that despite having both eco-friendly characteristics and diverse utility jute diversified products (JDPs) specially jute geo-textiles (JGTs) has not been able to create worthwhile impact in the global market. The factors like lack of global level of customers awareness about the eco-friendly characteristics of jute products, lack of brand image, non-availability of user friendly customized jute products at customers end, absence of efficient supply-chain management system, lack of product development and proper marketing strategy might have contributed to the failure in creating global market for eco-friendly diversified JGTs. The present article, which is a part of original study on JDPs will concentrate only on global market opportunity assessment of highly potential and value added Jute geo-textiles (JGTs). This study follows content analysis a widely used qualitative research technique.

Key words: Eco-friendly, JDP, JGT, Diversified.

1. INTRODUCTION
JGT is one of the most important diversified jute product. Geotextile is a type of technical textile which is used in or on the soil to improve its behavior and performance. It is now an accepted and proven technology to use geotextile to address a variety of soil related problems in civil engineering. Presently Synthetic geotextiles are extensively used throughout the world for protection of banks and beds of water ways, strengthening of roads, stabilization of embankments, management of slopes, consolidation of soft soil and other soil related engineering applications. Jute geotextile applied successfully in slope management, erosion control and soil conservation, stabilization of earthen embankment, protection of river and canal bank, strengthening of subgrade of road pavement and railway trac, consolidation of soft soil etc.

JGT are very similar in function to the man-made synthetic Geotextiles (Geosynthetics) - which are made from various petro-chemical derivatives. Various studies both in India, Bangladesh and abroad have proved JGT’s efficiency.

1.1 LITERATURE REVIEW:
Kamaluddin. M. Dr. and Ali Mahboob S.M. Dr. (2014), stated that JGT is one of the most important diversified jute products with potential of wide scale applications[1]. It disclosed their inherent advantages including high moisture/ water absorbing capacity, excellent drapability, high initial strength, bio-degradability and easy availability. The article also stated that JGT can be used for a number of functions including filtration, separation, drainage, reinforcement, stabilization and consolidation of soft soil, application in soil erosion control includes soil consolidation, agro mulching, the protection of river banks and embankments, land reclamation and the construction of road pavements. They stated that the demand for JGT is increasing in various parts of the world, but absence of adequate awareness and standard specifications seem to be affecting the possible market expansion. They opined that it is now required to create effective and wider awareness and commercialization of JGT as well.

Islam Jahid M.M. & Khan Ali Mubarak (2014) stated that the treatment of curable monomeric and polymeric system over and above natural fibers, by both ionizing and non-ionizing radiation offers a high speed, low temperature method for the large scale manufacture of structural composite materials [2]. The article further stated that the resulting JGT can safely guarantee a level of desired durability and be used successfully to protect the roads and embankments against erosion.

Datta .U, Chaterjee P.K & Mukharjee .B (1996) stated that the experimental trials with JGT in tea gardens showed encouraging result[3]. They recommended that the use of jute geo-textile in tea gardens would control soil erosion; reduce growing of weeds and control soil moisture which is very helpful for tea plantation.

Sanyal. T & Choudhury P.K (2006) stated that life of a flexible pavement depends basically on its flexural strength and crack propagation can be stalled by interposing JGT within the existing pavement[4].

Choudhury P.K & Das. A (2007) stated that woven JGT could meet the desired physical, mechanical and hydraulic properties like tensile strength, porometry, burst strength, permeability, water flow rate etc. and performed functions like separation, filtration and drainage[5].

Choudhury P.K (2007) stated that jute agro-textile (JAT) is highly effective in agro-horticulture and forestry for higher agricultural yield and the soil loss reduced by 97%[6].

Choudhury P.K, Das A & Sanyal T (2008) stated that JGT & JAT proved effective to address soil related problems in civil engineering and agriculture[7]. It further stated that JGT much suitable for surfacial soil erosion, control of earthen or hill slopes. JAT effective in weed suppression, afforestation, soil conservation.

Khaustagir Alok Kumar (2014) stated that most of the jute mills both in India & Bangladesh are presently

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404
committed with traditional products leaving aside high risk product categories like technical textile/JGT/DP[8]. The article further stated that it was high time for realizing that if they do not foresee the future, they would not be there to enjoy it. Finally the article commented that the future of jute product for bulk consumption would be JGT and DPs. The article suggested that the production of traditional jute products need to be reduced and production of diversified products to be increased to achieve high value addition.

Sanyal Tapobrata (2014) stated that Accreditation of JGT depends on several factors such as convincing proof of its efficacy based on the results of field applications, authentic test protocol, short listing of few potentially important JGT for specified end uses[9]. It stated that National Jute Board (India) has identified critical issues that need to be addressed for securing accreditation. It further stated that the International project on jute Geotextile(CFC/JJSG/(21) sponsored by CFC, Amsterdam, a financial unit of UN , aims at Securing global accreditation of the product in order to ensure its larger uptake which in-turn the poverty alleviation of the labors of jute industry.

Uddin Md. Jamal, Hossain Jahangir,. & Hoque Md .Anamul (.June 2014) concluded in their research paper that jute is a vital sector from economical, agricultural, industrial, and commercial point of view in Bangladesh[10].

Islam Md.shahidul and Md Alauddin (January 2012) disclosed in their research paper that the worldwide awareness on environment is the reason for the opportunities of Jute due to environment-friendly characteristics [11].

1.2 OBJECTIVES OF THE STUDY:
The broad objective of the study is to identify the challenges and opportunities of eco-friendly diversified JGTs for successful commercialization in the global market. The specific objectives are (1) ) to identify the utilities of JGTs that customers seek for making purchase decisions (2) to identify the comparative advantages of JGTs over its substitutes (3) to verify whether lack of availability of customized product, lack of brand image created bottlenecks and (4) to recommend effective marketing strategies for JGTs in the global market.

2. METHODOLOGY:
This study follows content analysis, a widely used qualitative research technique based on literature review. To assess the global level of customers awareness, utilities and effectiveness of JGTs, challenges and opportunities of marketing JGTs, the study used secondary data obtained through literature review. The comparative advantages of JGTs over substitutes, local as well as foreign demand and supply position of JGTs and the potential future demand assessed through analyzing different literatures.

3. CONTRIBUTION OF THE RESEARCH:
This study will help jute industry to develop and design JGT products as per consumer’s desire and increase global JGT market. It will help researchers to do further research and help the society to alleviate poverty, solve unemployment problem of countries like Bangladesh and India. It will resolve environmental challenges to keep the earth pollution free and help the economy to grow.

4. FINDINGS:
4.1 JGT AND ITS ATTRIBUTES:
JGTs can be divided mainly in three categories: Open mesh, woven and non- woven. Besides, a number of specialty products such as geo-grids, geo-composites and geo-nets are also available. Bangladesh Jute Research Institute( BJRI) developed more than 50 types of JGT with different specification, different weight, different longevity for use in different purpose related to soil problem. Open weave JGTs are applied to protect slopes of road, railway, hill, Bridge approach, slope of reservoirs and Embankment, Stabilization of sand dunes on sea beach, over burden dumps of open cast mines and fly ash dumps of power plants, Afforestation in semi-arid zones. Woven JGTs of different specifications are applied in Construction of road & railway embankments of soft soil, strengthening road pavement, river and canal bank protection etc. Non-woven Geotextiles are applied in construction of concealed rubble drains by the side of road and rail ways, Drainage for fill materials in flyovers, Prefabricated jute drains are applied in Airports, Warehouse, Carparks, Repairing of road and railway embankment made of compressible fill material.

4.2 JGT AND ITS SPECIAL FEATURES:
JGT products are made from natural fibers jute. JGTs are environment friendly and Bio-degradable They are durable. Durability of JGT can be extended from one year to twenty year by proper treatment. Raw materials (jute fibers) are re-new able and easily available. Customized size, design, specification, weight, packing is available. No disposable problem. Decomposed JGT improves soil health by adding nutrients.

4.3 PERFORMANCE AND FUNCTIONAL ADVANTAGES OF JGTs:
JGT, like the synthetic Geotextile, improves the geo-technical properties of the soil on which it is applied. JGT, being permeable, allows the water retained within the soil to permeate across it and also along its plane. The extent of cross permeability (termed as permittivity) and in plane. Permeability (termed as Transmissivity) depends on the pore size of JGT (termed as porometry). The porometry of JGT determines the extent of soil particle retention on which it is laid. Properly designed JGT arrests migration of the soil particles and imparts strength to the soil body. Properly designed JGT would perform the following functions:
Separation: Separation function implies segregation of two layers of materials by preventing their intermixing, i.e., intrusion of one layer into the other comprising either dissimilar materials or similar materials with different grading. In road construction, separation is needed to segregate the sub-base from the subgrade for prevention of the excessive pavement deflection under axle loads of moving vehicles. Separation of two layers for at least one season cycle helps for gradual riddance of water from the base soil by use of JGT through concurrent functions of filtration and drainage. Biodegradability of JGT therefore does not normally pose any technical impairment after a season cycle (about 12months) of their application.

Filtration: JGT is supposed to perform two contrasting functions; soil retention and ensuring permeability of water through and along them. JGT provides a technically superior solution to traditional granular graded filters. Soil properly overlain by JGT is seen to develop „filter cakes“ usually within a period of 3 to 4 months from the date of application according to laboratory tests carried out in Research Institutes. Development of “filter cakes” is a sure indication of the base-soil having attained natural stability. Once the soil attains natural stability, function of any separating fabric, be it synthetic or natural, becomes redundant.

DRAINAGE: JGT performs drainage function by conducting water. Proper drainage of soil accelerates its consolidation. The cohesion of the soil, as a result, is increased which, in turn, accentuates the separation effect of the JGT. JGT possesses a high degree of Transmissivity, i.e., it can drain water effectively along their plane. JGT used as a separator in roads may facilitate the lateral evacuation of water from the road-structure and prevent water accumulation at the subgrade level.

INITIAL REINFORCEMENT: JGT can reinforce soils, whose shear strength is low at the initial stages. Once the consolidation process takes place, there will be increase in the shear/tensile strength of sub-soil and hence there may no longer be need for JGT reinforcing layer. As has already been pointed out, any soil mass tends to stabilize naturally if proper separation, filtration and drainage and soil retention can be ensured.

CONTROL OF SURFACE SOIL DETACHMENT: Surface soils get eroded by raindrops, splash and strong wind. JGT (in fabric form) control erosion of any surface soil basically in two ways. First, they give a protective cover (partial or full) to the exposed soil surface. Secondly, they control migration of a portion of the soil particles by reducing the flow of surface run-off. JGT can retain almost 5 times their own weight of moisture, can attenuate extremes of temperature, can provide protection to seedlings from the direct sunrays, can prevent dehydration of soil, allow air and light through their open structures and provide nutrients to the soil after their biodegradation.

BIO-TECHNICAL SUPPORT: JGT facilitates, quickens and supports growth of vegetative cover on them. Once vegetation is grown, the function of JGT virtually ceases. Vegetation so grown, besides dissipating substantially the kinetic energy of rain-drops, serves as a receptor of moisture with the help of the leaves and the stems. Finally, JGT and vegetation together provides a sustainable biotechnical solution to the problems of erosion control.

CIVIL ENGINEERING APPLICATION OF JUTE GEOTEXTILE (JGT): The effective application of JGT in Civil engineering areas are: Surface Erosion Control in Slopes, Bank Protection in Rivers and Waterways, Erosion Control in Slopes, Stability of Embankments for Highways, Strengthening of a Road-structure, Shoulder Drainage, Consolidation of Soft Soil, Prevention of reflection cracks.

5. COMPARATIVE ADVANTAGES OF JGT OVER SUBSTITUTES: Some of the most important characteristics of JGT compared to Synthetic geo-textile (SGT) are shown in table-1.

<table>
<thead>
<tr>
<th>No.</th>
<th>Characteristics</th>
<th>SGT</th>
<th>JGT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Biodegradability</td>
<td>Non-biodegradable</td>
<td>Biodegradable</td>
</tr>
<tr>
<td>2.</td>
<td>Photodegradability</td>
<td>Non-photodegradable</td>
<td>Photodegradable</td>
</tr>
<tr>
<td>3.</td>
<td>Ionic Property</td>
<td>Normally non-ionic</td>
<td>None</td>
</tr>
<tr>
<td>4.</td>
<td>Metal content</td>
<td>Mercury, lead, cadmium, copper, nickel, cobalt, zinc, arsenic etc.</td>
<td>None</td>
</tr>
<tr>
<td>5.</td>
<td>Stabiliser/sensitizer/fillers/pigments</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>6.</td>
<td>Warming effect</td>
<td>Soil temperature increases by1-2°C</td>
<td>No effect</td>
</tr>
<tr>
<td>7.</td>
<td>Biomass</td>
<td>Negative impact</td>
<td>Fertilizer effect</td>
</tr>
<tr>
<td>8.</td>
<td>Compatible</td>
<td>Normally not compatible</td>
<td>Compatib le</td>
</tr>
<tr>
<td>9.</td>
<td>Stacking effect</td>
<td>Slippery</td>
<td>Non slippery</td>
</tr>
<tr>
<td>10.</td>
<td>On burning</td>
<td>Toxic gas evolves</td>
<td>Only CO₂ evolves</td>
</tr>
<tr>
<td>11.</td>
<td>Effect on water</td>
<td>Pollution on Leaching</td>
<td>No pollution</td>
</tr>
</tbody>
</table>
12. Effect on fish/microbes/eggs etc. Harmful Harmless

13. Effect on plants Harmful Harmless

14. Effect on agricultural activity Increase in insect growth No effect

Source: JDPC Booklet, 28th Feb, 2013, Article-Dr. A.B.M. Abdullah.

The above table compared some of the important characteristics of JGT with SGT which clearly indicates that JGT’s characteristics are eco-friendly in nature, pollution free, health friendly and no harmful effect whereas SGT has all the ill effects and unfriendly to environment.

5.2 PRICE COMPETITIVENESS OF JGT & SGT:
Study shows that pricewise JGTs are lucrative and cost effective. The Table-2 shows the comparative cost of JGT & SGT.

<table>
<thead>
<tr>
<th>Product</th>
<th>Price per sq.mtr.</th>
<th>Price of SGT higher by %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open mesh JGT (Ex. factory)</td>
<td>USD 0.11</td>
<td>455% higher</td>
</tr>
<tr>
<td>Open mesh SGT</td>
<td>USD 0.50</td>
<td></td>
</tr>
<tr>
<td>Woven JGT (ex-factory)</td>
<td>USD 0.33</td>
<td>418% higher</td>
</tr>
<tr>
<td>Woven SGT</td>
<td>USD 1.38</td>
<td></td>
</tr>
<tr>
<td>Non-woven JGT (ex. factory)</td>
<td>USD 0.14</td>
<td>550% higher</td>
</tr>
<tr>
<td>Non-woven SGT</td>
<td>USD 0.77</td>
<td></td>
</tr>
</tbody>
</table>

Source: Report by Central road research institute, Delhi, April-2011.

The table shows that the prices of SGTs are higher than that of JGTS by 418% to 550%.

5.3 ENVIRONMENTAL ASPECTS OF JGT & SGT:
Environmental Protection Encouragement Agency (EPEA), Hamburg in Germany, a research and consultancy body, and the FAO Secretariat have made a comparative study between jute and polypropylene (PP) in respect of waste generation, water requirement, energy consumption and CO2 emission in their production. The Table below indicates the same.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Jute</th>
<th>PP</th>
<th>Ratio( pp/jute)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste produced (tons of waste/tons of product)</td>
<td>0.9</td>
<td>5.5</td>
<td>6.1</td>
</tr>
<tr>
<td>Water consumption per ton of product(m³)</td>
<td>54 to 81</td>
<td>1.3</td>
<td>0.016 to 0.02</td>
</tr>
<tr>
<td>Energy consumption per ton of product (GJ/t)</td>
<td>5.4 to 14.35</td>
<td>84.3</td>
<td>5.9 to 15.6</td>
</tr>
<tr>
<td>CO₂ emission(tons of CO₂/ tons of product)</td>
<td>-1.2 to 0</td>
<td>3.7</td>
<td>to 7.5 -</td>
</tr>
</tbody>
</table>

Source: Report by central road research Institute, Delhi, April-2011.

The table shows that jute produce less waste, water consumption is very high, energy consumption is very low and emission of CO₂ is very low compared to PP which indicate jute is eco-friendly and PP is very harmful for the environment.

6. GLOBAL DEMAND ANALYSIS OF GEOTEXTILES:
The global Geotextile Market size was 4,505.0 million square meters in 2015[12]. The market is likely to observe growth over the next several years owing to its increasing demand in preventing soil erosion and drainage applications. Geotextiles have gained popularity in the market due to performance and functional advantages over other materials. Growing urbanization, rising population coupled increasing government investment for infrastructure development in various regions is expected to have a positive impact on the future market. Factors accountable for the participation of numerous government bodies include increasing employment in the manufacturing sector, application, and improved environmental conditions. Cost-effectiveness and longer life span in comparison with other types of materials coupled with rising environment concern are expected to increase product demand in years to come.

The growth in the consumption of geotextiles in the industrialized countries has been phenomenal during the last two decades[14]. Demand for geotextiles is presently concentrated in Western Europe, North America, Japan and Australia. The three regions each account for about one-third of global consumption. A vast untapped market for geotextiles exists in many African, South American and Asian developing countries. The same applies to East European countries. The extensive area of these regions and the potential for erosion-control operations are factors underlying the favorable market prospects for these
regions. Suppliers of natural-fibre geotextiles in developing countries may face less competition from producers of synthetic geotextiles in these unexploited markets than in the industrialized markets.

8. CONCLUSION & RECOMMENDATION:
There is a wide scope for innovative and prospective uses of JGTs as it is not only environmentally friendly but application of jute products, particularly JGTs is effective for protecting environmental degradation. JGTs emerged as an effective technical textile in solving problems related to geotechnical, bioengineering, agronomic and horticultural requirements by way of consolidation, filtration, separation and management of soil along with agricultural mulching. Increasing scientific and technological information and knowledge about earth, soil, water, environment and ecological sustainability are facilitating development of need based JGTs. International accreditation and users guidelines to use ecofriendly JGT in solving soil related problems can popularize JGTs for wide scale commercial uses. For effective marketing of JGTs, suggested following recommendations:

1) The JGT producers /sellers should contact directly to the customers of different countries and have meetings with the Clients (ultimate buyers), their appointed consultants (specifiers) , Contractor & sub-contractors (direct buyers) and need to convince them with their required specification, attributes and other requirements.

2) The JGT producers/ sellers should contact different Govt., Semi-Govt. and institutional buyers of JGT and give sufficient proof of efficacy of JGT to meet their requirements.

3) The respective Govt. Authority of JGT producing Countries should contact Govt. of importing countries to promote JGT.

4) Powerful Agents should be appointed in importing countries to contact and convince JGT buyers.

5) Advertisement through print media, electronic media and through on-line is required.

6) Participation in exhibitions and trade fairs in target markets to display JGT is essential.

7) International accreditation, Customized standardization of JGT is prerequisite.

REFERENCES:
The Effects of Liquidity Risk Management on Islamic Banks and Conventional Banks in Bangladesh: A Comparative Study

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Department of Business Administration, Northern University Bangladesh, Dhaka, Bangladesh
Paper# ICBM-17-434

Abstract – This paper is an attempted to examine the effects of liquidity risk management through a comparative study between Islamic banks and conventional banks of Bangladesh. The liquidity risk arises due to mismatch between the asset and liability of the banks. The liquidity risk management is important to maintain for all the banks in order to be solvent. Liquidity risk needs to monitor and well manage by all financial institutions and handle this effectively and cautiously. Liquidity management is a major part of the risk that faced by the banking sector. The study tries to address the significant differences exist in managing liquidity position of conventional banks with Islamic banks of Bangladesh. For this purpose 12 banks (six from each category) taken as a sample of this study (2011 to 2015) It was found that the NWC is positively related with liquidity risk and other variables like: size of the bank, ROE, CAR and ROA is negatively related with liquidity risk for Islamic banks. ROE and CAR is positively related with liquidity risk of conventional banks and other variables are negatively related with liquidity risk. All null hypotheses are accepted for conventional banks but three hypotheses are accepted and three hypotheses are rejected for Islamic banks. In case of conventional banks, there is no significant relation with liquidity risk management of conventional banks but there is a significance relationship with Islamic banks.

Keywords - CAR, Liquidity Risk Management, ROA, ROE, Size of the bank

I. INTRODUCTION

Liquidity risk has been became very important and prominent issue in recent year for global financial crisis. Liquidity risk arises when the liquid assets are not sufficient enough to meet maturing obligations. A bank maintain short term liquid assets may have to undertake transactions at heavy cost resulting in a loss of earning or in worst case, the liquidity risk could result in liquidation of the bank, if it is unable to undertake transactions even at current market prices. Banks with large off-balance sheet exposure or those rely heavily on large corporate deposits have relatively high level of liquidity risk. Further, banks experiencing a rapid growth in assets should have major concerns for liquidity. At present there having two types of banking system currently prevail around the world, one is interest free banking or Islamic banking system and another system is interest based or conventional banking system [20]. This paper tried to investigate the key feature of Islamic finance relation to liquidity risk and techniques used in managing it. Islamic banks have some unique features in relation to liquidity risk management. Islamic banks abide by the Islamic Shari’s’ sh concepts and conventional banks practices man made principles.

II. LITERATURE REVIEW

A lot of literatures have been available for analysis in countries around the world to make comparative the liquidity performance of Islamic banks and conventional banks. The different comparative studies are available from around world. The Islamic banking scheme can offer liquidity and support in the process of money creation besides contributing to transactions accounts and found that in all developing economies investing funds on basis of profits and losses is an attractive choice for the customer for this type of banks investment.

Ghannadian and Goswami (2014), stated that the performance of an Islamic banks how Islamic banks deals with its liquid assets. Islamic banking system support of money creation and on the other side helps to contribute
transactions accounts and investing on the basis of profit or loss. Investment mechanism of Islamic banks makes it more attractive choice for investment for developing economies [5].

Akhizidis & Khandelwal (2008) identified that the commercial banks generally sell the deposit products that are liquid and short term basis and provides loan for long term basis. This is the prime reason liquidity mismatch for conventional banks [1].

Akhter & Sadaqat (2011) found that superior performance in element and liquidity risk management of Islamic banks than the conventional banks. The model used by them has been adapted for the current research [2].

Gabbi (2004) observed that Liquidity risk can be controlled in the course of practices that are severely connected to the scale and scope of financial measures, seeing as large banks are capable both to manage additional market information and to influence monetary policy [4].

Hassan (2009) found that there are 3 types of risk faced by the Islamic banks in Brunei Darus Salam. These include credit risk, foreign-exchange rate risk and operating risk. These risks are managed by such practices as Risk Identification (RI) and Risk Assessment Analysis (RAA) [7].

Iqbal (2012) investigates the liquidity risk management and comparative studies between conventional and Islamic banks in Pakistan cover the period of 2007-2010. This study used the liquidity risk as a dependent variable & bank size, non performing loan ratio, ROE, CAR and ROA used as independent variables. This paper found there is a significant relation of nonperforming loan to both conventional and Islamic banks in Pakistan. They also found that there is a significant and positive relation of CAR, ROA, ROE and size of the bank with the liquidity risk in both conventional & the Islamic banks of Pakistan [6].

Ojo (2010) described the value of capital adequacy ratio as define in the Basel II accord as a measure to reduce risk. This study found capital adequacy ratio to be positive and statistically significant for conventional banks [12].

Rahamn & Banna (2015) studied based on liquidity risk management and a comparative study between conventional and Islamic banks. This study took six mid-size banks, among them three banks from each group covering of period 2007-2011. This study found that independent variables that have positive but insignificant relation with the liquidity risk of Islamic banks of Bangladesh. Size of the bank is negatively related with the liquidity risk for both conventional and for Islamic banks. The model used by them has been adapted for the current author of this paper [13].

Sawada (2010) used the regression model they highlighted the size of the bank as positively related with liquidity risk. This paper found that the size of the bank is positive and insignificant when cash-to-asset ratio is used as dependent variable [17].

Sensarma & Jayadev (2009) suggested that liquidity risk does not always significantly depend upon every independent variable. For example capital Adequacy Ratio and Return on Equity is insignificant in case of Islamic banks [18].

Zheng (2006) & Ayub (2007) mentioned in their papers the liquidity risk exists due to high short-term spread between deposits and loan ratios, high off-balance sheet exposure resulted from financial engineering by the conventional banks, asset-liability duration mismatch and relatively lower investment in risk-free government assets (bonds) [22] & [3].

III. METHODOLOGY

The data has been collected from secondary sources & these data were mainly collected from published financial Statements, cover a period of 5 years 2011 to 2015. The study has taken twelve (12) private commercial banks as samples of this study (table I) among them six banks are Islamic banks and six banks are conventional banks. There are 39 Private Commercial Banks (PCBs) banks in Bangladesh. Among them eight (8) banks are Islamic banks in Bangladesh [20]. This paper have selected six (6) Islamic banks and six(6) conventional banks for said research (table I) on the basis of availability of data. The study research is being conducted to evaluate how liquidity risk depends upon in different variables by applying linear regression model with already been developed and applied by Akhter & Sadaqat (2011) and this model also used by (Rahman & Banna) (2015) [2] &[13]. The basic model is written as follows:

\[ Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon \]

Where, \( \alpha \) is the intercept
\( \beta = \) is the slope or regression coefficient
\( X = \)is the independent variable
\( \epsilon = \)is the error term

Model I and Model II are specified models for conventional banks and Islamic bank respectively.

Model I:

\[ Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon \]

Model II:

\[ Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon \]

Independent Variables are: Size, NWC,ROE, CAR and ROA.

\[ Y_1 = \text{Liquidity Risk: Cash to Total assets} \]
\[ x_1 = \text{Size of the bank(S): Logarithm of total assets} \]
\[ x_2 = \text{Net working capital (NWC): Current assets less current liabilities} \]
\[ x_3 = \text{Return on equity (ROE): Net income/ Total equity} \]
\[ x_4 = \text{Capital Adequacy ratio (CAR): (Tier 1 capital + Tier 2 Capital) / risk weighted asset} \]
\[ x_5 = \text{Return on Assets (ROA): Net income/ Total assets} \]
\( \epsilon \) = error term

Beta and standard deviation is used to measure the risk factor which was proposed by Modigilini and Pogue (1974), where Beta is the relative measure of the risk and standard deviation is the measure of the total risk [11].
3.1 Hypothesis of the Study:

H01 - There is a no statistically significant relationship between liquidity risk with the independent variables for Islamic and conventional banks.

H02 - There is a no statistically significant relationship between sizes of the bank with the liquidity risk of the bank.

H03 - There is a no statistically significant relationship between the net working capital with the liquidity risk of the bank.

H04 - There is a no statistically significant relationship between return on equity ratio with the liquidity risk of the bank.

H05 - There is a no statistically significant relationship between Capital Adequacy ratio with the liquidity risk of the bank.

3.2 Procedures for Data analysis:

Different financial tools and techniques namely maximum, minimum, mean and standard deviation, coefficient of variation, Pearson’s correlation, multiple regression etc. have been used to analyze and compare the secondary collected data. Using multiple regression analysis findings are presented based on types of banks. SPSS V 16.0 is used in investigating, computing, measuring and comparing the liquidity risk for Islamic banks and conventional banks accordingly to their different set of data.

IV. RESULTS AND DISCUSSION

The statistical data has been divided into three categories. i.e. descriptive, correlation and regression.

4.1 Descriptive Analysis: The descriptive analysis below shows the maximum, minimum, mean and standard deviation values of conventional and as well for Islamic banks. From the Table II & III it is found that different variables such as: Minimum values of Islamic banks’ are size of the banks, Net working capital (NWC) and capital adequacy ratio (CAR) is less than the conventional banks. This is found that the minimum value of ROA is for conventional and Islamic banks are same but ROE of Islamic banks are more than the conventional banks. Maximum value of liquidity risk, size of the bank and return on assets (ROA) of Islamic banks are greater than the conventional banks. On the other hand, Net working capital (NWC), capital adequacy ratio (CAR) and return on equity (ROE) maximum value is greater for conventional banks in compare to Islamic banks.

Standard deviation for Islamic banks are more for liquidity risk (LR), size of the bank, networking capital (NWC) and capital adequacy ratio (CAR) in compare to conventional private banks. But in case of return on equity (ROE) and return on assets (ROA) the standard deviation for conventional banks are more than the Islamic banks.

4.2 Correlation Matrix: The correlation coefficients are stated in table IV for conventional banks and table V for Islamic banks respectively. This gives information on the degree of correlation between the explanatory variables. The matrix explains that in general the correlation between the explanatory variables is not well-built that multicollinearity problems are not serve Kennedy (2008) identified that multicollinearity is a problem when the correlation is above .70[10].

Accordingly to the correlation results, (table IV) liquidity risk is positively correlated with return on equity (ROE) & negatively related with other variables like size of the bank, NWC, ROE, CAR and ROA for conventional banks. There is a significant relationship with CAR (i.e.53.3%) with size of the bank at 1% level of significance for conventional banks.

On the other hand (table V), the liquidity risk is positively correlation with net working capital but negatively correlated with size of the bank, return on equity (ROE), capital adequacy ratio (CAR) and return on assets (ROA) but significant with CAR with liquidity risk of the bank (i.e. 37%), NWC with size of the bank is 44% at 5% level of significance and CAR is significant with size of the bank 64% and ROA is significant with ROE (i.e. 53%) with 1% level of significance for Islamic banks.
### TABLE IV
PEARSON’S CORRELATION COEFFICIENT (CONVENTIONAL BANKS)

<table>
<thead>
<tr>
<th></th>
<th>LR</th>
<th>Size</th>
<th>NWC</th>
<th>ROE</th>
<th>CAR</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>-2.31</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NWC</td>
<td>-0.056</td>
<td>-0.248</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.138</td>
<td>-0.20</td>
<td>0.30</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAR</td>
<td>-0.003</td>
<td><strong>0.533</strong></td>
<td>0.09</td>
<td>-0.19</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>-0.212</td>
<td>-0.199</td>
<td>-0.08</td>
<td>-0.21</td>
<td>-0.032</td>
<td>1</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

### TABLE V
PEARSON’S CORRELATION COEFFICIENT (ISLAMIC BANKS)

<table>
<thead>
<tr>
<th></th>
<th>LR</th>
<th>Size</th>
<th>NWC</th>
<th>ROE</th>
<th>CAR</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>-1.38</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NWC</td>
<td>0.277</td>
<td>0.44*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>-0.062</td>
<td>-0.25</td>
<td>0.14</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAR</td>
<td><strong>0.64</strong></td>
<td>0.31</td>
<td>-0.29</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>-0.26</td>
<td>-0.23</td>
<td>0.19</td>
<td><strong>0.53</strong></td>
<td>-0.09</td>
<td>1</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

### TABLE VI
REGRESSION RESULTS FOR LIQUIDITY RISK COEFFICIENT Model I (CONVENTIONAL BANKS)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Stand Coefficient</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cons.</td>
<td>11.56</td>
<td>6.87</td>
<td>1.684</td>
<td>0.105</td>
</tr>
<tr>
<td>Size</td>
<td>-0.187</td>
<td>1.43</td>
<td>-3.33</td>
<td>-1.31</td>
</tr>
<tr>
<td>NWC</td>
<td>-2.77</td>
<td>0.00</td>
<td>-1.86</td>
<td>-0.89</td>
</tr>
<tr>
<td>ROE</td>
<td>0.117</td>
<td>0.061</td>
<td>0.59</td>
<td>0.27</td>
</tr>
<tr>
<td>CAR</td>
<td>0.099</td>
<td>0.131</td>
<td>0.186</td>
<td>0.755</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.015</td>
<td>0.02</td>
<td>-1.55</td>
<td>-0.78</td>
</tr>
</tbody>
</table>

R² 0.357  Adjusted R-squared 0.054
R-square 0.13 R-square change 0.128
Durbin-Watson 1.504 F-statistic 0.702

### TABLE VII
REGRESSION RESULTS FOR LIQUIDITY RISK COEFFICIENT Model II (ISLAMIC BANKS)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Stand Coefficient</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cons.</td>
<td>18.61</td>
<td>7.58</td>
<td>2.46</td>
<td>0.022</td>
</tr>
<tr>
<td>Size</td>
<td>-0.57</td>
<td>1.53</td>
<td>-0.85</td>
<td>-0.377</td>
</tr>
<tr>
<td>NWC</td>
<td>0.05</td>
<td>0.017</td>
<td>0.524</td>
<td>2.68</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.31</td>
<td>0.214</td>
<td>-0.305</td>
<td>-1.43</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.58</td>
<td>0.222</td>
<td>-0.567</td>
<td>-2.60</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.122</td>
<td>1.11</td>
<td>-0.022</td>
<td>-0.11</td>
</tr>
</tbody>
</table>

R² 0.625 Adjusted R-squared 0.264
R² 0.391 F-statistic 3.081
Durbin-Watson 1.766 R-square change 0.391

### 4.3 Regression Analysis:

The regression results with the Islamic and conventional banks’ liquidity risk are concerned the following analysis is based on the regression results obtained from SPSS output. R square for both the model explains that the independent variables explain about 13% and 39% (table V & VI) changes in the dependent variables for conventional and Islamic banks respectively.

Model –I, (Table VI) for conventional banks ANOVA test shows that all null hypotheses are accepted (i.e. significant value for conventional banks are liquidity risk (LR) is 0.105, size of the bank is 0.203, Net working capital (NWC) is 0.381, Return on equity (ROE) is 0.786, capital adequacy ratio is 0.457 and return on assets is 0.441) at % 5 level of significance. This results shows that there is no significant relation between dependent variable and independent variables of conventional banks. For (Model I) dependent variables for conventional banks are explaining 35.7% only.

Model –II (table VII) shows the regression results run on Islamic banks From ANOVA test it is revealed that three vales are significance value are greater than the calculated value. So, it is rejected three (3) null hypotheses and three (3) null hypotheses are accepted at % 5 of level of significance. R are about 63%, R² is 39.1% for Islamic banks (Model II). Dependent variables for Islamic banks are explaining about 63%.

### TABLE VIII
SIGNS OF COEFFICIENTS FOR INDEPENDENT VARIABLES (ISLAMIC AND CONVENTIONAL BANKS)

<table>
<thead>
<tr>
<th>Sign</th>
<th>Islamic Banks</th>
<th>Conventional banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>NWC, ROE, CAR</td>
<td>Size of the bank, ROE, CAR and ROA</td>
</tr>
<tr>
<td>Negative</td>
<td>Size of the bank, NWC and ROA</td>
<td></td>
</tr>
</tbody>
</table>

**Model I**: Liquidity Risk (Conventional Banks)

Liquidity Risk=18.61+(.085)Size of the bank+.524 NWC+(.305)ROE+(.567)CAR+(.022)ROA

**Model II**: Liquidity Risk (Islamic Banks)

Liquidity Risk=11.561+(.333)Size of the bank+(.186) NWC+.059 ROE+.086CAR+(.155)ROA

Table VIII shows that, (Model I) ROA is negative relationship with LR and positively related ROE and CAR with LR but insignificant amount conventional banks. This result is supported by reference [18].

The table VI & VII show the fitness of the both models I & II at F-statistics of 0.702 and 3.081 at 5% level of significance respectively. This points out that both models are good fit. Independent variables have that have positive relation with Net working capital (NWC) and significant (i.e. 52.4%) at 10% level of significance level. Liquidity risk only 18.6% for Islamic and 11.61% conventional banks respectively. This study found that the
only NWC has positive relationship with LR i.e. 5% association with LR for Islamic banks. Which results is supported by reference [8]. Negative relationship was found with other variables like size of the bank -57% and -18.7% for Islamic banks and conventional banks (which results supported by reference [13]). Return on equity (ROE), Capital adequacy ratio (CAR) and Return on assets (ROA) have negative relationship with LR i.e. -31%, -58% and -12.2% for Islamic banks (Model-II). The relation of return on equity (ROE) with exploratory variable is negative but 31% significant for Islamic banks (i.e. 31%) and insignificant for conventional banks (i.e. 1.7%) in Model I and Model II with 95% confidence level, this result is supported by reference [2].

V. CONCLUSION

It can be conclude that liquidity risk management for Islamic banks has significant relationship with CAR of the bank. NWC is positively related with Liquidity risk management. ROE, CAR and ROA are negatively related with liquidity risk management for Islamic banks. But for conventional banks ROE and CAR is negatively related with liquidity risk management and positively related with NWC. Size of the bank and ROA.

There is a significant relationship between liquidity risk management and independent variables of the Islamic banks but there is no such relationship exists for conventional banks. This paper focused and analyzed on liquidity risk management and different management practice of Islamic Banks and conventional banks. Islamic banks throughout its life its contribution in socio-economic prospect of Bangladesh has the greater significance. The conclusions are in confirmation this paper finding are similar with references [2], [13] &[18]. On basis of the above analysis it may further conclude that these results can be further strengthened if the banks manage their liquidity risk management in more efficient ways they can increase their performance. This paper suggests that further research be conducted on the same topic with larger sample size with different banks and extending the number of years of the sample. This research was based only six Islamic banks and six conventional banks. So get a clear picture there will lot of opportunities for researchers for further research.

REFERENCES

[6] Iqbal, A (21..) 
A Study of Supply Chain Management in Shipbuilding Industry

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Abstract – This paper deliberates a dynamic model to support assessment on Supply chain management performance of shipbuilding industries. The exercise of Supply chain management in today’s world is rising expressively as it declines the cost, delivers smoother service in manufacturing industry, satisfies the customers, the economy of time that allows the value chain improvement of the shipbuilding industry same as the other industries. The basic objectives of this study is to create the relationship between supply chain management and shipbuilding industry. In the near future, the impacts of this appropriate relationship will provide the competitive advantage of the organization and the industry enable to support the environment through a sustainable supply chain management procedure. Secondary data are used in this paper from the various books, journals, conference papers, newspapers, magazines and wide use of internet etc. The paper is envisioned to capture an accurate structure of logistic operation that permits the industry to analytically forecast logistic performance, to trace the points of bottleneck, to analyze the probable factors creating the bottleneck, and to select logistic setup which will yield better logistic performance. Meanwhile the financial struggle, either due to shortage of fund resources or poor business management, has been producing the negative condition presently faced by many shipbuilding industries. So the paper will prompt a systematic model with the integration of money flow together with raw materials and information flow. That will improve the product quality, cost effectiveness, Sustainable operations and delivery time, which are considered as the gauges of Supply chain performance.

Key Words: Supply Chain Management, Shipbuilding, Fund flows, Raw materials and Information flow.

1. INTRODUCTION

As a maritime nation, Bangladesh has its magnificent history & inheritance. The geographical position gives Bangladesh the distinctiveness as a riverine country. Moreover, it is a delta island which is adjacent to the Bay of Bangle. So ships have played an active role in the country trade through maritime transportation since ancient period.

The major portion of the exported and imported commodities is carried by the sea, which are more than 85%. In present condition more than 5000 coastal vessels in service to transport 90% of total oil product, 70% of other cargos and 35% of passengers. Passenger vessels are the key component to connect people from the remote island to the mainland of the country. Furthermore 1, 00,000 skilled manpower and 1, 50,000 semi-skilled manpower are providing their effort in this labor demanding industries [1].

The World population in July of 2010 was nearby 6.83 billion, which will be increased in probable figure 9.08 billion in 2050[2]. That will open the door of enormous maritime trade for the additional load of the people over the world. Due to upcoming population the commerce, business and economic activities will be increased as the expenditure increases. The world economy is directly interrelated with the seaborne trade. So the demand of shipbuilding will be amplified for sure.

To become a leading shipbuilding nation utmost common key role is the development of the apposite supply chain management. Because without implementation of supply chain in information, technology, manpower, transportation, management and production system, a shipbuilding industry could not be well organized. Bangladesh has the competitive advantage with any other country in main driving factor the labor cost. But just require the financial support, legislation support and accurately organized supply chain management system in the organization.

SCM has emphasized on the management system which provides the significant result for all parties in the chain. As a whole, it brings some notable challenges when the self-interest of one party to be involved in the chain. Hence it should be a chain of interdependent organizations jointly and co-operatively organizing to control, manage and improve the flow of fund, material and information from the provider to end consumer.

An efficient supply chain management involves with supply chain resources, product, information and fund flow to increase the total supply chain surplus. The growth of supply chain surplus upturns the advantages for all contributing members with in the supply chain.

Today’s world, the practice of Supply chain management is increasing rapidly. Because of, it reduces the cost, makes smoother the service and manufacturing industry, pleased the clients, economy of time that allows the value
chain development of the shipbuilding industry as like as the other industries. The purpose of this research is to establish the convenient SCM system in the shipbuilding industry effectively. The focal points are Quality of product, Economy of time, Customer satisfaction, Competitive advantage and Cost effectiveness of shipbuilding industry.

2. LITERATURE REVIEW

SCM has been familiar as a competitive improvement as well as deliberately appropriate understanding of management that is typically practiced and functioned in manufacturing industries. On the other hand, researchers are observing on implication of SCM in other industries such as service and education etc where SCM would perform a noteworthy role in non profit business organization.

Generally Supply chain is well defined as A set of three or more entities (organizations or individuals) directly involve in upstream and downstream flow of products, services, finances and/or information from a source to a customer.[3]

FIGURE 1: The Basic Supply Chain of manufacturing industry (Huda et al., 2014)

According to Menzer et al (2001), There is degrees of supply chain complexity: a “direct supply chain”, an “extended supply chain” And an “ultimate supply chain”. A shipbuilding industry general structure could describe with ultimate supply chain involving funds, information and material flows and third party logistics might be used for reverse supply chain for sustainable environmental development. The coordination in management has the positive impact in the ultimate supply chain on the general structure on shipbuilding.


Global Supply Chain Forum acknowledged the eight SCM processes to arrive at the objective and presented in Figure are:

4. RESULT AND DISCUSSION

4.1 Role of SCM

Nearly all of the industries in manufacturing sector are more or less practicing the Supply Chain function with the

FIGURE 3: Eight supply chain management processes (Lambert, 2008).

The aim of SCM is to assimilate both information and material flows flawlessly across the supply chain as an active competitive key to achieve the supply chain surplus. SCM is the integration of significant business processes from end customer through original suppliers that delivers products, services and information that enhance value for customers and other participants. The eight supply chain management processes represent a basic supply chain system arrangement, the information and manufactured goods flows and the SCM procedures that integrate tasks within the industry as well as other organizations both national and international across the supply chain. This basic SCM process could also imply on the shipbuilding process of the country.
aim to attaining competitive advantages in vibrant and fortified competition market. Day by day, Supply Chain has been established as one of the managerial techniques to maintain profit and growth of the business. The SCM is still in the progressive procedure in Bangladesh.

It is taking the integrated shape with trial and error way or as per company’s priority area. The practice and application of SCM in this sector is behind compare to the evolutionary time line of SCM [5].

4.2 General Structure of Shipbuilding

A ship is constructed by passing through numerous types of sub process. These sub processes consist of purchasing raw material, warehousing, steel processing, cutting and welding, furniture fixing, equipment setting, sub assembling, assembling, etc. When all sub processing integrated then a large part of ship could be constructed. So the purpose of the SCM is to complete assignment by delivering quality product with less cost in a reduced time.

The ultimate supply chain is related to raw materials, information and fund flow. The schematic diagram of the general structure of shipbuilding by diawati and chakravastia could be describing the basic ultimate supply chain of shipbuilding.

4.3 Issues of SCM in Shipbuilding Industry of Bangladesh

The aim of SCM is to assimilate both information and material flows flawlessly across the supply chain as an active competitive key to achieve the supply chain surplus. SCM is the integration of significant business processes from end customer through original suppliers that delivers products, services and information that enhance value for customers and other participants.

4.3.1 Material flow management in SCM in shipbuilding Industry

To construct an international standard ship, there are different types of machineries, equipment and steel is required. Some are required to purchase from abroad due to the lack of domestic supportive industry. On the other hand, for some particular ship building components have the availability in the industry from the backward linkage industry and ship breaking industry.

Offshore outsourcing is a major part of the modern Bangladeshi shipbuilding industry. It is very difficult to find a shipyard in the country that does not offshore outsourcing in one form or another to build international class vessel. To keep their standard as per the requirement of foreign ship buyers and lack of sufficient supportive industries, offshore outsourcing is cost effective in major cases. As because of ship building is a specified single ordered product to the ship owner. So it might require the Engineering change for the machinery and equipment. The suppliers would most expectedly be engaged in the several Engineering Changes. Hence, this additionally extends the Engineering Change procedure to alliance across the supply chain system in the ETO manufacturing.
4.3.2 Information flow of Supply chain management in shipbuilding Industry

Information is the one of the basic elements to establish a successful SCM because it is not possible to commence product flow without the flow of information. Precise and timely information permits an industry to lower inventories rate, improve course-plotting and scheduling of logistics, and improve buyer satisfaction levels.

4.3.3 Fund flow in Supply chain management of shipbuilding industry

One of the objectives of SCM is optimize the total supply chain cost and investment. The management of the entire supply chain cost it contributes directly to overall profitability. SCM is involved with the management of fund flows across a supply chain. Financial funds flow from the final ship buyer, who is usually the only source of actual fund in a supply chain and that return through another associate of the supply chain (such as ship-broker, shipbuilders and supplier) Fund flow in SCM is directly opposite to the material flow. Financial management in SCM is primarily concerned with two factors. First one is financial resources. That should be confirmed from one or more sources (the increasing of funds), Second one is the effective deployment of funds. That ensures the proper utilization of these resources (the effective utilization of funds). The raising of funds it is generally recognized that there are three main sources – share capital, loan capital (or interest debt) and reserves [8].

The integrated financial model of the figure has given below:

![FIGURE 7](image-url)  
**FIGURE 7:** The integrated financial model (Edward Sweeny, 2004)

4.3.4 Reverse supply chain management in Shipbuilding industry

Normally after the service duration of the product, it becomes useless and disposes the product. But in current times, the manufacturer of the product tries to reuse the product from the client after its complete use. In the same way, for the shipbuilding industry, there is an extension of the standard supply chain, to make it an encircled supply chain. The dissimilarity of shipbuilding encircled supply chain from those other products such as electronics is that the collection center of scrap ships is clustered. This is beneficial to provide collection effort necessary is minor than for other products. In current condition, more than 80% of ship breaking have taken place in two countries. One is India (Alang) and the second one is Bangladesh (Chittagong) [9].

The reverse supply chain in ship breaking helps the shipping industry gain financial value out of zero-value operational vessels. It also enables the ship owner do away with the operational burden of maintaining vessel which has higher operating costs than its revenue. The reverse supply chain in inland water transport ship building, delivers huge amount steel in without misusing natural resources. Hence, the ship recycling industry support the shipbuilding industry by reverse supply chain management to save a lot of time and logistics cost by providing quality the steel, machinery, equipment and other necessary tools.

4.4 Implementation of Strategies in SCM for improved Shipbuilding Industries

The strategies include overcoming the barriers to supply chain integration, measurement of supply chain management performance, improving supply chain network design, improvement of information sharing and managing the risk in the supply chain. These are consequently deliberated.

4.1.1 Overcoming the barriers to supply chain integration

Integration of inner industry process with outside supply chain network could be improved through sharing information, increase relationships and cooperation. The supports of supply chain integration are cooperation, partnership, information sharing, innovation of technology, and an important change is required to shift individual managing processes to integrate managing chains of process. Information transparency in integrated system confirms two-way information flow between the industry and suppliers as well as the industry and its buyer. The relationship among the partner plays a vital role; lack of trust creates difficulty to survive in the competitive market place. Now shipbuilding industry has chances to apply supply chain modernizations or technology to integrate with the other chain members. Training, knowledge and familiarization about SCM is
required before introducing recent technology or innovation to empower the entire supply chain partners and remove the fear of innovation-adjustment.

4.4.2 Improvement of information sharing

The effect of information sharing in SCM has become a more vital part with the current improvement in Information Technology (IT). Additionally, it becomes possible to conduct inquiries to focus on the effect of information sharing on product quality. Cooperation and integration in supply chain management (SCM) are the important concerns in the business perspective. Hence, supply chain partners require increasing their comparative advantages by sharing of information. Efficient inventory management, cost reduction, increasing clear visibility within the supply chain, removal of bullwhip effect, improved use of resource, improved output, efficiency of organization, developed facilities, initial problem finding, responsiveness, minimization of cycle time between order and delivery, enhanced tracking, market view, extended network, and enhanced capacity of the organization might be easily possible by the information sharing within the shipbuilding industry.

4.4.3 Improving supply chain network design

Supply Chain planning is closely connected with the concept of Network Design. The network design depends on the industry that selects the structure of its supply chain by the support of its commercial strategy. In competitive market, a shipbuilding industry’s network design must fulfill business goals at the lowest possible cost. An industry could attain the ability to save a large amount of logistics expenses and instantaneously progress in service levels by reforming its network design. So network design results an important effect on performance as this controls the supply chain formation and creates forces on the other supply chain drivers that can be used either for reduction supply chain expenses or to improve responsiveness of the industry. Facilities, locations, decisions and capacity allocation of network design have a long-term impact on the performance of the supply chain.

4.4.4 Supply chain risk management

Risk management in supply chain is the system that is planned to direct the contingency operations against uncertainty and possible interruption. There are various risk factors manipulating supply chain of the shipbuilding industry. The risk may involve with the financial flow risk, material flow risk and information flow risk. In the SC risk management of the industries should develop their own risk management model with the coordination or cooperation among the supply chain partners to ensure smooth operation and profit. Supply chain risk management process has to go through the risk identification, assessment, analysis and its treatment.

Supply chain risk management is a complex assignment. But it is essential for an industry to achieve its objective and vision.

4.4.5 Sustainable supply chain management

Ship owners are expecting from the shipbuilders the environment supportive vessels and to sustainable manufacturing process, as because of the ship owners are facing force by government and the International Maritime Organization to meet the terms of national and international environmental rules and regulations. Moreover, Bangladesh has a strongly established ship breaking industry. In order to equilibrium the commercial and environmental strategies of business, the supply chain might be prolonged to integrate reverse logistics in that way to recollecting the value of the end to the value added chain and re establishing it back into the supply chain through producing raw material, machineries and other components. These value added system might reduce the waste as well as support the green environment.

4.4.6 Measure the Supply Chain Management Performance

Measurement of the SCM performance is essential to understand the effectiveness and the efficiency. Cost containment and performance reliability concept are the two key indicators to measure the performance of SCM. Order book analysis, time, Cost-efficiency, profitability and managerial analysis are the prime components of measuring these basic two indicators of SCM performance.

5. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Shipbuilding industry might take a vital role in supporting national defense, upholding shipping and industrial development, increasing employment and foreign currency inflow. The Bangladesh shipbuilding industry has already achieved the international standard of constructing the small and medium category ships. It is
necessary to advance the productivity through directing training program, modernizing yard facilities, more integrated production technology and production process enhancement. Otherwise, it is hard to withstand in this competitive international market base industry in the long term vision.

In shipbuilding industry The eight supply chain management process represents as a basic supply chain system arrangement, the information and manufactured goods flows, and the SCM procedures those integrate tasks within the shipbuilding industry like other organizations. Material inventory process, production process and logistics process are playing the vital role in material flow. Information flow integrated this business process to the global community as well as smothering the organizational operation and the well organizing fund flow also essential part to keep the standard of the shipyard and might save from the delay delivery. Reverse supply chain might help to booming the ship breaking industry more effectively and create the national backward linkage industry in shipbuilding as well as support the environmental enhancement.

The study might open the door on the way for further research. That might bring more fruitful result for future development in SCM in shipbuilding industries.

5.2 Recommendations

It could be the recommendation that Supply chain management process should be implemented effectively and efficiently in the shipbuilding industry of Bangladesh for expertise in timely delivery the quality ship in a cost effective manner.

a. Eight supply chain management processes are one of the best examples of practicing the ultimate supply in the shipbuilding industry.

b. Smooth material management, information sharing and flow of fund must be ensuring in the industries as per supply chain planning.

c. There must have the certain supply chain network design in supply chain management of the industry.

d. In shipbuilding industry required to develop the supply chain risk management as the contingency plan of SCM

e. Reverse supply chain is necessary to introduce in the SCM for the sustainable environment development and extend the entire process under the concept of green supply chain management.

ACKNOWLEDGMENT

We are grateful to Almighty in which deserve, we are able to prepare this paper in present form. We want to give thanks to the authors of reviewed papers for a lot of information and data that were supportive for this study.

REFERENCE

Role of Non-Medical Personnel in Customer Satisfaction: in Tertiary Healthcare Service in Bangladesh

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Paper# ICBM-17-476

ABSTRACT: This Study aims to measure the effectiveness of the service quality offered by non-medical personnel which reflects through the level of patient satisfaction in tertiary healthcare service providers (Hospitals) in Bangladesh. In this entity (hospital), non-medical personnel are categorized as MLSS or member of lower subordinate staffs, in-charge of total hospitality management of any hospital. So they have to spend more than 75% time with the patients out of the total length of hospital-staying period. This study has strived to analyze the use of quality of service i.e. SERVQUAL model among 50 respondents in a public hospital in Dhaka based on essential determinants e.g. responsiveness, empathy, tangibility, reliability, and assurance through self-administered questionnaires using seven-point Likert scale. In literature review, it is revealed that no such study has been done yet on this issue in Bangladesh before.

Key words: Customer satisfaction, Non-medical personnel, Service-quality, Tertiary healthcare service in Bangladesh (Hospital).

I. INTRODUCTION

Patients’ satisfaction is the basic objective for healthcare service provider because this satisfaction is directly related to quality of services provided by healthcare industry as well as it has a great impact for the prognosis of the disease especially for the poor people like Bangladesh who are miserably deprived from their basic human rights. Tertiary care is specialized consultative health care, usually for inpatients and on referral from a primary or secondary health professional, in a facility that has personnel and facilities for advanced medical investigation and treatment, such as a tertiary referral hospital. The recent reformation of healthcare system has focused on finding effective ways to satisfy the needs and desires of the patients. Bangladesh suffers from both a shortage and geographic mal-distribution of quality-HR. Major challenges are - a centralized healthcare system, weak Governance structure and regulatory framework, weak management and institutional capacity, fragmented public service delivery, allocation of inefficient non-medical personnel, lack of regulation of the private sector-which employs 58% of all physicians, shortage of quality nurses and poor maintenance of medical facilities and equipment of the Ministry of Health and Family Welfare (MOHFW)

Cleanliness are responsible for keeping the entire facility clear, hygienic, fresh with enjoyable environment; the non-medical personnel are responsible for toilet/room-cleanliness, cleanliness of bed sheet and other supplied clothes, freshness or air and water supply, which may otherwise lead to hospital fatal infection or psychological discomfort. Better service-quality would help to ensure even better environment of the hospital and attract more and more patients through better quality management by the proper implementation of the proper service-quality as well as the gaps in the system of service delivery. All non-medical personnel must respect the equality rights of others and everyone are expected to by using the time positively and constructively, to be approachable and pleasant, to make others welcome and valued and showing respect to people from all ethnic, religious, cultural and social backgrounds.

I.1. OPERATIONAL DEFINITIONS:

a. According to World Health Organization (WHO) Hospital is defined as ‘an integral part of the medical and social organization which is to provide for the population complete health care, both curative and preventive; and whose out-patient services reach out into the family in its home environment. The hospital is also a centre for the training of health workers and for bio-social research’. In Bangladesh Medical Universities or divisional multi-specialized hospitals are the public tertiary healthcare centers as well as in private there are few hospitals like Apollo, Square or United.

b. Non-medical personnel- or MLSS (member of Lower subordinate Staffs as per our MOHFW) aya, cleaner, ward boy, porter, guard, clerk etc.

c. Patient satisfaction is a measure of the extent to which a patient is content with the healthcare which they received from their healthcare provider

II. RESEARCH OBJECTIVE

I.1. General objective---To assess the role of non-medical personnel for patient satisfaction in tertiary Healthcare service in Bangladesh.

I.2. Specific objectives
To assess the level of the patients-satisfaction based on the role of non-medical personnel (Aya/Cleaner/porters/ward-boys/clerks etc.)
To assess the dimensions of the rendered service-quality by non-medical personnel (Five dimensions of service-quality model.)

III. LITERATURE REVIEW
Fluctuating customer demands, improved expectations for higher quality of services and the global contest have formed an aggressive dimension to grab the market among different industrial sectors. Quality has become a key determinant in both industrial and service sector to expand maximum return on investments and also significantly contributed in decrease of cost [1]. Despite recent development in the Bangladesh health sector, there is still a great concern about the quality of the quality healthcare in the country [2]. Although nurses are meant to be doing nursing in the different hospital setting, however, a recent study by Hadley and Roques found that nurses in government hospitals spent only 5.3% of their working time in direct contact with their patients. Paperwork and indirect patient care occupied nurses for 32.4% of their time while 50.1% fell under the category of unproductive time such as time away from the ward and chatting with other nurses [3]. Cockcroft and Omer analysed the quality of Bangladesh healthcare services rendered by the doctors and nurses, therefore, these studies were limited to services related to clinical care in indoor, outdoor and emergency situation, but the role of non-medical staffs or MLSS e.g. Aya/Cleaner/ward-boy/porters etc. was largely absent in their study findings [4]. Social psychologists and marketing researchers studied of customer satisfaction broadly. Service quality has drawn a tremendous impact on business success from researchers and practitioners due to customer satisfaction, customer loyalty and profitability (Santouridis & Trivellas, 2010). Due to change of business strategy in health care industry Flood and Romm (1996) mentioned that the “redesigning” and “customer needs” must be continuously improved to maintain the good relationship of the service quality and patients satisfaction. Many researchers also mentioned “patient satisfaction” as their psychological or cognitive perceptions from the service that are provided form the health care center (Olson & Jiang, 2002) [5].

II. CONCEPTUAL FRAMEWORK:
It is based on SERVQUAL model which is divided into five dimensions of service-quality on which patient-satisfaction is based on [6]: e.g.

Reliability: The ability to perform the promised service dependably and accurately with consistency by NMP (Non-medical personnel) for the patient-satisfaction.

Assurance: The knowledge, courtesy, competence of NMP (Non-medical personnel) and their ability to convey trust & confidence for the patient-satisfaction.

Tangibles: The admirable appearance of NMP (Non-medical personnel) and communication style for the patient-satisfaction.

Empathy: The dimension of caring, communicating, understanding and accessing to patients of the NMP (Non-medical personnel) for the patient-satisfaction.

Responsiveness: The willingness to respond the patients’ needs promptly by NMP (Non-medical personnel) for the patient-satisfaction.


IV. MATERIALS & METHODS
5.1. METHODOLOGY: Sequentially the study follows both qualitative & quantitative techniques in respect of service-quality model and patient-satisfaction model.

5.2. SAMPLING: Because of the lengthy official formalities of the Ethical committees of the different tertiary hospitals and time constraints a total of 50 respondents were surveyed in a public hospital in Dhaka city. All adult, psychological consistent and interested indoor patients were the respondents.

5.3. DATA COLLECTION: A self-administrated questionnaire obviously translated into Bengali language in a public tertiary level hospital in Dhaka city for this study by a trained research assistant nominated by lead researcher
were disseminated after properly explaining with the promise of total personal confidentiality to be maintained. Questionnaire was divided into two parts; part one and part two. Part one of the questionnaires was consisted of five dimensions multiplied by three questions each and part two is based on their level of satisfaction by the non-medical personnel. Each chosen individual was asked to fill out the standard and close-ended structured questionnaire indicating their responses on a seven-point Likert scale ranging from 1 - Poor to 7 - Outstanding agree for each statement.

5.4. DATA ANALYSIS METHOD: Collected data were coded into SPSS for Principle Component Analysis in order to measure the service-quality of the non-medical personnel as well as to know the level of patient-satisfaction while Independent variables are Reliability, Assurance, Tangibles, Empathy & Responsiveness and Dependent variable is level of Patient-satisfaction. The collected data from all respondents were analyzed using descriptive analysis, reliability analysis and regression analysis. After computing the obtained result is as below -

III. DATA ANALYSIS --- based on:-

III.1. Predictors (constant), Tangibles3, Assurance1, Empathy2, Responsiveness1, Reliability3, Empathy3, Reliability2, Empathy1, Assurance3, Responsiveness3, Reliability1, Tangibles2, Assurance2, Responsiveness2, Tangibles1

III.2. Dependant Variable: Satisfaction1

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<td>Minimum</td>
<td>Maximum</td>
<td>Mean</td>
<td>Std. D</td>
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Predicted value--- 0.6249 4.2276 2.3200 .90586 50
Residual- -.84825 .77427 .0000 .36900 50
Std. Predicted Value---- -1.871 2.106 .000 1.000 50
Std. Residual- -1.915 1.748 0.000 0.833 50

Histogram

Depending Variable: satisfaction1

Regression Standardized Residual

List wise deletion based on all variables in procedure

1. Scale: ASSURANCE

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<td>Total</td>
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<td>100.0</td>
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Reliability Statistics

Cronbach's Alpha | N of Items
| .838 | 3 |

2. Scale: RESPONSIVE

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<tr>
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Reliability Statistics

Cronbach's Alpha | N of Items
| .915 | 3 |

3. Scale: RELIABILITY

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V. FINDINGS

All the variables had Cronbach's Alpha greater than or almost very near 0.70 which showed that the scale was reliable. The tangibility (α=0.945), reliability (α=0.683), assurance (α=0.838), empathy (α=0.701), responsiveness (α=0.915), and customer satisfaction (α=0.934) have the valid and acceptable reliability values. The results of adjusted R² reveal that there is a significant relationship between variables. The results regarding the Model Summary (R²=0.926, Adj.R²= 0.795 and Std.Error of Estimate=0.44298); In ANOVA (F=13.660) and in Residual statistics Predicted value of (SD=0.90586), Residual (SD=0.36900), Std. Predicted Value (SD=1.000) & Std. Residual (SD=0.833)

VI. DISCUSSION

The model of service quality and level of patient satisfaction discussed in this paper reflects the existing scenario that is prevailing in tertiary level healthcare in Bangladesh, the results may be used to improve service quality and patient satisfaction in the hospital environment in Bangladesh by sensitizing the authority of the healthcare providers for grooming up the non-medical personnel about caring of the patients for their satisfaction. For this sort of studies the researchers have to face many obstacles, e.g. in public hospitals of Bangladesh there are no distinguished HR department through which usually to get the access for study. But they have an ethical committee consists of clinicians who always bears a negative attitude regarding any study based on social science or organizational behavior. Moreover for such study in public hospital patients feel insecure to participate and on other hand the union or organization of non-medical personnel always take it in a negative way because directly or indirectly they are involved in speed-money or bribe or baksheesh to provide the patient good service though patients have to compromise with that situation in any way but the level of their satisfaction obviously use to decline. On the other hand in the private tertiary healthcare there are provision of HR department but study have to go under their surveillance. Five dimensions of the SERVQUAL model is basically based on technical and personal skills of the non-medical personnel, such as: negotiation and influencing skills, communication skills, personal development, performance, assertiveness skills, time management skills, stress managing skill, feedback skills, fire safety knowledge, manual and patient handling aptitude, basic Life Support training, soberness, smiling attitude, greetings style, socializing skill etc. But these must be rigorously managed by the top authority very tactfully because non-medical personnel are not properly institutionalized educated in Bangladesh and most of the time they are influenced by the vested groups who are inclined to political parties. According to Friesner, 2009, satisfaction measurement is important for three basic reasons:- 1. High levels of patient satisfaction with healthcare services cut down the cost associated with new client acquisition; 2. Satisfied patients are more smoothly retained and the value of an existing client usually increases with tenure. As a result, patient satisfaction is an exciting indicator of future financial performance; 3. The quality of customer care can only be enriched when care providers are familiar with how well they function on key patient criteria [12].

VII. CONCLUSION & LIMITATION

Healthcare delivery is a service based industry and patient satisfaction is the primary success factor in measuring the hospitals performance. The service quality is invariably related to patient satisfaction as investigated in this study, [13]. According to SERVQUAL is the approach to measure service quality and to compare customers’ expectations before a service encounter and their perceptions of the...
actual service delivered. There is urgent need for quality healthcare for any citizens of Bangladesh. Therefore, understanding this need of patients is crucial for the non-medical personnel in the hospitals. Failing to meet customers’ quality needs is not an option for any healthcare providers in anywhere. Developing a measuring-parameter for health service quality could significantly contribute towards service improvement. In the academic era, no study is 100% perfect due to lack of time, manpower, fund, logistic support, communication gap, bureaucracy, speed-money, hindrance by so called brokers, unions etc. especially in public healthcare system. As the study was conducted in a selected public hospital, thus it may be the portrait for the whole Bangladesh.

VIII. RECOMMENDATIONS

For proper service-quality by the role of the non-medical personnel in the tertiary public/private healthcare in Bangladesh, the following steps should be taken--

10.1 This study should be extended up to the gaps of the SERVQUAL model to figure out and correction of the loop holes in between the gaps.

10.2 Decentralization of tertiary healthcare service is needed instead of capital based system to reduce the load of patients’ pressure which is related to service quality also.

10.3 Healthcare authority must be aware and establish the proper norms & facilities for occupational health safety, hazards and automation of service rendered by the non-medical personnel.

10.4 Continuous feedback system should be established regarding the patient-satisfaction and that should be necessarily look-after & monitored.

10.5 Authority must be aware that for the best outcome or expected service quality by human being or non-medical personnel in return their job-satisfaction is to be ensured.

10.6 In Bangladesh in the public tertiary level healthcare service establishment of HRM department is needed for proper Hospital Administration or Management.

10.7 In every tertiary level healthcare service there must HR development department for continuous training & development of the service quality.

10.8 All civil servants must go the public tertiary healthcare service to make enquiry about the standard of the service quality during their own illness to see the patient-satisfaction level.

ACKNOWLEDGMENT

Prof. Dr. Syed Ferhat Anwar, IBA, University of Dhaka Mahmud Habib Zaman, North South University, Dhaka

REFERENCES

[1] Anderson and Zeithaml 1984; Parasuraman et al., 1985


APPENDICES

A. Type & Source of Information

- Collected primary, secondary, and tertiary information-hub

1. **Primary sources** are original materials on which other research is based, including:
   - interviews, surveys, and original research/fieldwork related to hospitals, and
   - research published in scholarly/academic medical related journals.

   (for the primary data collection ‘Informé Consent’ was needed for any interview-on PTO)

2. **Secondary sources** are those that describe or analyze primary sources, including:
   - reference materials from textbooks, and
   - books and articles that interpret, review, or synthesize original research/fieldwork.

3. **Tertiary sources** are those used to organize and locate secondary and primary sources.

   - Indexes – provide citations that fully identify a work with information such as author, titles of a book, article, and/or journal, publisher and publication date, volume and issue number and page numbers related to my study.
   - Abstracts – summarize the primary or secondary sources,
   - Databases – are online indexes that usually include abstracts for each primary or secondary resource, and may also include a digital copy of the resource.
B. Informé Consent

(Format in English but will be translated in Bengali)

Institute of Business Management (IBA)
Dhaka University

Assalamualaiqum,

I, Ghulam ShawkatHossain, a DBA student of the Institute of Business Management (IBA) Dhaka University, am conducting a case study on Role of non-medical personnel in customer satisfaction: In tertiary healthcare service in Bangladesh”
For this you are being requested to participate in an interview schedule. I am assuring you on the confidentiality of any information you provide and this is for pure study purpose only. You may have to spend around 15 minutes to finish this interview session.

Informed written consent

I (write your name) ………………………………………………have learnt on this interview and willingly taking part.

……………………………………

Signature/thumb print of the respondent
Basic Service Quality Model was followed:

Conceptual Framework:

- Reliability
- Assurance
- Tangibles
- Empathy
- Responsiveness

Independent variables:
Elements of the Service Quality based on people, process, physical evidence etc.

Dependent variable:
Based on patients’ perceived service quality

Level of patient satisfaction
### RELIABILITY

**Being interested to perform properly**

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<th>Good □</th>
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**Having the ability to handle any odd situation**

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**Having the proper knowledge to handle the hospital equipment**

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### EMPATHY

**Showing care to the patients genuinely**

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**Showing compassion to the patients’ feeling genuinely**

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**Behaving with patients humanely**

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### TANGIBLES

**Being concern about his own physical appearance**

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**Being concern about hospital medical equipments’ cleanliness**

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**Being concern about hospital cabin/ ward’s cleanliness**

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### ASSURANCE

**Being possessed positive attitude**

<p>| Poor to Fair □ | Good □ | Good to Very Good □ | Very Good □ | Very Good to Excellent □ | Excellent □ | Outstanding □ |</p>
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Being possessed positive approach to any situation

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Being possessed honest mentality apparently

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**Responsiveness**

Really listening properly to any patient’s call

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Really attentively feedback to any patient’s call

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Really keeping notes for any patient’s need to feed back later

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**Level of Patient-Satisfaction**

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Corporate Image and Product Brand Identity Mix: Study on FMCG companies in Bangladesh

Md. Moniruzzaman Khan, DBA Candidate, and Dr. Syed Ferhat Anwar, Professor, Institute of Business Administration (IBA), University of Dhaka.

Paper# ICBM-17-465

Abstract: This study pinpoints on the extent to which the various factors of corporate brand identity as acknowledged in the literature are perceived to make a contribution to corporate brand image formation. To date, a wide-ranging measuring instrument that theoretically includes all the corporate brand identity elements perceived to be of importance in corporate brand image formation has not yet been developed, especially in Bangladesh arena. Considering the very outcomes of the research, the study aims to propose a theoretical frame work for forming a measuring instrument that encompasses all the corporate brand identity elements seeming significant in corporate brand image formation as perceived by Bangladeshi corporate bodies. Four parameters were acknowledged to be perceived as significant for corporate brand image formation, as of transformational leadership and transitional management excellence, brand positioning and differentiation strategy, brand equity and human resource branding.

Key words: Brand, branding, Brand identity, Brand image, Brand reputation, Corporate identity, Corporate image, Corporate reputation, Corporate brand identity, Corporate brand image, FMCG

1. Introduction:
The purpose of providing a theoretical frame work for forming a measuring instrument is to make organizations able to evaluate the role of their corporate brand identity in corporate brand image formation among their stakeholders. In addition to, this study follows both qualitative (Interpretivism) and quantitative (positivistic) study sequentially.

This researcher also points to which of corporate brand identity elements incorporated in the four categories are perceived to be substantially significant in corporate brand image formation by Bangladeshi FMCG companies. Most importantly, it provides assumptions on how these corporate brand identity components are supposed to work in a synergistic way to excel in corporate image formation based on the research result. The implication of this paper may serve entrepreneurs and CEOs for sustainable corporate branding in a changing business scenario.

1.1 Working Definition:
a. Brand – a representation of tangible and intangible features that differentiate the organisation's products, and the values associated with the brand, thereby serving as mechanism used by organisations for achieving competitive advantage (Kumar 2003:58; Buckingham 2009:57).

b. Branding – the methods employed by an organisation for positioning the brand in the market in order to achieve sustained competitive advantage (Balmer 2002a).

c. Brand identity – the brand's unique vision, aims and values, the needs it is fulfilling and its field of competence (Kapferer 2004; 2008).

d. Brand image – a construct that develops from how external constituencies perceive an organisation, based on the attributes which they subjectively associate with an organisation, its products and services and which are established in stakeholders' minds through planned or unplanned communication activities and employee behaviour (Nandan 2005:267).

e. Corporate branding – a more complex process than product branding which is aimed at managing the organisation's interactions with its various stakeholder groups by creating precedence over the products of competitors through an emphasis on the product's valueadding benefits (Schultz 2005:183). (1)

f. Corporate brand identity – the tangible and intangible features that differentiate the organisation, its products and services based on the functional and symbolic value of a product or service which is established in consumers' minds through planned strategic communication and
behaviour in order to position the brand favourably in the marketplace (Aaker 2004a; Blombäck 2005). (2)

g. Corporate brand identity mix – the tangible and intangible associations transmitted to internal and external stakeholders through a combination of strategy, structure, communication and behaviour in order to position the organisation, its products and services favourably in the marketplace (Aaker 2004a). (3)

h. Corporate brand image – the total set of perceptions which stakeholders form about a brand according to the unique functional and emotional attributes associated with the brand (Aaker 2011:49-51) (4)

i. Corporate identity – Corporate identity encompasses visual elements as well as all other forms of communications to the public (Baker and Balmer 1997; Melewar et al. 2006; Cornelissen et al. 2007). It forms a basis on which brand, image and reputation are built (Melewar et al. 2006; Balmer and Gray 2003).

j. Corporate image – the total set of perceptions, beliefs and impressions that an organisation creates in the minds of its stakeholders and publics by means of tangible identity elements (Topalian 2003:1120).

1.2 Objective of the study

1.2.3 Broad objective/Principle objective/ General objective:

- To identify corporate brand identity that may contribute to corporate image formation.

- Specific objectives:
The objectives of this study are both exploratory and descriptive and are as follows:

a. Descriptive objective – to identify and describe the corporate brand identity elements that are perceived to be mandatory and to contribute to corporate brand image formation.

b. Exploratory objective – to explore the extent to which the perceived mandatory corporate brand identity elements are perceived to contribute to corporate brand image formation in organizations. An additional exploratory objective was to identify solutions for adjusting corporate brand identity elements in order to improve corporate brand image among the population’s different stakeholder groups.

1.4. RESEARCH DESIGN

The research design used for data collection and analysis in the current study was mainly exploratory in nature. In the case of exploratory or qualitative research, deductive research designs are used with the aim of investigating many cases in order to induce general patterns or relationships. The researcher’s epistemological position was to ground the research in the business world of the business actors being investigated. Therefore, data collection and analysis focused on the participants’ construction of reality, their experiences and knowledge concerning business action and their way of conceptualising and giving meaning to their social world.

1.4.1 Data collection method

A questionnaire is used to collect the data. The initial questionnaire are revised to ensure proper wording, length and sequencing of the questions. The data will be collected from different aged and professional male and female CEOs of different company from different area of Dhaka City.

1.4.2 Questionnaires:

Respondents from Dhaka especially four areas will have the opportunity to gain access to the questionnaire. The questionnaire is targeted to the CEOs within the assigned sample. It is a close-ended questionnaire since it will provide numerous options from which the respondents will have the freedom to choose (Saunders et al. 2007).

1.4.3 Group Discussion:

A group of people within the sample population has been chosen to participate in a group. At least 10 participants are expected for this interview. Group discussion helped to enhance some of its response with details and reasons making it more descriptive and providing the scope for further analysis in the research.

1.4.4 Personal Interview:

Market experts are contacted. However, the subject of the research topic demands that the experts consulted should hail from corporate branding background in order to maintain the relevance of the research. The experts contacted can be a member of any organization from the corporate branding sector or a neutral individual with sufficient knowledge in corporate brand.

1.4.5 Secondary Data:

Saunders et al (2007) states that secondary data has the ability to provide the main source of answers to the research queries and would be able to address the research objectives. The information when retrieved
from secondary data will be used to compare the past trends affiliated with the research topic and to support the analysis made on the data collection results through identifying certain similarities or disparities found in the secondary data source. Comprehensive data found in Mintel, Emerald Online and Journal for Marketing Research (JMR) would be a useful source.

1.4.6 Sample selection
In theoretical terms, a sample is defined as a “subgroup or part of a larger population” (Saunders et al., 2007). The sampling process will be an important step for this research because the population targeted is relatively large. The researcher should therefore consider probability sampling since, by definition, it only constitutes those particular group of people to whom the research will be targeted (Saunders et al. 2007). In this case, the age group of 35-65 years is considered because within this age group the research will cover from young to middle aged consumers and consumers with family households as they were the focus of the data collected for the literature review.

Non-probability convenience technique is used to collect data from 10 CEOs and among these 5 CEOs from multinational companies and 5 CEOs from National companies.

2. Literature Review:

A brand of a product, service or place identifies the source of its owner and signifies its tangible and intangible offerings that helps buyer to make informed purchase decision (Kotler & Keller, 2012, Anholt, 2007). A brand is a "Name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers." (AMA, nd). According to Keller (1993) brand is embodiment of knowledge consisting of awareness and image of the product, service or entity that it refers to. Consumers react more (less) favourably to the product, price, promotion or distribution of the brand than they do to the same marketing mix elements when it is attributed to unnamed version of the product. The value of brand is signified by brand equity which is the added value endowed on products and services (Kotler & Keller, 2012). Positive brand equity contributes to enhanced revenue, lower costs, and greater profits for a brand (Keller, 1993:8).

Managing the corporate brand requires a wider perspective, compared with the marketing communications focused product brand. Hatch & Schultz (2001) encourage companies to engage with the idea of corporate branding in order to correct both consumers’ and practitioners’ perceptions of branding. Rather than being merely product-focused, corporate branding insists upon the use and implementation of a value foundation from which the brand is seen to summarise the additional values that are intrinsic in, or associated with, the corporation, its products and services (Tilley, 1999; Urde, 1999). The development of values held internally and manifested to external stakeholders ensures that the corporate brand is a guarantee of quality and an insurance against risk (Balmer & Gray, 2003).

Responsibility for the brand lies with the whole organisation, not just the marketing department. The perspective is on the long term and the values are Responsibility for the brand lies with real, not merely contrived for advertising purposes. There are the whole organisation not just the wider communication channels whereby all the actions of the marketing department. organisation’s activities help to communicate the corporate brand values. Issues such as identity, corporate strategy and vision from the perspective of multiple stakeholders within the wider macro-environment help to differentiate the modern corporate brand from the product brand (Balmer, 2001a). Corporate brands build associations based upon their heritage and future vision (Olins, 1989). Ind (1997) discusses the importance of social responsibility or the ethical imperative of the corporate brand. The organisational structure, physical design and culture help to support the meaning of the corporate brand internally and externally (Hatch & Schultz, 2003). The philosophy underpinning the corporate level brand allows the principles to apply also to cities, regions and even countries (Ind, 1997). Chapter 8 deals with the wider associations of corporate branding.

This section looks at a number of researchers’ views on corporate identity starting with visual identity. Dowling (2001) defines corporate identity as the symbols and names used by an organization to identify itself to people. According to Dowling, corporate identity helps people find or recognize an organization. Ind (1997) refers to identity as the outward manifestation of an organization. McDonald’s, Disney and Nike provide well-known examples. Nike doesn't even need to use its name anymore; the "Swoosh" logo is sufficient. Corporate identity as visual identity is probably most recognized and encompasses a variety of media. Gregory and Wiechmann (1996) list seven broad categories of materials that can carry out a firm's name for instance: stationery, literature, transportation, packing, architecture, signs and marketing/sales. These may include letterhead, business cards, news releases, annual reports, sales
bulletins, cartons, labels, stamps, logos, trucks, ships, business cars, building design, interior, landscaping, uniforms - the list is endless. According to Hatch and Schultz (2000) sound, touch and smell (The Body Shop, for example) have recently been added to this list. Optimally, organizations should not choose these media elements in a haphazard manner. They are core to the organization, and it is extremely important how a visual identity mix is chosen. According to Melawar (2003), however, corporate identity also encompasses corporate communication, corporate design, corporate culture, behavior, corporate structure, industry identity, and corporate strategy. This taxonomy reflects the multidisciplinary nature of the concept and the struggle to understand what it is.

Balmer (1998, p. 988) To acquire a favourable image and reputation through the management of philosophy and ethos, personality, people, product, price, place, promotion, performance, perception and positioning.

Maathuis (1999, p. 5) To create and maintain a favourable reputation of the company and its constituent elements, by sending signals to stakeholders using the corporate brand.

Keller (2000, p. 115) To build strong, favourable, and unique associations about the corporate brand in memory of consumers, customers, employees, other firms or any relevant constituency to the corporate brand entity.

Hatch and Schultz (2001, p. 130) To align vision (i.e. top management's aspirations for the company), culture (i.e. the organization's values, behaviours, and attitudes), and image (i.e. the outside world's overall impression of a company).

Kernstoket al. (2004, p. 13) To establish, build and manage the corporate brand, to design the brand architecture, as well as to manage the company's brand portfolio.

Landor Associates (2004) To develop both a corporate brand (all the characteristics of a company, tangible and intangible, that make the offer unique) and a brand identity (its outward manifestation).

HR Branding and Leadership influence for corporate image creation.

CRM influence for corporate image creation.

Brand equity influence for corporate image creation.

Brand differentiation influence for corporate image creation.

Brand innovation influence for corporate image creation.

Internal branding influence for corporate image creation.

Corporate brand personality and product brand personality affect for corporate image creation.

**Conceptual Framework:**

3. Data Analysis and Findings:

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<th>No</th>
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<th>Score</th>
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<tbody>
<tr>
<td>1</td>
<td>CEO, Unilever Bangladesh Ltd.</td>
<td>Corporate vision, Brand communication, Visual identity, Brand equity, Brand differentiation, Brand innovation, HR Branding and Leadership, CSR, CRM, Internal branding, Brand personality</td>
<td>6</td>
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</table>
4.6 Discussion and Conclusions: In the constantly changing business environment in which organisations operate these days, it is essential that organisations determine the role of their corporate brand identity in corporate brand image formation, since a favourable corporate brand image is a prerequisite for brand equity which can give an organisation a distinct competitive advantage. To achieve a favourable corporate brand image, organisations must determine the elements of corporate brand identity that contribute to corporate brand image formation and analyse the manner and extent to which each of these elements is perceived to contribute to corporate brand image formation. Considering the Bangladesh perspective, mostly corporate vision, Brand communication, HR branding and Brand innovation are playing pivotal role for corporate image creation which may excel for suitable corporate identity.

References and Bibliography of the study

A: Bibliography

B: Journals and Articles Reference


Abstract - This paper talks about the current status quo under Corporate Social Responsibility and why environmental accounting is necessary in order to make a business more profitable in the long run. The most important agendas that it discusses here are why are companies now incorporating “sustainability reporting” in their internal control system in accordance with Global Reporting Initiative (GRI) standards, how are they internalizing the externalities and in what ways are they trying to come up with methods of accounting for carbon emissions in a true and fair manner. Overall, it has been found that the use of GRI along with Integrated reporting (IR) help to create corporate value and encourage transparency and credibility.

Keywords - Sustainability Reporting, GRI, CSR

INTRODUCTION

Would you want to live in a world where nature is given importance because nature helps sustain life? Or would you prefer to live in a society where the environment and the ecosphere have been damaged, causing serious global climatic changes, killing many people, polluting food and water supply as well as pushing animals and insects in becoming extinct? The primary source of raw materials that a business uses is finite and are depleting day by day. Once these resources are all used up, the current cycle will come to a halt and if not taken care of, the accountability for environmental destruction will not be present anymore. The amount of waste produced by these industries is depleting the environment on a daily basis, threatening the lifecycle of plants and animals and contributing towards a global climate change. Therefore, global environmental movement encourages companies to integrate practices that carefully consider the impact of their activities on the environment and hence extending the limited natural resources further. It is also to be kept in mind that consumers nowadays have an inbuilt “personal social responsibility” and are therefore consuming ethically by investing their money in greener companies. The companies are thus required to be socially responsible by designing their accounting policies in consistent with social expectations and internalize the externalities to account for the harm caused to the atmosphere by the firms.

What is CSR?

In a world that we live in, all businesses are profit-oriented with no real intention to voluntarily serve the environment. Corporate Social Responsibility (CSR) has therefore been introduced to emphasize the corporation’s responsibility towards a greater body of stakeholders other than the shareholders. As European Commission puts it ‘a company can be regarded as socially responsible when it will go beyond the statutory obligations and voluntarily take an active part by making additional investments in environment and human capital’. It focuses on how companies should manage their internal control and promote environmental accounting by considering the impact their activities might have on employees, shareholders, customers, suppliers and all other stakeholders, including the environment as a whole.

Types of Reporting

In contrast to the traditional financial reporting, Global Reporting Initiative (GRI) has set standards for corporations to publish a non-financial sustainability report in terms of the environmental, economic and social impacts (see Figure 1.0) that its activities have on the local community. It would clearly illustrate their commitment to a sustainable environment and how they are “Internalizing the External Costs” and therefore innovating greener ways of managing the activities more effectively and efficiently.

Figure 1.0 Performance Indicators for the three aspects of sustainability reporting
Another way of reporting could be the sudden development and demand of integrated reporting. Although sustainability accounting standard has a foundation for integrated reporting, they tend to present the social, economic and environmental impacts separately in separate single documents. Whereas, integrated reporting combines the impacts of all these spheres, both financial and non-financial, into one single report for better value creation (see Figure 2.0 below) and this will be discussed further in the latter part of this paper.

Stages of Sustainability Reporting

Stage 1: Why report?

An effective sustainability reporting cycle, which includes a regular program of data collection, communication, and responses, should benefit all reporting organizations, both internally and externally.

Internal benefits for companies can include:

- Companies can better evaluate their risks and opportunities.
- Enhances management strategies, business plans and policy procedures for the long-run.
- Undertake streamlined processes which will help decrease costs and improve productivity.

External benefits can include:

- Possibility of eradicating the negative impacts of the firm’s activities on the environment and the society.
- Reputation of company is improved as it portrays the true value of the company, tangible and intangible assets and therefore bringing brand loyalty to the way stakeholders comprehend these reports.

Sustainability Reporting improves transparency, can support market function efficiently and indicate the well-being of an economy; and help drive growth by all bodies towards a smart, sustainable and inclusive growth. Organizations can utilize reports to convey their risk analysis strategies and advance their business.

There are few advantages listed below for companies:

- Helps to build trust
- Streamlining processes
- Improved vision and strategy
- Helps in cost reductions
- Gives company a competitive edge

Also, companies go for sustainability reporting as they are bounded by the socio contract and believe in legitimacy theory and try to establish an image in public by disclosing environmental information in reports.

Stage 2: Whom to report?

Sustainability reporting aims to reach to their stakeholders based on philosophical objectives of the company for engaging in CSR motives. The choice of stakeholders or the target audience also depends on the sector in which
the company operates. For example, an oil company whose sales are largely in competitive markets and operations require highly skilled employees would probably be among economically powerful stakeholders. It is recommended to broaden the range of stakeholders for engaging more people in CSR activities, which will increase the company’s reputation in the market.

Stage 3: What to report?

Once the stakeholders are identified, another stage is to understand the social, economic and environment of the stakeholders. It is an important stage as the stakeholders’ expectations will be met by the organization. Only when the priorities of stakeholders are known, then the company begins to produce the sustainability report that addresses all the issues. The proper information needs to be focused on. If a company addresses the concerned issues in its report, it is more likely to increase the stakeholder’s engagement. Consequently the report would be an effective tool to hold an organization and its managers with crucial stakeholders.

Stage 4: How to report?

The traditional financial accounting does not meet the needs of socio and economic environment disclosers but a complete sustainability report would consider such issues as the carrying capacity of the eco system, impacts on the future generations, climate change and other environmental factors.

The GRI reporting process helps a company to implement and create an efficient sustainability report which reaches the target audience or stakeholders. GRI’s Standards helps the organizations and governments to understand and communicate the impact of business on critical sustainability issues.

Accounting for actual emissions

The amount of actual emissions needs to be measured when recording. One of popular framework is under ‘Greenhouse Gas Protocol’. Emissions are reported in three scopes:

1) **Scope 1**- Emissions directly from sources owned or controlled by a company, such as vehicles and equipment.

2) **Scope 2**- Indirect emissions from sources consumed by the company in the process of production, such as purchased electricity.

3) **Scope 3**- Other Indirect emissions caused by the activities of the company, such as business travel.

**Figure 3.0 Measuring for ‘Actual emission’**

**Sustainability Reporting Guidelines**

Compared with traditional accounting, sustainability accounting focuses more on the disclosure of non-financial information about a firm's environmental and social performance to external investors (Herzig, 2006). Meanwhile, this non-financial information will support the company management in making internal decisions and creating new policies, which will have an effect on future generations to satisfy their own needs at environmental and social level (Gray, 2010). With the increasing environmental issues, such as global warming, people became anxious until the bank crisis in 1997. They realized traditional accounting standards could not meet the expectations in new century. Therefore, many organizations were established and sustainability accounting standards were released one after another.

By now, the most commonly used framework adopted on an international basis is the Sustainability Reporting Guidelines, issued by the Global Reporting Initiative (GRI). GRI, as a non-profit organization, believes that reporting on economic, environmental and social performance by all organizations will be as comparable and routine as financial reporting in the near future. Information asymmetry is the most serious challenge for sustainability accounting. The information disclosure by companies is always according to the stakeholder’s expectations. Moreover, different industries and enterprise have their own characteristics. Therefore, same format and content of information disclosure cannot be applied to all. Through the former three versions’ practice, G4 has been obviously developed in contrast to the former GRI reports. ‘Standard disclosures’ is the most important progress in G4. It defines the core sustainability issues to different organizations and enterprises on the
environment, society and the economy. Furthermore, in order to avoid the pointlessness in information discloser, organisations that are applying the GRI Guidelines are required to use specific methods of information disclosure with concrete indicators. Consequently, as of 2015, 7,500 organizations and businesses used GRI Guidelines for the sustainability reports (cnbcafrica, 2015).

Integrated Reporting

Another relatively recent development to the sustainability reporting arena is integrated reporting (IR). Similar to G4, IR dedicates itself to encourage businesses and institutions to report their important, accurate, completed, relevant and reliable information of environment and society. The objectives of IR are establishment of new standards for corporate communication and complement of financial and sustainability reports (Integratedreporting.org, 2015).

The various forms of capital operations attribute to the success of most institutions. In this framework, capital includes finance, manufacturing, intelligence, human, social and the natural capital. Actually, natural capital means environment. However, this theory is not being well accepted by stakeholders; because environment does not exactly match the definition of capital.

The most significant goal of IR is value creation. Nevertheless, some stakeholders are not concerned with value creation. Instead, their focus is on increasing transparency and supervising enterprise environmental problems are what they really focus. Some people argue that IR is not sustainability accounting. On the other hand, several large-scale enterprises agree with the value creation sustainable idea from IR. As a result, over 90 businesses are willing to attend the IR program such as Coca-Cola, Microsoft, Hyundai and HSBC.

Accounting practices for emission reductions

To solve the climate change problem, many governments implemented ‘cap-and-trade’ scheme to control carbon and other specific emissions. For example, the European Union started to operate Emissions Trading System since January 2005. Due to complexity on the accounting practices of ‘cap-and-trade’ model, no systemic conclusion has been reached in IFRS or US GAAP.

The IFRIC 3 approach

This approach was addressed by ISAB when issuing ‘IFRIC 3 Emission Rights’ in 2004. However, the IASB withdrew this interpretation in 2005 because of its significant accounting mismatches.

Under the IFRIC 3 approach, the received emission permits are recorded under intangible assets initially measured at the fair value, but the entity can choose fair value or cost model going forward. The difference between the nominal amount paid for the government grant and the fair value is recognized as deferred income. A liability equals to emissions that have been made and it records when happening.

This approach leads to some mismatches: (1) if the cost model is adopted to value assets, liabilities can be measured at the fair value, (2) if the fair value model is adopted to value assets, the changes of assets will be recorded in equity, but the changes in liabilities will be recorded as expenses in the income statement, (3) permits and emissions are recorded at different time of the financial year.

Net liability approach

Due to mismatches, many companies are unwilling to choose the IFRIC 3 approach. Instead, net liability approach is a popular choice in Europe. Net liability approach is relatively simple to practice. Emission permits purchased or granted are recognized as intangible asset at their nominal amount, and if permits are granted for free, then they do not need to be recorded. The entity only records liabilities when actual emissions are larger than the allowances the entity holds.

Government grant approach

Government grant approach follows the IFRIC 3 approach where the permits are received. However, government grant approach selects different method when actual emissions happen. The obligations of emissions under liabilities are measured by the initial corresponding amount of permits at the fair value.

As there is no compulsory method, management need to make their own judgment to design and apply accounting policies. Management need to consider how to make the statement relevant and reliable, and also consider the impact of accounting policy on the perceived performance of the financial position and profit ratios. From this phenomenon, we can see that the divergence of approaches reduces the transparency and comparability of financial statements.

CONCLUSION

A rising number of companies see sustainability reporting as a means to drive more innovation through their businesses and products to have a competitive advantage in the market. On the basis of advantages discussed in the report and different approaches of triple bottom line reporting undertaken by organizations, it is clear that companies are bringing greater value to the society. Every company is stepping up to report sustainability as primary tool to connect to the society by which it creates a win-win situation got companies and stakeholders. Though few companies are not transparent enough , but at least with entering into sustainability and taking first step shows us that world is advancing and becoming greener day by day.
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Study on Occupational Health Hazards of Selected Tea Gardens Workers in Sylhet, Bangladesh

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Abstract: Tea industry brings lot of foreign currency for Bangladesh. It is an essential industry well-liked, refreshing no intoxicating widespread drinks. Tea was first cultivated in China. At the same time it was also started to grow in southeast India. Day by day the use of tea has expanded in the world especially in Europe, when the communication was established between Asia and Europe. In Bangladesh first tea garden was established in Malnicherra, Sylhet in the year 1854. At present there are 162 tea gardens in Bangladesh. Five types of companies are involved in tea cultivation in Bangladesh. Sterling Company, National Tea Company, Bangladesh Tea Board, Private LTD Company and Proprietary. This research paper focuses on the causes of vulnerability of the tea workers to various occupational health hazards, discussion on effects of occupational health hazards upon the occupational and social lives of the tea garden workers and suggestions for improving the occupational health of the tea garden workers in the selected three tea gardens namely Lakkatura, Khadim and Malnicherra tea gardens situated in Sylhet, Bangladesh.

Keywords: Health, Hazard, Workers, Safety Environment and Tea Garden.

I. INTRODUCTION

Occupational health and safety is posited to be an area that is concerned with the health, safety and welfare of employees. It is further asserted that one of the objects of occupational health and safety programs is to foster a safe and healthy working environment. The aforementioned programs may reach out to protect other stakeholders in the concerned sector [1]. Occupational safety and health is argued to be important from moral, legal, and financial perspectives. It is exemplified that employers have moral obligation to reasonably care for their employees. Furthermore, the Government formulates statutory laws to regulate health and safety at the workplaces. In the same light, appropriate occupational safety and health programs can go a long way to minimize costs associated with employee injuries and illnesses, medical care, sick leave, and indeed disability benefit costs. Occupation and health are closely related. Occupational health aims at prevention of disease and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations. The Joint ILO/WHO Committee on Occupational Health, gave the following definition. “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 prevention among workers of departures from health caused by their working conditions; 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 equipment, and, the adaptation of work to man and of each man to his job” [1].

The occupational environment of the worker cannot be separated from his domestic environment. Both are complementary to each other. Stress at work may disturb his domestic life just as stress at home may affect his work [2]. Tea is consumed in about 100 countries and India is the largest producer and consumer of tea in the world [3]. Assam is the largest tea producing state in India and contributes about 60 per cent of the total production of India [4]. Tea is an important agro-industry of Assam, which contributes immensely to the state’s economy [5]. Tea cultivation in Bangladesh developed concurrently with the northeast Indian tea during early part of 19th century. Bangladesh tea grows in the three fairly divergent ecological zones, namely Surma valley in greater Sylhet, Halda valley in Chittagong and Karatoca valley in Panchagarh district [6]. Tea ecosystem is a complex agro-ecosystem. It comprises tea, shade trees, green crops, forest etc. Obviously the intensive monoculture of a perennial crop like tea over an intensive cultivated area during last 160 years had formed a stable tea ecosystem for widely divergent endemic or introduced pests. Moreover, a characteristic feature viz. the performance of shade trees, ancillary crops, forests, an uniformity of cultural practices such as sequential pruning cycles, weekly plucking rounds, weeding, mulching etc. have a greater impact on the subsequent colonization, stabilization and distribution of pests [6].

II. OBJECTIVES

The objectives of the study are as follows (i) to find out the various occupational health hazards faced by the workers of the surveyed tea estates, (ii) to find out the effects of the health problems of the workers upon their occupational and social lives, and (iii) to suggest measures for mitigating the occupational health hazards of the tea garden workers.

III. LITERATURE REVIEW

G.M.R. Islam, M. Iqbal, K.G. Quddus and M. Y. Ali in their paper titled “Present status and Future needs of Tea Industry in Bangladesh ” tried to focus on the present condition support required for tea industry in Bangladesh.
They tried to give information about tea production in the world, tea export, tea process and tea marketing, environment protection etc. Park. K in his Text Book of Preventive and Social Medicine tried to focus on the preventive and social medicine in India [8]. S. Mohan and Dr. P.R. Muthuswamy in their research paper discussed the work environment in the tea industry, factors influencing the satisfaction in the work place, identified the problems faced by the employees [9]. Dr. Horen Goowalla in his research paper tried to study the impacts of the industry on sustainable development. He also tried to analyze the present roles and responsibility of Tea Industry [10].

IV. RESEARCH METHODOLOGY

The study has been mainly conducted with the help of a questionnaire prepared for the purpose. Queries relevant to the theme under study has been included in the questionnaire like income pattern, housing conditions, source of drinking water, health and safety measures available to the workers of Khadim tea estates, health problems of the workers, etc. Secondary information on the subject has been collected from sources such as books, journals and the Internet. The additional information has been thoroughly examined only to build up a strong perspective towards examining the topic. Looking from various angles enables a range of views to be considered in critically analyzing the topic under study. The data collected through the questionnaire has been analyzed and appropriate statistical methods and techniques including bar diagrams, column diagrams, pie charts have been used wherever possible for interpreting the findings of the study.

V. ANALYSIS AND DISCUSSION

The occupational health hazards of tea garden workers of three selected tea gardens can be gauged by the social and economic facilities available to them such as wages, housing facilities, etc., by the health facilities available in the tea gardens, safety measures adopted in their working environments, etc.

A. Socio-Economic Settings of the Workers of three Selected Tea gardens

Nature of Work: At Khadim Tea Estate, there are 840 permanent workers and 630 temporary workers. Among the permanent workers 80 workers works in the factory and 760 workers works at the garden. There is no division of labour. A factory worker is shifted to garden works in every few days of interval. The surveyed workers are engaged in various types of work, as leaf pluckers, pesticide sprayers, workers of the tea factory located inside Khadim Tea Estate, bungalow workers working as cook, servant, chowkidar, labourers, etc.

At Lackatoorah Tea Estate, there are 552 permanent workers and no temporary workers. Among permanent workers 80 works in the factory and the rests works at the garden as leaf pluckers, pesticide sprayers etc and at bungalow. Types of workers of the surveyed workers of Khadim, Malnichera and Lackatoorah Tea Estates are shown in Figure 1, 2 and 3 respectively, where leaf pluckers are the maximum and next maximum workers are factory workers.

![Fig.1: Types of workers of the surveyed workers of Khadim Tea Estate.](image1)

![Fig.2: Types of workers of the surveyed workers of Malnichera Tea Estate.](image2)
Income: The Income for the surveyed temporary and permanent workers of the surveyed gardens are same and its 87tk/ day. Housing: The permanent and temporary employees of Khadim, Lackatoorah and Malnichera Tea Estates are provided with quarters, which are Assam Type houses.

VI. HEALTH AND SANITATION FACILITIES AVAILABLE AT KHADIM TEA ESTATES

Tea workers, like any other industrial workers are prone to accidents at work. Therefore, readily available medical and emergency services help in giving prompt medicine and treatment to the workers.

A. Health Facilities

Khadim Tea Estate has a hospital inside the tea garden manned by three doctors, three nurses and one compounder. There is no Out Patient Department (OPD) in the hospital. Malnichera Tea Estate has a hospital inside the tea garden manned by one doctor, two nurses and three compounders. There is no Out Patient Department (OPD) in the hospital. Lackatoorah Tea Estate has a hospital inside the tea garden manned by one doctor, two nurses and two compounders. There is no Out Patient Department (OPD) in the hospital. Sanitation Facilities: Most of the surveyed workers of Khadim, Lackatoorah and Malnichera Tea Estates have sanitary Latrines. Hygiene: Hygiene influences the health of a population. The surveyed respondents wash their face and brush their teeth daily. They use soap regularly for washing purpose. Surveyed workers drink tube well water. No tube well is identified to be affected with arsenic. Using Mosquito Nets: Using mosquito nets helps in preventing malaria. More than 50 percent of the surveyed workers of Khadim Tea Estates use mosquito nets while sleeping. While more than 65 percent of the surveyed workers of Malnichera and Lackatoorah Tea Estates use mosquito nets while sleeping.

Visiting Doctor When Sick: When the workers of the surveyed tea estates fall sick, they usually visit the garden doctor or doctors (outside the tea garden) and pharmacists available in nearby pharmacies and hospitals.

VII. OCCUPATIONAL HEALTH HAZARDS FACED BY THE WORKERS OF SURVEYED TEA ESTATES

A. Physical Hazards

Tea garden workers reported feeling some form of inconvenience in their working environments on account of heat, cold, rain, light, noise, vibration, etc. in the following, column chart has been prepared for 80 surveyed workers and the percentage for certain physical hazard is given with respect to the total number of surveyed male or female workers. From Figure 4, 5 and 6 respectively for Khadim, Malnichera and Lackatoorah Tea Estates it is seen that heat, cold, noise, rain, and vibration are mostly faced by the interviewed workers. Heat and cold affects the workers most.
Figure 6: Physical hazard faced by the surveyed workers of Lackatoorah Tea Estate.

The pie chart as presented in Figure 7, it is seen that among the surveyed workers 33% of Malnichera, 33% of Lackatoorah and 34% of Khadim Tea Estates suffer from various physical health hazards.

Figure 7: Physical hazard comparison of the surveyed workers at Khadim Tea garden, Malnichera Tea garden and Lackatoorah Tea garden.

B. Biological Hazards

Tea garden workers are susceptible to a number of biological hazards like insect bite, fungal infections and malaria, among others. In the following, column chart has been prepared. Among 80 surveyed workers 61 workers are found suffering from different biological hazard. The pie chart as presented in Figure 8, it is seen that among the surveyed workers 32% of Malnichera, 38% of Lackatoorah and 30% of Khadim Tea Estates suffer from various biological health hazards.

Figure 8: Biological hazard comparison of the surveyed workers at Khadim Tea garden, Malnichera Tea garden and Lackatoorah Tea garden.

C. Chemical Hazard

Tea garden workers are susceptible to a number of biological hazards like dermatitis, eczema, ulcers. In the following, column chart has been prepared according to number of workers. Among 80 surveyed workers 43 workers are found suffering from different biological hazard. The percentage for certain type of chemical hazard is given with respect to the total number of surveyed male or female workers. From Figure 9 respectively for Khadim, Malnichera and Lackatoorah Tea Estates it is seen that eczema, ulser and dermatitis are most chemical hazard faced by the interviewed workers.

Figure 9: Chemical hazard comparison of the surveyed workers at Khadim Tea garden, Malnichera Tea garden and Lackatoorah Tea garden.

D. Mechanical Hazard

The pie chart as presented in Figure 10, it is seen that among the surveyed workers 35% of Malnichera, 32% of Lackatoorah and 33% of Khadim Tea Estates suffer from various mechanical health hazards. From Table 1 it is seen that three tea garden workers suffers mostly from
physical hazard. Averagely three tea gardens workers sufferers from biological hazards. Highest mechanical and chemical hazards are occurred at Malnichera Tea Estates (76%) and Lackatorah Tea Esate (69%) respectively as seen in table 1.

Figure 10: Mechanical hazard comparison of the surveyed workers at Khadim Tea garden, Malnichera Tea garden and Lackatoorah Tea garden.

E. Comparison of hazards among the surveyed tea gardens

Tea garden workers are susceptible to numerous occupational health problems. Some major occupational health hazards faced by the surveyed workers are summarized in figure 1. From figure 1 it is seen that three tea garden workers suffers mostly from physical hazard. Averagely three tea gardens workers sufferers from biological hazards. Highest mechanical and chemical hazards are occurred at Malnichera Tea Estates (76%) and Lackatorah Tea Esate (69%) respectively as seen in figure 10.

F. Psychosocial Hazards

Psychosocial health of the tea garden workers is also influenced by their overall occupational health conditions. Psychosocial workplace characteristics related to stress and work frustration may be due to health outcomes, the balance between a worker’s efforts and the rewards (e.g., pay, recognition, status, prospects of promotion, etc.) received for his or her work, and the extent to which supervisors and co-workers are supportive. Other psychosocial characteristics include work stability, service conditions, job satisfaction, welfare conditions in the tea estates, etc.

VIII. HEALTH PROBLEMS FACED BY THE THREE SELECTED TEA GARDEN WORKERS

Three selected tea estate workers faces different health problems. According to the information collected through questionnaire, surveyed workers of selected Tea gardens faces different health problems of which body pain, anaemia, headache and respiratory disease are the most.

The main causes of vulnerability of the surveyed workers of three Tea Estates to occupational hazards are as follows. The workers cannot afford a nutritional diet because of low wages and fall prey to diseases easily. Temporary workers get fewer social benefits like medical care, housing, educational facilities for their children, etc. Pesticides are often sprayed without proper protection. Protective gear is also not provided to the workers while operating machines in the tea garden factory of Khadim Tea Estate, thus resulting in cuts and bruises. Intoxication among the tea garden workers is a common phenomenon. Absenteeism means to remain absent from work. Absenteeism results in loss of income. Work frustration causes antipathy towards work. Absenteeism in tea estate impact on physiology and psychology of human beings. In tea estates Absenteeism is more due to monotonous work. Nowadays management is trying to rotate the work among the workers to reduce absenteeism.

IX. SUGGESTIONS FOR IMPROVING THE OCCUPATIONAL HEALTH OF THE TEA GARDEN WORKERS OF THREE SELECTED TEA GARDENS

Some suggestions for improving the occupational health conditions of the tea garden workers of three selected tea gardens are as stated in the following sections. Educational facilities for the tea garden workers should be improved. There is a primary school in each of the surveyed tea estates. The tea garden workers should...
be made aware of the importance of formal education upon one’s future. Income of both permanent and temporary workers should be increased so that they can lead comfortable and hygienic lifestyles and invest more in health and education.

The tea garden workers should be made aware of the importance of the health benefits of drinking safe drinking water, of using mosquito nets while sleeping, of keeping their surroundings clean and free from dirt and stagnant water. The walls and machinery of the tea factory should be kept clean, machines should be fenced off and the floors, stairs and means of access should be of sound construction. Protective clothing like gloves, masks, helmets, etc. should also be provided to workers working inside the tea garden factory at Tea Estates. Spraying and fumigating the residential areas with insecticide from time to time will reduce the number of mosquitoes and flies. Tea garden workers can be provided with umbrellas and ‘japi’, the traditional Assamese cap to protect them from the heat and rain.

Proper training regarding handling of tools and machines should be given to workers before operating the factory machines. Utmost precaution should be taken while spraying chemicals so that the workers are not exposed to hazardous chemicals. Protection equipment such as goggles or face shields, chemical-resistant gloves, aprons, boots and respirators should be provided. Injuries to the lower back resulting from lifting heavy goods are common among tea workers.

X. CONCLUSION

The study has revealed that the tea garden workers have a long way to go in terms of mitigating the occupational health hazards. Prevention and control of occupational health hazards among the tea garden workers can be done by regular environmental monitoring including exposure to chemical, biological, mechanical and physical agents in their work environments. Providing economic benefits will help in boosting the morale of the workers thereby improving their physical and mental health.

The present health status of the tea garden workers can be improved through better hygienic practices, environmental sanitation, creating health awareness and nutritional intervention and overall improvement of socio-economic conditions of the population. So it is very important to improve the working environment in the tea estates mentioned above.

Reference

Critical Success Factors in Implementing Green Supply Chain Management Practices in Footwear Industry in Bangladesh – An Interpretive Structural Modeling Approach

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Abstract - Green supply chain management (GSCM) has attracted much attention in the last few years in academia and industries. Presently, stakeholders, buyer and customers are becoming more aware of the sustainable environment and sustainable development. In Bangladesh, the government is taking initiatives to implement strict rules and regulations, which have imposed huge pressure on the manufacturing industries to adopt green supply chain practices to reduce the environmental impact of their supply chains, as well as buyers are imposing huge pressure to adopt GSCM practices. The main aim of this paper is to identify critical success factors (CSFs) to implement green supply chain management practices in the footwear industry in Bangladesh. In this work, critical success factors have been evaluated, and their contextual relationships between CSFs have been established by interpretive structural modeling (ISM) approach. Along with this, the importance of the CSFs on the basis of their driving and dependence power has been determined by MICMAC analysis. ‘Support & commitment of top management’ has been identified as most important CSF that may force industries to implement GSCM practices to make their business sustainable. A case study of Bangladeshi footwear industry is presented to show the real world applicability of the proposed model.

Keywords— Green Supply Chain, Footwear Industry, ISM, Critical Success Factors.

I. INTRODUCTION

Over the past few years, environmental sustainability and green supply chain management are gaining popularity. Increased environmental related problems and societal and detrimental issues lined to waste and emission generation due to the different activities of supply chains are pushing the industries to adopt socially responsible green supply chain management (GSCM) practices [1]. Bangladeshi industries are also facing tremendous pressure to adopt policies to implement GSCM [2]. The industries and the business organizations can earn more profit by implementing GSCM through the strategic approach.

Organizations have aims to enhance business as well as make profit, optimize resource utilization, and increase better customer service by making less degradation to the environment. To earn these objectives, adopting GSCM may be a good solution in making a balance situation among ecological, financial and social aspects. Sustainability is all about reducing a business’ harmful impacts on people, societies and the environment at the same time enhancing value for customers, business partners, and stakeholders. GSCM is a popular topic in developed country. Over the years, some study has been conducted in developing countries in following industrial/general perspective - Luthra et al. [3] found the critical success factor for Indian mining industry to adoption of green practices, Wu et al. [4] found the GSCM implementation driver for Textile Industries, Jayant & Azhar [5] found the barriers to green supply chain implementation, Muduli et al. [6] found the role of behavioral factor in GSCM implementation in Indian mining industry.

To the best of our knowledge, no CSFs related study has been conducted in the footwear industry in Bangladesh. This study fills this research gap. In Bangladesh, GSCM practices are in the early stage of adaptation. So, it is necessary to examine the critical success factor to implement green practices in the traditional supply chain. This research contributes to the GSCM literature by fulfilling the following objectives:

1. To identify various critical success factors (CSFs) to implement green supply chain in the footwear industry in Bangladesh.
2. To examine the contextual relationships among the CSFs and to propose a hierarchical structural model of CSFs to implement GSCM in the footwear industry.

In this work, an Interpretive Structural Model (ISM) is proposed to find contextual relationships among various CSFs helpful in the implementation of GSCM. CSFs are recognized through literature review and expert opinion as shown in Table 1. To show a real-world applicability of the proposed model, a case example of Bangladeshi footwear industry is offered.

II. METHODOLOGY

ISM was first introduced by Warfield to evaluate the multifaceted socio-economic systems [7]. ISM is a powerful tool which can evaluate multiple factors with the help of expert’s opinion and knowledge. ISM enables forming relationships among multiple factors using their
driving power and dependency power [8–10]. ISM has been successfully applied in different fields like productivity improvement [11], reverse logistics [12], 3P logistics [13], green supply chain [14], six sigma [15]. In this paper, ISM approach has been applied to evaluate critical success factors, and determine their contextual relationships in the implementation of green supply chain management in the footwear industry in Bangladesh. The basic steps of ISM approach are given below [16]:

Step 1: The CSFs of green supply chain implementation in footwear industries are identified and listed.

Step 2: A contextual relationship matrix among the set of identified CSFs is established.

Step 3: A structural self-interaction matrix (SSIM) of CSFs is developed; this indicates the pair-wise relationship between CSFs of GSC implementation. For making SSIM following notations are used to denote the direction of the relationship between factors \((i, j)\). V- CSF \(i\) will facilitate to achieve factor CSF \(j\); A- CSF \(i\) will be achieved by CSF \(j\); X- CSF \(i\) and \(j\) will help to achieve each other; and O- CSF \(i\) and \(j\) are unconnected.

Step 4: A reachability matrix is constructed from the SSIM and check for the transitivity relationship (i.e., if a CSF X is linked to CSF Y and CSF Y is linked to CSF Z, then CSF X is linked to CSF Z). To make reachability matrix, following binary digit is used (i.e., for V, \(a_{ij}\) will be 1 whereas \(a_{ji}\) will be 0, for X, \(a_{ij}\) will be 1 and \(a_{ji}\) will be 1, for O \(a_{ij}\) is 0 and \(a_{ji}\) is 1, for A, \(a_{ij}\) is 0 and \(a_{ji}\) is also 0.)

Step 5: The final reachability matrix obtained in Step 4 is partitioned into distinct levels.

Step 6: A graph is made based on the final reachability matrix, and then the transitive relations are removed.

Step 7: The resulting digraph is converted into an ISM model by replacing the variable nodes with the statements.

Step 8: Finally, the ISM model developed in Step 7 is checked for theoretical inconsistencies and if so, then corrections are made. All the above steps are shown in Fig. 1.

III. RESULTS

A. CASE STUDY

A case of footwear industry has been employed in this study. Footwear industry in Bangladesh is playing a vital economic role in earning foreign currency. According to Export Promotion Bureau (EPB), in the FY 2014-15, footwear industries have earned $31.20 billion US dollar. Due to this contribution to the economy, these industries need to introduce GSCM practices for sustaining business in the world market. The footwear industry wants to reduce environmental impact as well as to fulfill buyer requirements to sustain the global competition. It also wants to minimize waste, maximize profit, green the supply chain, and try to implement reverse flow of materials. However, the industry has been facing some problems in implementing green supply chain to their traditional supply chain network. Examining the CSFs can help the industry implement green practices in their manufacturing units to achieve sustainability.

To investigate the interaction most critical success factor and to prioritize level between CSFs, we collected the most suitable CSFs from the current literature review and a careful investigation of the industry. With the help of two supply chain experts and one academic expert, most important CSFs were selected. The procedure of the ISM methodology is explained below.

![Fig. 1. Flow diagram of ISM Methodology](image-url)
Phase 1: Identify the most suitable CSFs

Table 1: Identification of CSFs.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name Critical Success Factors (CSFs)</th>
<th>Relevant literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF1</td>
<td>Support &amp; commitment of top management</td>
<td>[17]</td>
</tr>
<tr>
<td>CSF2</td>
<td>Government legislation towards GSCM implementation</td>
<td>[18, 4]</td>
</tr>
<tr>
<td>CSF3</td>
<td>Customer awareness</td>
<td>[1, 19]</td>
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<td>CSF4</td>
<td>Organizational policy supporting GSCM</td>
<td>[4, 20]</td>
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<tr>
<td>CSF5</td>
<td>Involvement of suppliers in green practice</td>
<td>[21]</td>
</tr>
<tr>
<td>CSF6</td>
<td>SC members’ awareness and literacy</td>
<td>[22]</td>
</tr>
<tr>
<td>CSF7</td>
<td>Encouragement to technology advancement</td>
<td>[23]</td>
</tr>
<tr>
<td>CSF8</td>
<td>Long-term economic benefit</td>
<td>[24, 25]</td>
</tr>
<tr>
<td>CSF9</td>
<td>Global competitiveness</td>
<td>[26, 27]</td>
</tr>
<tr>
<td>CSF10</td>
<td>Pressure from NGOs and society</td>
<td>[28]</td>
</tr>
</tbody>
</table>

Phase 2: In this phase, structural self-interaction matrix is formulated with the help of expert’s opinion. The process is given in step 2.

Table 2: Structural self-interaction matrix

<table>
<thead>
<tr>
<th>CSFs</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
<th>F9</th>
<th>F10</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>X</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>F2</td>
<td>X</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>X</td>
<td>A</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>F3</td>
<td>X</td>
<td>V</td>
<td>X</td>
<td>V</td>
<td>V</td>
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<td>V</td>
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<tr>
<td>F4</td>
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<td>A</td>
<td>A</td>
<td>X</td>
<td>V</td>
<td>V</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>F5</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>A</td>
<td>V</td>
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<td>A</td>
<td>A</td>
<td>X</td>
<td>V</td>
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<tr>
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<td>X</td>
<td>V</td>
<td>V</td>
<td>X</td>
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<td>A</td>
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<tr>
<td>F8</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>V</td>
<td>V</td>
<td>X</td>
<td>V</td>
<td>V</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>F9</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>F10</td>
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<td></td>
</tr>
</tbody>
</table>

Note: Dr. P.-Driving Power; De. P.-Dependence Power

Form this Table 3, we calculate driving and dependence power for each CSFs. This driving and dependence power has been used in MICMAC analysis which is described in MICMAC analysis.

Phase 3: In this phase, final reachability matrix is formulated by considering concept of transitivity with the help of Step 4 which is described in detail in Section II.

Table 3: Reachability matrix

<table>
<thead>
<tr>
<th>CSFs</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
<th>F9</th>
<th>F10</th>
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<tbody>
<tr>
<td>F1</td>
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<td>1</td>
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<td>F2</td>
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<td>1</td>
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<td>F3</td>
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<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>F4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>F5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>F6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>F7</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8</td>
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<tr>
<td>F8</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
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<tr>
<td>F9</td>
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<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Dr. P.-Driving Power; De. P.-Dependence Power

Form this Table 3, we calculate driving and dependence power for each CSFs. This driving and dependence power has been used in MICMAC analysis which is described in MICMAC analysis.

Phase 4: In this phase, level positioning is established by finding reachability set, antecedent set, and interaction set. The reachability set for a particular CSF is formed of the CSF and other CSFs which help to reach. The antecedent set is constructed of the CSFs themselves and the other CSFs which will assist in reaching it. The intersection of both these CSFs was also derived for all CSFs. If the reachability set and the antecedent set of CSFs are the same, then this assign as a 1st level, and it takes in utmost position in hierarchy structure of ISM. After getting 1st level then try to find the next level by omitting 1st level. Similarly, another level is taken from level partitioning (see Table 4).

Table 4: Level partitioning

<table>
<thead>
<tr>
<th>CSFs</th>
<th>Reachability Set</th>
<th>Antecedent Set</th>
<th>Intersect- on Set</th>
<th>Lev -el</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>F1, F2, F3, F4, F5, F6, F7, F8, F9, F10</td>
<td>F1, F2, F4, F8, F9</td>
<td>F1</td>
<td>vii</td>
</tr>
<tr>
<td>F2</td>
<td>F2, F3, F4, F5, F6, F7, F8, F9, F10</td>
<td>F1, F2, F4, F8, F9, F10</td>
<td>F2, F4</td>
<td>iv</td>
</tr>
<tr>
<td>F3</td>
<td>F3, F4, F5, F7, F9, F10, F1</td>
<td>F1, F2, F3, F8</td>
<td>F3</td>
<td>vi</td>
</tr>
<tr>
<td>F4</td>
<td>F2, F4, F7</td>
<td>F1, F2, F3, F4, F5, F6, F8, F9, F10</td>
<td>F2, F4</td>
<td>i</td>
</tr>
<tr>
<td>F5</td>
<td>F4, F5, F6, F9</td>
<td>F1, F2, F3, F5, F6, F8, F9, F10</td>
<td>F5, F6</td>
<td>iii</td>
</tr>
<tr>
<td>F6</td>
<td>F4, F5, F6, F7, F8</td>
<td>F1, F2, F3, F6, F9, F10</td>
<td>F5, F6</td>
<td>iv</td>
</tr>
<tr>
<td>F7</td>
<td>F7, F8, F9, F10</td>
<td>F1, F2, F3, F4, F6, F7, F8, F9</td>
<td>F7, F8, F9</td>
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</tr>
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<td>F8</td>
<td>F2, F3, F4, F5, F7, F8, F9, F10</td>
<td>F1, F2, F6, F7, F8</td>
<td>F2, F7, F8</td>
<td>v</td>
</tr>
<tr>
<td>F9</td>
<td>F2, F3, F4, F6, F7, F9, F10</td>
<td>F1, F5, F7, F8, F9, F10</td>
<td>F7, F9, F10</td>
<td>iii</td>
</tr>
<tr>
<td>F10</td>
<td>F2, F4, F5, F6, F9, F10</td>
<td>F1, F2, F3, F7, F8, F10</td>
<td>F2, F9, F10</td>
<td>iii</td>
</tr>
</tbody>
</table>

B. MICMAC ANALYSIS

In this section, MICMAC analysis is carried out to show the classification of identified CSFs to implement GSCM practices in footwear industry based on their driving and dependence power. The driving power and dependence power are calculated from the final reachability matrix (see Table 3). This driving and dependence power are used as an input to construct a graph to categories the critical success factors into four regions (i.e., Autonomous, Dependent, Linkage, and Independent CSFs).[29]. Autonomous CSFs indicate that it has weak driving and dependence power. Dependent CSFs have strong driving power and weak dependence power. CSFs in linkage region indicate that the CSFs have strong driving power and strong dependence power. Finally, the CSFs in the independent region have strong driving power and weak dependence power.

C. FINDING

Fig. 3 indicates that the interactions between each CSFs and their position in the hierarchical structure. The details about our results have been discussed in the discussion section. F1 factor has been assigning a level I due to its high driving power.
The objective of this research was to identify critical success factors (CSFs) and examine their contextual relationships to develop a hierarchy of CSFs in implementing green supply chain management (GSCM) in the footwear industry in Bangladesh. The contextual relationships between identified CSFs and hierarchy structural model of these CSFs in implementing GSCM have been achieved and developed by using the ISM approach. After completing the procedures involved in ISM approach, driving and dependence power of each CSF has been calculated. The CSF ‘Support & commitment of top management (F1)’ has been found as the lowest dependence power and highest driving power as shown in Table 3. This CSF is at the bottom of the structural model in Figure 2. On the other hand, the CSF ‘Organizational policy supporting GSCM (F4)’ has been found as the highest dependence power and lowest driving power as shown in Table 3. This CSF has come at the top of the structural model as shown in Fig.2. Further level partitioning of these CSFs has been done, and seven levels have been identified from level partitioning as shown in Table 4. Organizational policy supporting GSCM (F4) has been positioned at the top (1st) level whereas Support & commitment of top management (F1) CSF has been positioned at the bottom (7th) level. At the bottom level, the CSF has highest driving power and lowest dependence power. From bottom to top, driving power decreases and dependence power increases. Thus at the top level, the CSF has the highest dependence power and lowest driving power. Thus a hierarchy structural model of the identified CSFs to implement GSCM in the footwear industry in Bangladesh was developed. This research will help organizations and managers achieve competitive advantage through greening their supply chain.

MICMAC analysis has also been carried out to validate the interpretive structural model of the identified CSFs. The driving power-dependence power graph helps to classify various CSFs in greening the supply chain. Three CSFs (F1, F3, and F8) have been identified as a driver or independent CSFs to implement GSCM in Bangladeshi footwear industry under this study. Driver or independent CSFs have high driving power and low dependence power. They play an important role in implementing GSCM in the case industry. Three CSFs (F2, F6 and F10) have been identified as linkage CSFs from the case industry perspective. Linkage CSFs have high driving power and also high dependence power. These CSFs have come in the middle of the ISM hierarchy. These CSFs are unstable that means any action on these CSFs will have an effect on others and also have feedbacks of themselves. Four CSFs (F4, F5, F6 and F7) have been identified as dependent CSFs in implementing GSCM in footwear industry of Bangladesh. Dependent CSFs have high dependence power and low driving power. Dependent CSFs are weak drivers but strongly dependent on other CSFs. These CSFs indicate desired objectives for the implementation of GSCM in the case industry under this study. In this category, ‘Organizational policy supporting GSCM (F4)’ has the least driving power and highest dependence power. Strong dependence means all other CSFs will contribute to encourage organizations to adopt GSCM policies in their organizations to implement GSCM to enhance competitiveness. No CSFs was identified in the autonomous category which means there is no CSF which may be considered as disconnected from the system.

In our model, ‘Support & commitment of top management (F1)’ has been identified as the most important driver in greening the supply chain of the leather footwear industry. If the top management has
intense commitment to implement GSCM in their organizations, customer awareness will be increased, and thus the long-term benefit of greening the supply chain will be precisely understood by all the parties of the supply chain. Government pressure to implement GSCM and supply chain members’ awareness concerning greening the supply chain will create a global competitiveness, and thus society and non-government organizations will pressurize the industries to adopt GSCM through proper management of technological advancement. Thus, organizations will take initiatives for greening their supply chain practices.

V. CONCLUSION

In the era of globalization, Bangladeshi industries are facing pressure to green their supply chain from different international and domestic organizations. Environmental concerns are gaining more attention recently. In this research work, we have identified major critical success factors in implementing green supply chain management in the footwear industry in Bangladesh. A total of ten CSFs is identified through literature and expert opinions to implement GSCM in the case industry. The ISM methodology and MICMAC analysis have been used to understand the interdependence among selected CSFs.

According to the findings of this research work, ‘Support & commitment of top management (F1)’ is at the bottom of the structural model whereas ‘Organizational policy supporting GSCM (F4)’ is at the top of the structural model. It means ‘Support & commitment of top management (F1)’ will push organizations to implement green supply chain management to achieve high performance in the supply chain by adopting GSCM supporting policies in their organizations. Though economic is the basic motivation if any industry but a proper balance between economic, social and environmental perspective is needed to be successful in the long run and sustainable development. Bangladeshi industries may implement GSCM in their organizations by successful consideration of the mentioned CSFs and make profit by improving social and environmental performance. This study has some limitations. As ISM is highly dependent on the judgment of experts which may be biased. The proposed model may be applied to other industries of Bangladesh or other developing countries. It is also believed that this research work sets a framework for enhancing research in the area of green supply chain practices to achieve competitive advantages.

REFERENCES


Segmenting Supply Chain Process for Optimal Performance by Adopting Postponement: A Randomized Trial

Md. Ziaur Rahman
Department of Business Administration, Metropolitan University, Sylhet, Bangladesh
Paper ID-ICBM-17-401

Abstract

Even though extensive technologies have been applied to all stages of a supply-chain, the performance of many supply chains has been quite dismal. One potential cause for failure is the lack of comprehending the nature of the demand and therefore being unable to device a supply-chain that would better satisfy that demand. A common mistake is to use an efficient supply chain that calls for a responsive supply chain and vice versa. The paper aims to develop the first wave of empirical investigations related to the impact of supply chain design practices on performance. It investigated a supply chain design model that linked efficiency with responsiveness to optimize performance by deploying postponement. An in-depth case study methodology was adopted to uncover the strategies undertaken by one of the Bangladesh's fastest growing cement manufacturers to create a competitive advantage through its management of the supply chain design alignment. The major elements were verified by surveys. Applicability and exploitability of the diagnostic instrument was validated using action research. Generally, the adoption of segmenting the supply chain process by diffusing the postponing style led to an improved performance, which, in turn, positively impact operational performance. Operational performance enhances organizational performance. Just as processes can be broken into parts, so can supply-chain processes be segmented to achieve optimal performance. Practitioners are provided with a framework for assessing the synergistic impact of postponing practices on supply chain design performance.

Keywords: Action Research on Supply Chain, Alignment, Efficient, Responsive, Optimal Performance, Postponement, Supply-chain design.

JEL Codes: M11, L61
I. INTRODUCTION

With businesses going multinational in operations and the corresponding trend is characterized by several challenges whereby cost is the key and customers are expecting lower cost products without compromising on quality [1]. Similar scenario is experienced within the cement industry. Hence, continuous improvement activities such as, Kaizen, lean operations, effective and efficient supply chain are embarked upon by manufacturers to mitigate the rising cost of operation and continuously improve their product cost [2].

A supply chain is a system of facilities that procure raw materials, transform them into intermediate goods and then final products, and finally deliver the products to customers through a distribution system that includes a (probably multi-echelon) inventory system. Thus, it spans procurement, manufacturing, and distribution, with effective inventory management as one key element. To fill orders efficiently, it is necessary to understand the linkages and interrelationships of all the key elements of the supply chain. Vijay & Shetkar argues that majority of product cost is locked in the materials [3]. This explains why efficient supply chain management is important for organizations to attain competitive edge in their business environment. So, operation and supply chain excellence plays a vital role in reducing the product cost. In the same manner, the application of supply-chain best practices from other industries could be used to significantly improve the inefficiencies in the cement industry supply chain [4].

However, it is important to note that prior to the introduction of any change efforts (like supply-chain best practices) in an organization, there is a need to assess the current performance in supply chain system and develop a suitable performance measurement system specific for the organization.

The term postponement refers to delayed decision-making about a product. It is beneficial to delay commitment to product-specific characteristics as late as possible in order to avoid a mismatch between orders and inventory on hand. The length of delay is specific to a product but the common strategic motivation is to gain better information about customer demand by waiting to customize a product for a particular market or customer. At the point of postponement a standardized module or platform starts to acquire customer or market specific characteristics. Figure 2-1 shows the spectrum of opportunities for postponement that extends from procurement to distribution. Postponement enables forecasters to make better predictions about end product demand over time since the standard module is built-to-forecast and the finished product is built to a better forecast or even built-to-order. Lee and Hau [14] observe that the shorter the time horizon over which predictions are made, the more accurate the forecast.

![Figure 1: Possible points of differentiation in the supply chain [14]](image)

This study examines an integrated performance measurement system within a supply chain organization and specifically focuses on the postponement style of supply chain design within the procurement department. At the same time, empirical data is acquired via a case study conducted at a company (which, for purposes of confidentiality, will be referred to as ABC) through interviews, direct observation and data gathering during participatory actions.

Supply chain design performance is needed for various reasons: improving operations, better outsourcing, increasing profits, enhancing customer satisfaction, generating quality outcomes, tackling competitive pressures, increasing globalization, increasing importance of E-commerce, and growing complexity of supply chains.

Segmenting supply chain process for optimal performance by adopting postponement assists the business organization to compete in the dynamic international market. The objective here is to incorporate activities across and within the organizations for providing the customer value. An integrated supply chain involves coordination and information sharing up and down the process among all stakeholders. With technology facilitating information flow, a coordinated supply chain can be designed to meet the strategic, planning, and operating objectives of the educational institutions. It also means establishing effective and feasible relationships both inside and outside the organization [2].

There was a paradigm shift within the management of supply chain lately: One of the most significant changes in paradigm of modern business management is that individual businesses no longer
Manufacturing postponement has the greatest effect on the inventory location to the latest point in the marketing flow and postpone changes in inventory location to the latest point in time" [6]. In 1965, Louis Bucklin recognized that little had been done in the area of postponement despite its tremendous potential for cost savings. He defined total cost as the sum of inventory holding cost and delivery cost, both of which are a function of delivery time. He argued that “a speculative inventory will appear at each point in a distribution channel whenever its costs are less than the net savings to both buyer and seller from postponement” [7]. In other words, postponement is not cost effective when there is sufficient information about demand to produce finished goods in mass and store them in inventory. For some products it makes sense to postpone the finishing process by introducing a finishing cost and increasing the delivery time because the product is not readily available from stock.

According to Zinn and Bowersox [8], manufacturing postponement occurs when parts are shipped to the finishing center from more than one supplier. Manufacturing postponement has the greatest potential for cost savings in inventory because the value of the product increases through the addition of each successive component. Manufacturing postponement usually results in higher production costs. The increase is due to the capital cost of switching machinery between different types of variety and shipping them to different finishing facilities. Time postponement occurs when finished products are shipped to centralized warehouses closer to the customer than the manufacturing location. The motivation is to increase customer service levels by decreasing customer lead time and to respond quickly to orders by placing inventories closer to the customer without committing to an individual order. The final outcome of their research is a framework which serves to assist managers in determining what type of postponement is best for a given product or supply chain structure.

Swaminathan and Lee [9] go further and identify the factors which influence the costs and benefits of postponement as market factors, process factors, and product factors. Market factors refer to characteristics of demand and uncertainty. Process factors refer to characteristics of operating policy within the firm as well as the external supply chain, such as managerial support and the location of and relationship with suppliers. Product factors refer to the design and characteristics of an individual product such as integral versus modular and inventory carrying cost. They also highlight enablers of postponement such as process standardization, process resequencing (redesigning the assembly process to move value-added processes closer to the customer), and component standardization. Redesigning products with these characteristics makes postponement possible and reduces the risk to the manufacturer by eliminating redundant processes and designing products to be modular and component interfaces to have standard ports for easy assembly.

Performance measurement is defined as the process of quantifying the level of efficiency and effectiveness of an activity into a measured value [2]. Performance measurement is a process of assessing the progress of work towards the goals and objectives that have been defined previously. The measurement of supply chain performance becomes the main concern. For supply chain actors, performance measurement can be used as a basis to improve its performance. All this time, performance measurements by supply chain actors are conducted separately. It causes inefficiency, as well as obstructs both parties in understanding the effectiveness of each respective performance [4].

Until recently, there has been no agreement of researchers which model is most flattering to be used and which key indicator that important to be maintained [10]. Recent models demonstrate its
complex performance measurement due to wide range of supply chain that becomes cause of weaknesses. The complexity will put management in difficulties for selecting the most important key indicator to be maintained. The existing models could not yet be employed for best performance management since it have not based on optimization model [11].

Recent research studies done by Edwin et al have identified four common postponement strategies, namely pull, logistics, form and price postponement [12]. The former three postponement strategies are linked to production and manufacturing, while the last one is a pure pricing strategy. They aim at balancing the costs and benefits of mass production and mass customization. Practical examples of postponement can be found in the high-tech industry, food industry and other industries that require high differentiation.

Robert Stahl and Thomas Wallace [13] proposed a framework for implementing postponement by classifying products according to two factors; product complexity - the number of product varieties, and speed - the time from customer order to delivery.

Action Research is implemented to solve a problem and bring about improvement. Thus, ‘research is seen as an agent of change’ as outlined by Gray [18]. Coughlan & Coghlan argued that despite its potential benefits and relevance to the industry, there is a lack of reported AR studies. There is a need to adopt AR study more, as a methodology for research in operations management [17].

However, So far, no research has discussed the impact of postponement supply chain design for optimal performance. Therefore, an efficient and effective integrated model of performance measurement by supply chain actors is required. The motivation for this research is to determine which companies are using postponement and categorize the type of products that are ideal candidates for postponement. Because postponement is a widely known, yet underutilized, strategy it is important to understand strategic motivations and operational consequences that can help aid in future research.

III. PROBLEM STATEMENT

The purpose of the study is to analyze and evaluate the performance of postponement strategies on supply chain design for optimal gain. The situations in which postponement may be an explicit choice to be made for a supply chain are limited, but may become real options for specific categories of products or sales channels of a company. That is the distinction this paper wants to make it clear – postponement as a business model which then drives the supply chain strategy. If we are looking for an alternate way to design effective supply chains, the answer does not lie in adopting theories in the hope of finding the right answer, but to build supply chain capabilities driven by business strategy. To find this new approach to build effective supply chains, one needs to understand the supply chain sphere of influence, find out what drives the supply chain, and learn about the new design imperative to build supply chain capabilities to support strategy – that would respond to the current nature of demand by eliminating potential wastes.

IV. RESEARCH QUESTIONS

More specifically, the research asks the following questions:
- Why do firms choose to adopt supply chain design practice to devise a strategy that would better satisfy demand?
- How do firms integrate supply chain design activities to achieve optimal performance?

V. METHODOLOGY

An in-depth case study methodology was adopted to uncover the strategies undertaken by one of the Bangladesh's fastest growing cement manufacturers to create a competitive advantage through its management of the supply chain design alignment. The area of study was generally on its supply chain department with focus being given to procurement department performance and their relationship with their suppliers. An array of methods was used – interviews, field notes, observations and content analysis with case study as the dominant method.

In this proposed study, the primary source of data collection was done through the use of semi-structured in-depth interviews and survey questionnaires. Supporting data had been collected through workplace observations in which the researcher acted as a non-participant observer as
opined by Punch [15]. Two streams of primary research were executed for this study. The results from these surveys, in combination with secondary research, formed the basis for the findings highlighted in this report.

1. An internet-based survey
   • Sent to some industry practitioners
   • Survey timeframe: Three weeks in February 2017

2. A detailed in-person survey
   • Questions were geared toward gaining an in-depth understanding of postponement’s catalysts, inhibitors, enablers, critical success factors, and benefits.
   • Respondents were experienced supply chain executives, practitioners.

Nearly half of the survey respondents were employed with the supply chain/logistics and distribution area within their organization. More than half of the survey respondents worked in departmental management, and almost 10% were involved in senior management. The major elements were verified by surveys. Applicability and exploitability of the diagnostic instrument was validated using action research.

Action research was adopted in this particular circumstance over other methods such as, Triangulation, SEM or empirical analysis because of its applicability fitness to real-life and to be able to provide practitioners with a framework for assessing the synergistic impact of postponing practices on supply chain design performance. An AR project can therefore be said to have two parallel objectives: an improvement objective to solve a specific problem and a research objective to contribute to the generation of new knowledge [16].

A major strength of an AR project is context bound and strongly linked to practical problem solving (Greenwood and Levin, 2007). Thus, local knowledge is contrasted with research-based knowledge, and the theoretic understanding that is developed is evaluated on its ability to make sense of the situation at hand, ensuring that theory has the capacity to explain the phenomena under study (Greenwood and Levin, 2007). The results of an AR project are immediately visible, proving the workability of the implemented solutions, and are as such the true test that something works in practice and not just theory – as Kurt Lewin stated as he coined the phrase “Nothing is as practical as a good theory” [17].

A well structured Questionnaire in a five point Likert Scale (1=Very Dissatisfied, 2 = Dissatisfied, 3 = Neither Satisfied nor Dissatisfied, 4 = Satisfied, 5 = Very Satisfied) was used. Data were converted into numerical codes and the details of these coding were recorded in a code book to help establish the proposed model.

VI. FINDINGS & ANALYSIS

Push or pull – efficient or responsive supply chain design? That is a question every supply chain needs to answer. It also changes the question from push or pull to a question of where the inflection should occur. The case study gave detailed information about a company pseudo named ‘ABC’ that has adopted postponement in some capacity. It is worth noticing the motivation and risks that they incurred in order to figure out whether there product is a candidate for postponement. The data analysis provides background on the company and the product that is postponed, a description of the supply chain before and after the postponement was adopted, the decoupling point between intermediary product and finished goods. Afterwards, it touches on the issue of creating a supply chain that is purpose built to take advantage of postponement model.

The plant of ABC, which is located in Chhatak, Sunamganj is the only fully integrated dry process cement plant in Bangladesh where high premium quality clinker (a semi finished product needed to produce cement) and cement are produced utilizing sophisticated and state-of-the-art machineries and processes. The Company’s ability to produce its own clinker under its strict quality supervision and the presence of an international standard Quality Control and Monitoring Lab ensures the same consistent premium quality in each and every bag. By supplying clinker to other cement producers in the market and through import substitution of clinker, ABC helps the country save USD 65-70 million worth of foreign currency per year [21].

ABC’s products are high value with a challenging demand forecasting owing to long buying cycles ranging anywhere from six months to two years.
Forecasts are generally compiled from sales representatives’ predictions. Because of the high cost of the products, the decision making process and financial constraints of the customers, it is somewhat difficult to know when products will be ordered. As a result, ABC was plagued with less than optimum service levels for few products and higher than planned inventories for others. All of these conditions were catalysts for a postponement strategy, which became even more important as a result of an industry-wide directive.

The first postponement strategy involved designing Economic Order Quantity (EOQ) for holding inventory into the Minimum order Quantity (MOQ) that ABC designed and produced. Originally traditional method of make-2-stock was in place. To optimally manage inventories, ABC collaborated with an external supplier to replace the EOQ module with a cost saving MOQ. During the redesign phase engineers were able to develop the universal module at a lower cost because of advanced strategy which deployed both the push and pull strategy depending upon the nature of the demand to better respond with low wastage.

Shortly after, ABC initiated another postponement strategy in their product line. This next strategy was to redesign the product so that it could be configured-to-order at the end of the assembly process. There are currently two variations of the Series. Through a carefully designed manufacturing process, ABC is able to manufacture to a specific model as soon as that specific model is shipped to fill a customer order. This strategy involved the redesign of the manufacturing process so that the product could be configured-to-order at the end of the assembly process. This meant that all of the commonalities between the two different variations of each model would be combined into an intermediate product that would be produced to a forecast, stored as intermediate inventory, and configured-to-order once an order was received. The redesign phase took a team of engineers six months to make changes and train workers on the assembly line. The supply chain became vastly more efficient and service levels increased dramatically. Figure 1 is a representation of the supply chain after postponement.

At the point of postponement, an intermediate job is held in inventory awaiting a customer order. This allows ABC to reduce customer lead time from roughly 20 days to four hours plus test and delivery time. Before delivery, the product is placed in buffer inventory waiting for shipment. The shipment of an instrument is a trigger for the replacement of that configuration in buffer inventory. Customer service levels improved and inventory was significantly reduced by eliminating the need to store high value finished goods.

This is a classic example of the benefits of the successful implementation of postponement. Because of this success, ABC was able to continue developing postponement in other lines. Today, more than 85 percent of the production at ABC involves some form of postponement compared to less than five percent five years ago. By redesigning the supply chain to be easily adaptable for configuration, ABC realized that the product could also be easily de-configured back to the intermediate stage to support the secondary market for the commodity.

The inventory-order interface at links 2 and 3 will be perfectly valid as the retailer can either choose to replenish their regional warehouses or their distribution centers or both. In that sense, the processes to the left of points 2 and 3 will represent push-based processes & those to the right will be pull-based as depicted in fig: 3.

![Figure 2: ABC supply chain](image1)

![Figure 3: postponement model of supply chain](image2)
VII. RESULTS & DISCUSSIONS

Conventional wisdom holds that the best way to improve responsiveness and cost savings in the supply chain is to “go direct” and “eliminate the middleman” [19]. However, the migration to demand driven supply networks is leading many to reconsider the use of middlemen in the supply chain as in, the case of this particular action research on ‘ABC’ company.

By keeping product as generic for as long as possible the impacts of forecast inaccuracies was minimized and the optimum performance level was achieved. Once postponement has been deployed, the ABC company was able to streamline its workflow as efficiently as it is depicted in the below illustration. It further shows how those ‘bullwhips’ have been downsized to make it run smooth while eliminating potential wastages.

As ‘ABC’ realized that they had to reengineer their traditional procurement process (Push) to take advantage of logistic postponement using a common platform.

Table: Primary drivers & benefits of postponement

<table>
<thead>
<tr>
<th>Company-</th>
<th>• ABC</th>
</tr>
</thead>
</table>
| Primary drivers of postponement | • inventory cost  
|  | • product variety  
|  | • long lead time  
|  | • price erosion  
|  | • short product life cycles  
|  | • reconfiguration cost  |
| Primary Benefits | • service levels  
|  | • inventory reduction  
|  | • maintenance costs  
|  | • lead time reduction  
|  | • sales volume increase  
|  | • better forecast  |

As such, postponement - the optimal strategy with the appropriate mix- proved to be a cost-effective solution as it reduced redundant stock and saved the amount of rework. Essentially, the decision made by ‘ABC’ was at the product level according to the specific metric measuring demand, inventory cost, turnover and lead time constraints.

A truly robust framework of this nature was possible as ‘ABC’ had an ERP-enabled system in place and high level of commitment from the individuals at the top. The following inferences have been drawn to initiate the action research model for deploying postponement to achieve optimal performance.

Steps to Action Research

The switch to postponement strategy by company ‘ABC’ was deemed successful for wide variety of reasons. The intriguing strategic motivation for starting postponement was to improve service level and, at the same time, to cut down inventory holding cost.

It started with the goal of minimizing of one metric, in that particular case of ‘ABC’ – a shift from EOQ to MOQ, and resulted in improvement in other areas.

Figure shows a list of primary drivers of postponement for ‘ABC’ Company and the associated benefits. Another key factor for successful implementation was product modularity.
Summary of findings
Research Questions

<table>
<thead>
<tr>
<th>Research Question#1</th>
<th>Why do firms choose to adopt supply chain design practice to devise a strategy that would better satisfy demand?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding#1</td>
<td>To improve service level and, at the same time, to cut down inventory holding cost.</td>
</tr>
<tr>
<td>Finding#2</td>
<td>To be a cost-effective solution.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research Question#2</th>
<th>How do firms integrate supply chain design activities to achieve optimal performance?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding#1</td>
<td>By keeping product as generic for as long as possible the impacts of forecast inaccuracies can be minimized and the optimum performance level can be achieved</td>
</tr>
<tr>
<td>Finding#2</td>
<td>Reengineering traditional procurement process (Push) to take advantage of logistic postponement using a common platform.</td>
</tr>
</tbody>
</table>

| Source: developed by the author from the action research |

**RECOMMENDATION & FUTURE WORK**

The case study based action research would assist any organization, especially the SCM team to effectively manage suppliers and measure the department and supplier performance. As majority of spending in any organization involved in material purchases, hence, having effective management system will save the organization money and time which will help them in long term sustainability. The limitation of this study is that the sample is limited to Supply chain of functional products, thus it is required consideration and prudent to generalize the results to apply to supply chain of innovative product.

As technologies, customer expectations and supply chain management is rapidly evolving and more and more new strategies will emerge in future. Therefore, it would be wise for the organization to constantly monitor the progress and keep adapting to evolving theories, strategies and technologies.

**VIII. CONCLUSION**

In order to have an effective supply chain performance, organization must employ strategies for measuring and improving the performance of supply network participants. Strategies combined with effective measuring tools and supported by effective supply chain design such as, the proposed postponement model, will help any organization to excel in their daily routine work. Commitment from management is deemed vital as some of the infrastructure requires considerable overhaul in terms of style adaptation. All measurement systems should be diligently measured and senior management team get involved in reviewing the performance.

This paper encompasses the evolution of SCM in terms of time frame. In addition, this research represents the first large scale empirical study that systematically investigate input, output and process of the supply chain design performance through redesigned postponement model. The study proposes the model of a supply chain design alignment for finding the right balance between supply and demand and to be able to reduce the waste substantially while optimizing the workflow. From a managerial point of view, this research provides a novel approach to developing and assessing supply chain management application in the academia as well as for the practitioners.

Finally, a successful postponement will call for a tight integration between a manufacturer and a third party logistics provider. An ERP application is supposed to be installed to facilitate the process as well. However, substantial ROI is achieved over a longer term by minimizing waste and excess
inventory. Soon, it will no longer be a question of whether postponement is the right strategy, but rather how the supply chain will take benefits from cost saving strategies as in postponement.

REFERENCES


PRESENT AND FUTURE APPLICATIONS OF COMPUTER TECHNOLOGY FOR LEARNING AND EDUCATION

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Abstract - Computer is a blessing of modern science and technology. After its discovery, it was modified and is going through an improvement process every day. At the beginning computer was used for computation and limited other functions. But its widespread application has now crossed the boundary and is being used in every important sectors of our life including education. In education, computers have made things easy for students, for teachers and most importantly for researchers. The wide functionality of computer programs are used worldwide for educational purposes. It makes the delivery of education easy and effective. Third world countries like Bangladesh is also on a progress of using computers in education sector. And it is a good sign for the future prosperity of the country.

This paper tries to put forward the present applications of computer technology for learning and education from primary level to University level (including research level) which includes the importance of computer educations in the primary, secondary college and University levels. Example of tab use in slums areas of Bangladesh, online learning opportunity, role of different computer based software, real life uses of computers in education, the future applications of computer technology-Virtual reality technology and Artificial Intelligence for learning and education.

Keywords - Computer, Technology, Education, Learning and Student.

I. INTRODUCTION

With the ever-increasing population of computer technology, it is almost impossible to find an educational establishment that does not use it. Computers are becoming a more and more important within education as both a learning tool for students and for keeping records of all individuals at the school.

In 1975, Apple Inc. began donating Apple 1 model computers to schools, and mainframes began to lose their former dominance over academic research [1]. Computer usage continued to grow rapidly throughout this era. In 1977, it was estimated that over 90% of students at Dartmouth College had used computers at some point in their college careers. Walter Koetke, the director of a Lexington, Massachusetts school system commented that, "It's still possible for a student to get through here without using the computer, but he would certainly have to try to do it" [2].

Computer-aided instruction gained widespread acceptance in schools by the early 1980s. It was during this period that drilling and practice programs were first developed for exclusive classroom use. Schools became divided over which computer manufacturers they were willing to support, with grade schools generally using Apple computers and high schools preferring DOS based machines. Hardware shortages in schools became a major issue, leaving many teachers unable to provide enough computers for students to use [3]. Despite this, by 1989 computer usage shifted from being a relative rarity in American public schools, to being present in nearly every school district [4].

The early 1990s marked the beginning of modern media technology such as CD-ROMs as well as the development of modern presentation software such as Microsoft Power Point [1]. Other computer-based technology including the electronic whiteboard [5], and the laptop computer became widely available to students. In 1990, the Methodist Ladies' College became the first campus to require every student to purchase a laptop. Governments around the world began to take notice of the effectiveness of this policy, and began financial initiatives to significantly increase the use of laptop computers in other colleges as well [3]. In 1996, Bill Clinton made over $2 billion in grants available in the Technology Literacy Challenge Fund, a program which challenged schools to make computers available to every student, connected to the outside world, and engaging. This marked a significant increase in the demand for computer technology in many public school systems throughout the globe.

Correlating with the development of modern operating systems like Windows 98 and the continuing support of government funding, the prevalence of educational computer usage boomed during this era. Between 1997 and 1999, the ratio of students to multimedia computers decreased from 21 students per machine to less than 10 students per machine. Colleges began creating specialized classrooms designed to provide students with access to the utilization of the most modern technology available. Classrooms such as the "Classroom 2000" built at Georgia Tech in 1999 which featured computers with audio and video equipment designed to capture detailed recordings of lectures as a replacement for traditional note taking began to become more common [6].

This paper tries to focus on the present applications of computer technology for learning and education from primary level to University level (including research level) including an example of tabs use in slums areas of Bangladesh, online learning
opportunity, role of different computer based software, real life uses of computers in education, the future applications of computer technology-Virtual reality technology and Artificial Intelligence for learning and education.

II. LITERATURE REVIEW

Brown, Jessamy and Jinkins, Shirley in their research paper discussed that by 2000, the student to computer ratio at some schools in the US decreased to only 5 students per school computer. As collaborative classroom environments became mainstream, more schools as a whole began to invest in powerful networks and faster Internet connections. By 2010, many school districts implemented or encouraged "1:1 learning programs" which would ensure that all students in grade school would be provided with a personal laptop [7]. Computers have significantly changed traditional teaching methodology into a more "hands-on" approach, with Forbes predicting that, "Instead of parking themselves in a lecture hall for hours, students will work in collaborative spaces, where future doctors, lawyers, business leaders, engineers, journalists and artists learn to integrate their different approaches to problem solving and innovate together[8].

Computers in educational establishments are not just important for the student's learning. The technology can also be used by all at the schools to keep a record of all secondary school, make searching for an individual student's information quick and easy and it can be updated in an instant. When the Web is simply used as a source of material that can be downloaded and pasted without thought, then no, it is not of value. But when the learner searches the Web, evaluates the information, finds the gold in the dross, uses that to construct a knowledge base, to develop meaning, then yes, it is a valuable resource.

The research was conducted by Penjuree Kanthawongsa and Penjira Kanthawong using semi-structured interview with 3-page-open-ended questions designed by the researchers. Cultural, linguistic and subjective influences during the design of this qualitative study were taken into consideration. The setting of this study focused on a school in a suburban area of Bangkok, Thailand. The study found that primary school students, parents and teachers have positive perceptions toward the use of computers, the Internet and social networking sites. They mentioned frequently about the availability of computers at home, information literacy in terms of reading and writing skills, English language fluency, the quality of the electricity connection, Technology Readiness Index, the Internet usage and social networking sites usages [9].

The research by Chutima Intarapanich aims to investigate the EFL teaching methods, approaches and strategies which would be found in English as a foreign language classes in Lao PDR. To obtain the data, qualitative research methods, namely, observations and interviews were both administered with 5 English teachers, from schools in Vientiane Municipality, who agreed to participate in the research. The results of the study revealed that Communicative Language Teaching (CLT), Grammar Translation Method (GTM) and Total Physical Response (TPR) were three major methods/approaches found in the foreign language classrooms studied. Regarding the language teaching used, the activities found implemented in primary grade level were limited and short while more various activities were found in the secondary level. Many activities in the secondary schools provided the students more opportunity to communicate and use the language. In addition, the activities in the secondary level appeared to be longer and more complicated than those found in the primary level [10]. Almost 70% of primary and secondary schools in the UK now use tablet computers, according to research.

III. RESEARCH METHODOLOGY

The study has been mainly conducted with the help of a questionnaire prepared for the purpose. Queries relevant to the theme under study has been included in the questionnaire like use of computer in primary schools, secondary schools and higher educational institutions. Secondary information on the subject has been collected from sources such as books, journals and the Internet.

IV. COMPUTER TECHNOLOGY IN PRIMARY LEVEL

Computer studies in primary school have become highly important in the last few years. Computers are a part of our world now. For those who grew up when computers started entering the home, they understand more than anyone else why primary school students need to start off knowing computers. Everything can be with computers whether it is a PC desktop, laptop, or iPad. Education is changing what needs to be known because history continues to make itself. In other words, dinosaurs are still a part of education for young children, but they also have to focus on what will occur in the future. Digital pen, digital screen etc can be used in primary level to teach children easily and effectively. Such computer technology is used in Japan, USA and European countries.

A. The (M-Learning)

In the past years, companies have recognized that the learning of education through mobile is increasing at an alarming rate. For now the trend of using computers is changing to mobile phones. Mostly people use mobile phones for internet rather than computers. Traffic of mobile users has increased twice compared to computers and that is why mobile app development companies are developing learning apps for the education sector which eventually contributes in an increased user engagement level.
B. Tablet and Laptops

Institutions are changing their teaching tools into more of tech ones rather than the conventional teaching methods, like laptops and tablets rather than books. Using blackboards for teaching purposes has been the part of the past now. Conventional ways of teaching had higher costs than the methods used in the current era. New technological methods have reduced the high cost that once. A big thank to the technology that it has helped in spreading education in the majority of households.

C. Learning through Smart Board

The smart board provides the facility for learners to participate in the instructional process. It gives the platform for students to understand the subject through writing, teaching and drawing. Every student has a facility to participate in the discussion via tablets and notebooks. Makes it easier and fun to learn more stuff smartly. Computers change with new models each year, sometimes each month. Without keeping up with how things change and what is out their students will be behind. Granted, younger children should at least know how to turn one on and some of the basics of computers such as how to find an online site to play a learning game.

D. Advantages for School Administration

Records of students (personal, academic, financial), Records of employees of school, Accounts of the institution decision making process and aid to memory with minimum paper work.

E. The Tab School in the Slum of Bangladesh

Koral is one of the largest slums in Dhaka, the capital of Bangladesh. Home to an estimated 40,000 people, it is never quiet. There is one building that has recently become particularly loud though. It is a rough tin shed, which rings with the sound of students laughing, talking, and singing their multiplication tables, along with animated voices for hours every day.

![Figure 1: Children in BRAC’s primary School in Koral Slum [11].](image)

Computer studies are a small part of primary school but nonetheless important since they are the tool students will need to use for the rest of their lives. Other countries of Asia like Singapore and Malaysia are advanced in using computers at primary level. South Asian countries like Bangladesh, India and African countries are also moving up with using computers from primary level of education.

The advantages of computers in education primarily are (i) storage of information (ii) quick data processing (iii) audio-visual aids in teaching (iv) better presentation of information (v) access to the Internet and (vi) quick communication between students, teachers and parents.

V. USING COMPUTERS TECHNOLOGY IN SECONDARY AND HIGHER SCHOOLS

Computer education in schools play important role in student’s career development. Computer with internet is most powerful device that students can use to learn new skills and more advanced version of current lessons. Schools are around the globe teaching student’s basics of computers and internet. The uses of computers and internet are growing day by day. In almost all business, companies, schools computers are used for various official operations. New tech tools are coming that helping students to learn better. All parents want their kids to be intelligent and creative. Computers and internet not only help students to explore creativity and imagination but also help to understand technologies. Students are future leaders for any nation. Current school students are future doctors, engineers, entrepreneurs. So, for the education development it is really important to teach students in schools about computers, internet and its benefits.

A. Computer Based learning

Computer Based learning are (i) Computer Based Training: CBT is low cost solution for educating many skills to a large number of people in less time at their own pace (ii) Computer Aided Learning: Using computer both the teacher and students can save their time and effort (iii) Online Education: Many website based institutions are offering degrees online by teaching online and assessing the students online (iv) Distant Learning: Students can get education without going outside and attending classes in fixed time frame. At most students have to visit some campus near their locality. Virtual University setup is an example of online education (v) Online Examination: Online examination is based on MCQs. The result is announced without any delay. Examinations different international certifications are held online. Microsoft MCSC and CCNA are examples of online examination and (vi) Use of Videos in Education: Video is another instrument which is used for the recent year. Evan’s says third of pupils are accessing online video through their own initiative to help with their homework.

B. An Online Learning Opportunity

Cloud computing seeks to virtualize the classroom. Schools can now leverage on cloud technology and set up online learning platforms for students to log on and attend classes in a virtual environment. Take for example, the
concept of cloud-based virtual learning environment (VLE), which allows students to access learning content and participate in discussions in forums. Assignments or even tests can also be easily disseminated to the class, minimizing the need for students to be physically present, but to encourage interaction and Schools, will only need one major thing to be prepared for the future. They will not need software installed, servers or local file storage. Schools will need a fast robust internet connection. Infrastructure is paramount to the future of technology in education.

This is where devices come in. All devices, not matter which ones we will use in the future will need to access the cloud. Each student will have their own. Either a device specified by the school or one they have chosen to bring in themselves. School classrooms are going to change. Games fields, gyms and school trips will all change. Whether offsite or on site the school, teachers, students and support staff will all be connected. In future all classrooms will be paperless.

Schools and other educational institutions will need to futureproof their infrastructure the best they can. This should be happening now. If someone want to start to use mobile technology in his school, whether it is an iPad program or bring his own device (BYOD) program his connectivity must be fast and reliable. Student and teacher buy in, is so important. If the network is slow and things are not working properly students and teachers will not want to use the devices. Make sure that the infrastructure is there before the devices.

In Bangladesh students in schools are still using Windows XP and CRT monitors. They are learning more theoretical portion of computer then practical knowledge of computers and internet. It is because the lack of IT infrastructure. That’s why the level of computer education and creativity in students towards computers and technologies is very low as comparing to other countries like Singapore, India and Malaysia.

Government of government is also trying to improve the education level but not fully focused towards the education and for development of unemployed youth. Industrialization is not only one formula or overseas investment which can lower down the rate of unemployed educated youth of Bangladesh. It can help but only for few people who are highly skilled and have enough money to invest to get a job. There are many skills of programs run by government of Bangladesh. At present Bangladesh government is taking high imitative by improving the level of school’s education in government schools.

VI. COMPUTER TECHNOLOGY IN UNIVERSITY EDUCATION

Technology has struggled to find its way into the classroom in all sorts of ways, from projectors and televisions to computer labs and student laptops. Along with improving the way students are taught, it is also vitally important that students learn to use computers to improve their own work and prepare for careers in a world where computers have become as common as the pencil and paper.

Modernizing Education: Education has benefited from the inclusion of technology and computers by making it easier for students to keep up while helping teachers by improving the way lessons can be planned and taught. Students who use computers learn to use word processors for work, and subsequently they learn computer jargon and strengthen grammatical skills. Students can also look up lessons on websites or through email rather than luggng heavy textbooks with them every day. Researching Made Easy: Accessing the Internet from your computer allows you to quickly search for information and begin researching. Improving Student Performance: Students who use computers have been shown to attend school more steadily and perform better than students who do not use computers. Along with getting higher grades on exams, students also stated they felt more involved with their lessons and work if they used a computer. Research: Technology has made research far easier than in the past. Decades ago, students learned history by going to the library and thumbing through history books and encyclopedias. Today, many of those same books are available in digital format and can be accessed online. As the Internet has grown, so too has the available research options. Students can research topics in minutes rather than the hours it used to take. Electronic sources such as the Internet provide current, in depth, firsthand information and allow for communication with peers and experts around the world.

Improving Student Performance: Students who use computers have been shown to attend school more steadily and perform better than students who do not use computers. Along with getting higher grades on exams, students also stated they felt more involved with their lessons and work if they used a computer. Using computers gets students to become more focused on their work at home, in collaborative projects with other students and on their own.

Learning Job Skills: Computers play a vital role in the modern business world, and many of even the most basic jobs involve technology and computers. Teaching students how to use computers helps them prepare for any number of possible careers, and classes based on computer education can get even more specific. Many classes teach students to use office suite programs, create presentations and data sheets, and learn any number of programming languages such as C++ or Java. Efficiency: Computers make the learning process a lot more simple and efficient, giving students’ access to tools and methods of communication unavailable offline. For example, students can check their grades or lesson plans online, and also communicate directly with their teachers via email or educational platforms such as Blackboard. Students can also send work to their teachers from home or anywhere else, letting them finish work outside the constraints of school hours and teaching them about procrastination and personal responsibility. Easy and Neat Work Presentation:
Computer programs like Microsoft Word, Microsoft PowerPoint and Microsoft Excel can help you complete your schoolwork in a neat and organized manner. Equal Opportunities: In USA the percentage of students using personal computers at school was almost equal among students of different backgrounds. Online and Hybrid Courses: Computers provide students with Internet access to attend online and hybrid courses. Social Media: Many college professors are using Facebook, Twitter or Edmodo to post their assignments online and to communicate with students outside of class.

A. Role of Different Computer based Software

Role of Different Computer based Software are discussed in this section. CAD: Computer Aided Design (CAD) is used for drawing complex shape and structures. ARENA: It is a basic simulation software that is mainly used to simulate a queue. COMSOL: COMSOL Multiphysics is a finite element analysis, solver and simulation software / FEA software package for various physics and engineering applications, especially coupled phenomena, or Multiphysics.

![Figure 2: LCD Touch Board.](image1)

![Figure 3: Virtual Reality. Technology in Education.](image2)

Virtual Reality: Virtual reality can be created with specially modified 3D devices. At present moment research is going on to make this technology handy for mass use. It can be used to simulate 3D environment that will feel like a reality to the users.

B. Advantages of Technology in Education

Promotes Independent Learning for the Students: Students can already learn from their own even without the assistance of their parents and teachers. They are just going to surf the internet in order to look for the lessons they need to study. Quick accessibility and well-equipped with the skills and knowledge in operating a computer would be very helpful for the students.

LCD Touch boards: Instead of the traditional big board in front of the classroom, it will probably be just like the Samsung SUR40 for Microsoft Surface, a giant tablet with its LCD screen lying flat atop a table-like structure. Students will sit around the table tablet, swipe on the board to manipulate and drag images around the screen, or type notes with their onscreen keyboards. Easier Access to Information: The need for heavy books to be brought back and forth from school and home is no longer needed with technology. The books can stay in the classroom because the information that they need is easily accessed on a computer. Promotes Exciting Way to Educate Students: Since there are lots of images, videos and other graphics and text that may be found in your computer, more students would feel the excitement in studying through the use of the gadget. This is very important in order to arouse their interest in studying.

MOOCs (Massive Open Online Course): MOOCs is a platform where every student can discover a free online course through internet for years, although the quality and quantity of courses changed day by day. It has changed the face of education. MOOCs can be considered as a term or word related to the scalability of open and online education. Biometrics: Eye Tracking: One technology that’s been gaining recognition is biometrics. Conventionally biometrics are associated with the security industry, as it uses what is unique to each one of us to authenticate our identity: fingerprints, facial recognition, iris patterns, voice. In terms of education, some schools are only using fingerprinting to prevent truancy and for borrowing books from their school library.

Abstract Thought, Real-Life Models: As it will be for many other subjects that require some form of visualization, the decreasing cost of 3D printers means that more teachers will be able to reconstruct complex concept models to teach theoretical concepts. For instance, the concept of molecular structures and configurations may be hard to grasp, but by printing out physical versions of these structures, this can help students put a form on abstract thought, and aid in better understanding. Google Sky Map: This is an augmented reality app which makes learning about astronomy interesting and fun. Instead of looking at descriptions of constellations in a book and then attempting to identify them in the sky, you can use Google Sky Map to directly identify stars and constellations using the camera on your smartphone.

VII. REAL LIFE USES OF COMPUTERS IN EDUCATION

Teaching learning can be in the following ways:
(i) Instructing the students using PowerPoint slides, Word documents or Web pages and using hyperlinks for better concept clarity (ii) Helps in improving pronunciation of students by using microphones, headphones, speakers, specially prepared software and special dedicated websites (iii) Video conferencing, chat and email helps in better communication (iv) Collecting notes /pictures/videos from web pages for detailed information and projects/assignments (v) Saving the documents as soft copy for future use and (vi) Learning through animations, as they are much near to the students.

VI. IMPACTS OF COMPUTER

Positive Impacts of Computer are listed below [12],
(i) Computer has made our daily tasks more easy and quick.
(ii) Institutions are using computers for keeping their records (iii) Banks are using computers to maintain accounts and transactions (iv) Online banking is used all over the world (v) Trading is done before the screen of the computer (vi) People can learn foreign language more easily using different interactive software (vii) Computer is used in every field of life such as medical, business, industry, airline weather and (viii) Forecasting, simulation and nuclear energy models.

Negative Impacts of Computer are listed below [13]. Unemployment: Computer applications in every field of life has reduced the need of people and increased the unemployment in society.

Wastage of time and energy: Playing useless games and chatting for hours and hours causes the wastage of precious time and energy. Data Security: Data may be lost in computer if proper security measures are not taken properly. Cyber Crimes: People are involving in cybercrimes using computers and networks. They may stole credit card numbers using internet or transfer money from the other person’s account.

VIII. THE FUTURE APPLICATIONS OF COMPUTER

A. Education beyond the Classroom

In the future, education will no longer be restricted to formalized institutes like schools and classes. Using AR, cloud computing, online social networking and adaptive learning systems utilizing eye tracking technology, learning can take place outside the traditional classroom. Experimentations and mistakes will also be encouraged as simulations are made possible through 3D printing and game-based learning without actually incurring real-world consequences or costs. Chief among all, students will soon be imparted with the wisdom of seeing learning as not a chore, but as a critical and gratifying part of their life which requires their proactive involvement- Research is going on to make this technology much more advanced. Artificial intelligence and Holograms will be the future outcome and Hologram can be used to make the teaching more interactive from a distant location. Holography is the science and practice of making holograms. Typically, a hologram is a photographic recording of a light field, rather than of an image formed by a lens, and it is used to display a fully three-dimensional image of the holographic subject, which is seen without the aid of special glasses or other intermediate optics. The hologram itself is not an image and it is usually unintelligible when viewed under diffuse ambient light [14].

Biometrics: Eye Tracking: One technology that’s been gaining recognition is biometrics. Conventionally biometrics are associated with the security industry, as it uses what is unique to each one of us to authenticate our identity: fingerprints, facial recognition, iris patterns, voice. In terms of education, some schools are only using fingerprinting to prevent truancy and for borrowing books from their school library. 3D Printing: 3D printing, also known as additive manufacturing (AM), refers to processes used to create a three-dimensional object[14] in which layers of material are formed under computer control to create an object. Objects can be of almost any shape or geometry and are produced using digital model data from a 3D model or another electronic data source such as an Additive Manufacturing File (AMF) file. Thus, unlike material removed from a stock in the conventional machining process, 3D printing or AM builds a three-dimensional object from computer-aided design (CAD) model or AMF file by successively adding material layer by layer [14].

![Figure 4: The 3D printer product](image)

Engineering students and teachers are prime examples of who could directly benefit from 3D printing technology. In Benilde-St. Margaret’s School in Minneapolis, the school’s Dimension BST 3D printer lets students create design prototypes. The 3D printer produces working mini-models to test out engineering design principles, so students can perfect their design before making an actual prototype. Together with CAD (computer-aided design) modeling software, 3D printing allows these students to experiment freely with their designs without expending considerable costs and time.

IX. CONCLUSION

The computer technology has a deep impact on education. Computer education forms a part of the school college and University curriculum, as it is important for every individual today, to have the basic knowledge of computers. Students find it easier to refer to the Internet than searching for information in fat reference books. The process of learning has gone beyond learning from prescribed textbooks. Today, aspirers can satisfy their thirst for knowledge by means of the Internet. It is easier to store information on computers than maintaining handwritten notes.

In the future, students could learn in flexible, customizable environments designed to best meet their needs and choose from a virtually unlimited quiver of tools and devices. Teachers could continually assess and adapt curriculum to best support their students. And with ubiquitous access to mobile technology, learning is no
longer constrained by an arbitrary time period or even the physical dimensions of a school.

References
4. Associated Press; "Most teachers think computers are boon to schools, poll says". The Deseret News August 28, 1989.
Considering Pros and Cons of Initial Public Offering (IPO): An Empirical Study on the IPOs of Dhaka Stock Exchange

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\textbf{Abstract} - To arrange capital for high profitable projects, many companies tend to go public. Making an Initial Public Offering (IPO) has both advantages and disadvantages and thus, before going public, the weight of costs and benefits of IPO must be taken into account. This research was done by conducting empirical studies. Secondary sources have been used to look further into the issue. An analysis is done on IPOs of Dhaka Stock Exchange (DSE) in order to see whether all companies’ IPO decision is successful or not. The goal of this study is to investigate both advantages and disadvantages of IPO in detail. This study will help the companies going public for the first time by showing analysis of both pros and cons and researchers and market analysts will get benefitted as well. It is noteworthy that a company may make IPO only if disadvantages of IPO do not exceed its advantages.

\textbf{Keywords} - IPO, Capital, Advantages, Disadvantages

I. INTRODUCTION

One of the benefits of going public is that it gives the company the opportunity to raise fund from the capital market [17]. Companies with business prospects, large current investment and future investment will find going public appealing and will be willing to use the opportunity to raise funds for capital investment. IPO provides an immediate influx of capital that can be used for expansion and diversification of operations. The decision to go public requires considerable planning and analysis from both legal and business perspectives. The planning and analysis processes involve: weighing the costs and benefits. The company needs to think carefully about whether it is right for them and whether they can achieve an acceptable valuation when making decision to go public. Despite the cost and challenges facing companies that are going public, some companies still prefer to do so as alternative way to raise fund for valuable projects. This raises the question of why some companies choose to use public equity markets and some do not.

II. THE PROS AND CONS OF IPO

\textbf{A. The Pros of IPO}

A business may have a number of reasons for choosing to go public. These motives have no order of importance, but rather it depends on the circumstances that the business is in which ultimately decides why it will delve into this market. Some of these reasons are discussed below.

- \textbf{Access to capital:} Going public permits a company the prospect of raising equity finance both during initial listing and further down the road when more capital is required. Indeed, being floated in the active capital market like AIM can enable Good Energy to raise equity capital significantly [4].

- \textbf{Market for company’s stock:} Having shares in the market is always a good thing as it increases the shareholder base, encourage new prospects to be a part of the company through while also allowing the existing shareholders to leave at a later date if they choose to do so. Moreover, it kindles liquidity in the shares and gives shareholders the opportunity to realize the value of their holdings [12].

- \textbf{Employee commitment:} Having shares in the public market is a blessing in disguise for the employees. This is because employees who are rewarded with ownership schemes rather than bonus schemes have access to a tangible value and market for trading. This encourages the employees to actively participate in the ownership of the company which in-turn benefits them as well. This results in increased long-term commitment between the business and employees and in turn helps the company to attract top-notch professionals [12].

- \textbf{Greater acquisition prospects:} AIM listing has fewer regulations where there are no minimum limits on capitalisation or on the amount of shares in public hands. Thus access to increased capital will in turn increase the
likeliness of procurement of private or other public companies.

- **Prestige of running a public company:** The listing on a public market without a doubt means increase in exposure, prestige, and public image for the business. As it receives more extensive press, thus, widening the awareness of the company and its products. This heightened profile in turn can help to sustain demand for and liquidity in the shares [12].

**B. The Cons of IPO**

There are always drawbacks to taking a certain decision, and becoming a public company is the same. Some of these drawbacks are seen only once either at the inception or during the flotation process, while having to do deal with issues like reporting, etc. has to be taken care of always. Some of these problems are analysed below:

- **Exposure to market swings:** Market conditions those are beyond the scope of a company’s control play a major part in affecting the price and liquidity of the share in the market. Shares may suffer from liquidity, or price may see an adverse turn of events, etc. This is especially dangerous to smaller companies as they struggle to keep up with the big-guns and the private companies who are more immune to such market swings.

- **Probable loss of control:** Sale of shares in the public market means handing over a large chunk of the administrative control to the outside shareholders, whose views must be taken into account. Since most shareholders typically look towards the short-term goals of seeing continual rise in the company’s price of stocks. Thus, there is tremendous pressure to satisfy shareholders’ demand for steady increase in earnings thus leading to a conflict between short-term performance rather than long-term strategic goals [10].

- **Reporting:** Turning the company private requires a high level disclosure and reporting. This means the company requires another large investment in various departments like the management information system in order to fulfill the various requirements of the complying with the rules and regulations [12].

- **Accountability:** Since there is a greater answerability in a public company, the director and others involved in the operations of the company will lose their privacy and they enjoyed by having to answer to the outside shareholders.

- **Expensive process:** A considerable large amount of finance is required to cover the cost listing. Furthermore, huge amounts of executive time are also required. The costs include the likes of flotation cost, the cost of raising additional funds (capital) and the other fragmentary costs that are involved to maintain the listing is quite substantial, especially to comparatively smaller companies [12].

As discussed here, there are several pros and cons of being floated in the stock market. Generally, going public decision is a very important strategic decision which requires a careful consideration of several factors and a firm should go public only when the benefits of doing so exceed the costs.

**III. STOCK PRICE ANALYSIS OF DIFFERENT INDUSTRIES OF BANGLADESH**

Some of the leading industries of Bangladesh have been selected to conduct an empirical study such as, Engineering, Pharmaceuticals and Chemicals, Fuel and Energy, IT Sector and Textile. Under each of these five industries 2 to 3 companies, that have made IPO two or three years ago, have been selected to do an analysis on. Main focus is on the closing price of these companies for last few years starting from their first day of going public to 2017. Ups and downs of stock price help to know whether making IPO is always a good decision or not. Decision of going public is not always fruitful because sometimes market situation and other factors decrease the price of the shares. Many companies’ current share price is lower than their initial share price, with which they turned from private to public company. Following are the tables and graphs of quarterly closing price of the sector wise companies. The closing prices below represent the prices of the last transactional day of a quarter’s last month. All the data collected from Dhaka Stock Exchange (DSE) Ltd’s website dsebd.org.

**A. Engineering**

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Bangladesh Steel Re-Rolling Mills Ltd</th>
<th>IFAD Autos Ltd</th>
<th>Olympic Accessories Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face Value</td>
<td>35</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>Jun 2015</td>
<td>73.7</td>
<td>110.6</td>
<td>58.9</td>
</tr>
<tr>
<td>Sep 2015</td>
<td>131.3</td>
<td>110.6</td>
<td>51.5</td>
</tr>
<tr>
<td>Dec 2015</td>
<td>131.6</td>
<td>92.2</td>
<td>33.1</td>
</tr>
<tr>
<td>Mar 2016</td>
<td>194.7</td>
<td>88</td>
<td>33.3</td>
</tr>
<tr>
<td>Jun 2016</td>
<td>147.8</td>
<td>84.3</td>
<td>26.3</td>
</tr>
</tbody>
</table>
Engineering sector is an important industry in Bangladesh. Demand for machineries is also increasing. Bangladesh Steel Re-Rolling Mills Ltd, IFAD Autos Ltd and Olympic Accessories Ltd are the companies that fall under engineering industry of Bangladesh. These three companies first offered share to public in 2015 and became public limited companies. Bangladesh Steel Re-Rolling Mills and IFAD Autos are progressing from the price they started with. IFAD had very lower price in 2016 than that of June 2015 but higher than its initial price; however, the price rose again in the 1st quarter of 2017. On the other hand, Olympic Accessories’ current share price is very low and in the graph it shows that it has a decreasing trend. It indicates that the volatility of the abovementioned companies’ share price is intense and fluctuation in share price leads to an uncertain outcome. In this case, IPO may or may not be a fruitful decision in the long run for these three companies; especially for Olympic.

B. Pharmaceuticals and Chemicals

<table>
<thead>
<tr>
<th>Company Name</th>
<th>ACME Laboratories Ltd</th>
<th>Far Chemical Industries Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face Value</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Dec 2014</td>
<td>-</td>
<td>29.5</td>
</tr>
<tr>
<td>Mar 2015</td>
<td>-</td>
<td>27.6</td>
</tr>
<tr>
<td>Jun 2015</td>
<td>-</td>
<td>43.7</td>
</tr>
<tr>
<td>Sep 2015</td>
<td>-</td>
<td>48.7</td>
</tr>
<tr>
<td>Dec 2015</td>
<td>-</td>
<td>28.7</td>
</tr>
<tr>
<td>Mar 2016</td>
<td>-</td>
<td>27.6</td>
</tr>
<tr>
<td>Jun 2016</td>
<td>116.4</td>
<td>28.3</td>
</tr>
<tr>
<td>Sep 2016</td>
<td>105.6</td>
<td>25.2</td>
</tr>
<tr>
<td>Dec 2016</td>
<td>99</td>
<td>23.9</td>
</tr>
<tr>
<td>Mar 2017</td>
<td>115</td>
<td>28.7</td>
</tr>
</tbody>
</table>

Pharmaceuticals and Chemicals industry is doing very good in Bangladesh and one of the most powerful and dynamic sector which has its contribution to GDP growth [3]. ACME Laboratories first offered share to public in 2016 and Far Chemical Industries did in 2014. Both of the companies started with the face value of Tk. 10. ACME and Far Chemical both have fluctuation in share price; however, the volatility of the latter’s share price is intense and it shows uncertainty of their performance. Price may fall in future depending on many factors. Thus, it can be said that IPO is not always a good choice for every company.

C. Fuel and Power
Fuel and Power industry also has its contribution to the development of the country. Doreen first offered share to public in 2016 and United did in 2015. Doreen’s share price has an increasing trend and growing steadily. Nonetheless, United’s share price is fluctuating and it indicates the volatility of its share price is rigorous. This analysis states that United’s decision to go public is not very profitable but for Doreen, IPO is quite a good chance to enhance its capital.

### D. Information Technology (IT) Sector

#### TABLE IV

CLOSING PRICES OF THE SELECTED COMPANIES OF IT INDUSTRY

<table>
<thead>
<tr>
<th>Company Name</th>
<th>IT Consultants Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face Value</td>
<td>10</td>
</tr>
</tbody>
</table>

### E. Textile

#### TABLE V

CLOSING PRICES OF THE SELECTED COMPANIES OF TEXTILE INDUSTRY

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Dragon Sweater and Spinning Ltd</th>
<th>Evince Textiles Ltd</th>
<th>C&amp;A Textiles Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face Value</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Jun 2015</td>
<td>-</td>
<td>-</td>
<td>17.5</td>
</tr>
<tr>
<td>Sep 2015</td>
<td>-</td>
<td>-</td>
<td>17.4</td>
</tr>
<tr>
<td>Dec 2015</td>
<td>-</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>Mar 2016</td>
<td>19.1</td>
<td>-</td>
<td>9.8</td>
</tr>
<tr>
<td>Jun 2016</td>
<td>11.8</td>
<td>15.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Sep 2016</td>
<td>10.6</td>
<td>18.1</td>
<td>8.5</td>
</tr>
<tr>
<td>Dec 2016</td>
<td>18</td>
<td>18.9</td>
<td>11.2</td>
</tr>
<tr>
<td>Mar 2017</td>
<td>20.4</td>
<td>23</td>
<td>11.7</td>
</tr>
</tbody>
</table>
Textile industry has huge importance in economic growth of Bangladesh. It is one of the most important sectors which essentiality is noteworthy. Dragon Sweater and Spinning Ltd, and Evince Textile Ltd became public limited company in 2016 and C&A Textiles Ltd became public in 2015. Dragon Sweater and Spinning’s share price has been going up and down and during 3rd quarter of 2016 the share price almost got down to its face value which indicates the volatility of the share price to be very severe. On the other hand, Evince Textile’ share price is increasing very slowly and there is a possibility of its decision to make IPO, to be successful in future. Even though C&A Textile started with an increasing share price but during 2016 and end of 2015 its share price went lower than its face value which shows an unsuccessful decision to go public. Selling share below face value means instability of its share price. Therefore, not all companies can increase their capital by making IPO.

IV. CONCLUSION

IPO is a great way of enhancing capital; especially for those companies which do not have market evaluation. It is also a chance for a company to become public limited company and get known as listed company. Entering into the market has both advantages and disadvantages. It can help gather extra capital needed for company but disadvantages may bring a company to an end. Thus, before taking the decision to go public, a company needs to analyze whether the advantages of it overrun its disadvantages or not [7].

Going public helps increase capital, employee commitment, increasing public reputation and etc. However, after going public, a company becomes liable to its shareholders. Moreover, it is time consuming and not an easy process. Market swing is also associated with IPO.

Analysis on IPOs of DSE shows that some of the companies are successful in making IPO but some of them even selling below their face value. The share price volatility gets severe when company share price fluctuates often. Therefore, before going public, a company needs to consider both pros and cons of IPO and reach a decision keeping in mind that advantages should be more than its disadvantages.

REFERENCE


HER Project: Lessons From A Case Study
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Paper#ICBM-17-347

Abstract - Bangladesh economy means Ready Made Garments (RMG); this is not an overrated statement. Workers migration and absenteeism is a common problem faced by the factories causing less productivity. The workers remain absent mainly due to sickness. 70%-80% of the workforces being female, the health issues of women are one of the main reasons for absenteeism. Business for Social Responsibility (BSR) implemented project called HER (Heath Enabled Returns) in the Ready Made Garments (RMG). HER projects focus on raising women workers’ health awareness. This study followed a case study participative method and presents a report on one of the HER project. The study concluded health awareness programs minimise absenteeism thus increasing productivity. The report found apparently with zero/less initial investment, such projects have a significant Return on Investment (ROI). Health awareness also has a far reaching impact beyond productivity by benefitting the neighbourhood thus contributing to society.

Keywords - RMG, Women Workers of RMG, Health, Productivity, Return on Investment (ROI), Cost

I. INTRODUCTION

Health is wealth is an old saying, and a healthy worker is a productive worker. RMG being a labour intensive industry capitalize on low labour cost and productivity. The RMG Bangladesh mainly produces basic garments of low price; therefore the strategy is to produce high volume. For high-end fashion items the strategy is end fashion items the strategy is to produce high volume. However, the strategy in RMG industry capitalize on low labour cost and productivity. The RMG Bangladesh mainly produces basic garments of low price; therefore the strategy is to produce high volume. For high-end fashion items the strategy is end fashion items the strategy is to produce high volume. However, the strategy is different and this is out of the scope of this paper. The only way to stay competitive is to having increased productivity, producing acceptable quality garments and on time shipment of goods.

The garments manufacturing is a complex operation and the business environment involves far wider complexity, and productivity depends on many factors.

This paper only addresses the relation of health with the productivity and seeks to find out: can increasing health awareness through programs like HER also increase the productivity and if so, then what is the likely ROI? 80% of the workers being female, the target group were women workers of the factory.

The purpose of this study was to analyse how health awareness programs affect the productivity and measure the ROI.

II. METHODOLOGY

This study had been a case study of a factory implementing HER project. The study followed a quantitative-qualitative sequential action study approach. The Factory studied has 2,812 workers. 70% of which are females. That means 1,968 were women workers. As per the project policy 7% of the female workers were selected to be trained as Sastho Shakhi (SS) [Peer Educators]. 140 SS received two weeks training, each day for 3 hour covering 12 Topics, and then these SS gradually trained another 1,500 workers. The sample size were determined 460 out of 1,968 population using 95% confidence level, 4 confidence interval; however 540 samples were surveyed and 40 less reliable data were discarded. The result were finalized by 500 worker’s data. Both the 140 SS and the 500 workers were surveyed before and after the project and the differences on awareness on health issues were analysed. The significant factors that led to improvements were correlated with absenteeism and migration to find out how it affects the productivity.

III. Research Design

To answer the question the study conducted an in-depth analysis and an impact assessment of one of the HER project through survey and one to one interview.

The quantitative data were analysed through Excel, and multivariate analyses done by SPSS 20, then the qualitative data were interpreted sequentially following the quantitative ones.

The study found after implementing the project, the absenteeism reduced, the quality of work improved, rework reduced, request for early lunch out or leave reduced and ultimately the workers turnover reduced.

The study tried to quantify these benefits and convert it to ROI but it seemed from the management’s interview that the non-quantifiable benefits were equally important, however, the exact causation percentage could not be attributed to HER project since some other health variables were not included in the model.

The impact of the study crosses the boundary of the factory and the benefit reach the neighborhood and society as well.
IV. THEORETICAL FRAMEWORK

To measure labor productivity without “production factors” is incorrect, Baumol, Blackman, and Wolff (1989:227) explains, “It is obvious that total productivity – better known as multifactor productivity – is the best input efficiency index, it would thus seem that labor productivity is a measurement that sheds light on the results of the productive process for its participants.” In his “Hierarchy of Needs,” renowned psychologist A.H. Masklow mentioned about physiological needs, this will also be a lens thorough which the study will see.

V. THEORY OF RMG PRODUCTIVITY

No of workers \( \times \frac{\text{Total Minutes worked} - \text{loss time}}{\text{Standard Allocated Minute (SAM)}} \times \text{Efficiency} \)

A model simulated by using the above formula where SAM is constant 25 minute, A number of 40 and 60 workers were used, and time worked ranging from 400 to 800 minute, with efficiency 40%-60%.

The above model shows any changes in number of workers, working hours and efficiency affects productivity. Also, if we simplify process and reduce SAM that will affect productivity, too. Now, the question may arise if workers numbers are less due to absenteeism than increasing the working hour is supposed to offset the problem and result into achieving same targeted productivity. But the answer is not that simple. Why? To understand this manufacturing process of a garment has to be understood.

VI. STRATEGY OF THE HER PROJECT

The HER project identified followings priority health issues after carrying out a health needs assessment in garment factories:
- Anemia.
- Lack of awareness and understanding of Family Planning.
- Lack of awareness of general health ad disease prevention.
- Shy to talk on HIV/STIs, and have no clear idea on STDs
- Menstrual hygiene.
- Reproductive health.

The project then created a project team involving workers, middle and top management, collected baseline data/before project, selected SS, trained them on the above topics for 2 weeks, 3 hour each day; who (SS) in turn trained in production lines. After implementation of the project data were collected and an impact analysis was done.

VII. RESEARCH QUESTION

Main Research Question: If a health education awareness project like HER is implemented in a factory can the program increase productivity? If so then what is the likely ROI?

Sub Questions:
What are the health factors contribute to increased productivity?
Why on health issues, workers migrate from one factory to another factory?
VIII. RESULTS

A. Figures and Tables

Before the HER project, the complaint pattern collected from doctor’s room shows that Weakness, Headache, Vertigo and Musculoskeletal complains are the most common complaint. After the project there was a little improvement on Vertigo, Musculoskeletal issues but a marked improvement on Weakness and UTI.

140 SS, most of them are having 5 years schooling, followed by up to 9 years and a few has 10 years and 10+ years of schooling.

B. Analysis of Data

Profile of workers:
- Female Workers Average age is 24.9 years
- 54% belongs to younger age group (18-25 years)
- 28% workers did not complete even primary level education
- 69% are currently married.
- 66% migrated to current living place within 5 years

The data show Significant improvement on STI, STD, Family Planning, and Menstrual Hygiene and HIV awareness, the HIV shy dropped to Zero. In this data the education criterion is discarded as the training materials were in Bengali, easy to understand pictures that can be easily grasped by even illiterate people. The miscarriage and abortion rate also dropped by 25%, and 100% workers started using sanitary napkin during menstrual cycle. Whereas, earlier they used to use clothes patch that was unhygienic. Thanks to the garments management who also supplied sanitary napkin to the workers at a subsidized rate. One napkin cost 35 BDT and it was supplied to the workers by 17 BDT, i.e. in 50% reduced cost. This also played a role in inspiring the workers to use hygienic sanitary napkin.

Multivariate analysis show the abortion rate or miscarriage was less in group having 10 or 10+ years of schooling, it is likely for being educated they have a voice in the family. However, after the awareness
program regardless of education level all participants were equally equipped with general knowledge on daily health issues and the abortion, miscarriage rates dropped by 10%, moreover, none of them were shy anymore to talk on family planning, STDs or HIV issues. They became vocal on their health problems and the visit to doctor’s room increased by 20%, before the awareness program when they felt sick they just remained absent or took off after lunch. The complaints of weakness reduced drastically by more than 50% because they were aware of hydrating themselves, took more water, and used toilet instead of holding their urine for long as a result the UTI also decreased by 40%. Awareness on safe sex, and using condoms also prevented the UTI, and STIs, and even if someone was having any STD problem, she did not hesitate to ask for medical help anymore.

C. Overall findings of HER

Almost forty percent (37.3%) mentioned to miss at least for a single day in the last month before the survey. The bivariate analyses provide evidence that post intervention factories where HER project had been implemented showed significantly less absenteeism than the other 2 types of factories. The linear regression is not applicable due to low explanatory power of the fitted model. However, while recoding the absenteeism into a dummy variable which takes values 1 for at least one day absent and 0 for no absent days and fitting it into a logistic regression, the crude odds ratio tells that respondent from intervention factories are four times more likely and control factories are twice likely to be report for at least one day absenteeism compare to the post intervention factories’ workers. While controlling for workers age, position, educational exposure, wealth and marital status, these odds lessen but still remain significant. In conclusion, it can be said that the factories where HER project completed and sustained for two years, absenteeism reduced significantly.

<table>
<thead>
<tr>
<th>Treatment status of the respondents</th>
<th>Post-intervention</th>
<th>Count</th>
<th>% within</th>
<th>100.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Were absent</td>
<td>389</td>
<td></td>
<td>19.9%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment status of the respondents</th>
<th>Intervention</th>
<th>Count</th>
<th>% within</th>
<th>100.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Were absent</td>
<td>779</td>
<td></td>
<td>39.9%</td>
<td></td>
</tr>
</tbody>
</table>

D. ROI

Cost saving areas due to HER project activities

<table>
<thead>
<tr>
<th>Cost saving area</th>
<th>Baseline</th>
<th>During</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning Material Cost</td>
<td>60,000 Taka</td>
<td>24,000 Taka</td>
<td>18,000 Taka</td>
</tr>
<tr>
<td>Medicine Cost</td>
<td>45,000 Taka</td>
<td>33,500 Taka</td>
<td>12,000 Taka</td>
</tr>
<tr>
<td>Sewerage Line Cleaning Cost</td>
<td>2000 Taka</td>
<td>500 Taka</td>
<td>Nil</td>
</tr>
<tr>
<td>Re-work</td>
<td>5%</td>
<td>3%</td>
<td>1%</td>
</tr>
</tbody>
</table>

The intangibles:
- Reduce worker’s exhaustion, and happy workers.
- Equipped with knowledge regarding common health problem. Became interested to communicate.
- Utilization of personal hygiene product – Sanitary napkin, in-house health facilities.
- Conscious about Common diseases and medical facilities.
- Developed the quality of life inside the factory.
- Communicated this awareness into the community, neighborhood and working as health advisor.
- Before the project 60% of the workers believed in Jhar-fook (鬼), and after the awareness program they started questioning the effectiveness of these jhar-fooks, and stopped going to quacks. Also, the workers stopped believing in ghosts and mysterious deseases.
- Reduced rate of migration/turnover of workers for having a healthy and safe workplace.
- Confidence building on management through effective dialogues.

C. Increased Productivity

The Increased productivity curve shows 7% absenteeism restricted the productivity to 600,000, 5% increased it to 650,000 and a 3% absenteeism increased the productivity to a million.
From the table of ROI, the company saved 70,000 BDT from maintenance fund only, and in production taking into account of 300,000 pcs increase, which means 300,000 $ minimum. The cost of rework fell by 1% which is a very good score as per ISO 9001:2015 Quality Management System (QMS). These were the visible ROI reflected from the awareness program, and if we put a value in the intangibles which cannot be quantified, the ROI becomes significant in exchange of only 40,000 BDT monthly investments. Note these investments were also voluntarily delivered by the management in providing sanitary napkin in subsidized rate. The project was designed in such a way that the trainings never collided with the production activities. However, some survey, interview, and awareness program has to be conducted during break hour.

IX. LIMITATIONS OF THE STUDY

The study did not consider other issues of health like stress, working under pressure, and some other psychological aspect that needs to be incorporated in the future research. Also the study did not further investigate on continuing the programs and build upon the strength achieved.

X. CONCLUSION

In this report results were obvious that awareness programs on health issue benefits a manufacturing organization. It directly increases productivity by reducing absenteeism and migration. The ROI is significant. In some cases the plants even do not need to invest money directly excepting investing in training only. The far reaching impact of benefitting the neighborhood has also a social impact. Considering the intangibles that cannot be quantified but visible results are seen through more aware, conscious, more productive and happy workers.

XI. FUTURE RESEARCH

A detailed research is needed to study the continuation, cumulative effect and sustainability impact of such health awareness programs.

ACKNOWLEDGMENT

The writer acknowledges the contribution of HER project team of BSR, Primark and Population Council for a successful implementation of the awareness program. Ms Nazneen Huq and her team for periodical visit to assess the progress and training the Peer Educators. I also thank Mr Sohag and Mr Irfan for their whole hearted support in finalizing the findings.

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Impact on telecommunication companies due to growing popularity of mobile messaging applications: A case of Bangladesh telecom industry

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Abstract - The telecom industry has been one that has had to deal with a continuously changing business and technological environment more than most other industries over the past fifty years. The recent trend of Bangladesh is that people spend more time in social media sites and they use messaging apps to make calls and messages, thus these changes have a huge impact on the telecom operators of our country. Bangladesh has 5 telecommunication companies currently, which include Grameenphone, Airtel Bangladesh, Robi, Teletalk and Banglalink. The messaging apps which are very popular among people are Facebook messenger, Viber, WhatsApp, Hike, Imo and the recently famous Snapchat. The paper aims to find and examine the impact on the telecom operators’ due to the growing popularity of these social apps. The growing impact of messaging apps services on telecom’s voice and messaging revenue is a widely accepted phenomenon. Their impact on mobile data traffic and telecom data revenue is also areas that have been acknowledged as critical points for consideration. This study attempts to link these issues to shift in consumer preferences, identify the underlying factors to understand the factors driving users towards these apps services.

Keywords – telecommunication, social apps, internet usage, telecom revenue, voice calls, impact on telecom

1. INTRODUCTION

Telecommunication industry is one of the most important sources of GDP all over the world. Its main income comes from the calls, messaging and data purchases. But the access to internet with broadband and wireless internet (4G) and the free mobile apps for messaging and calling are getting increasingly popular by the day. Applications such as Skype, WhatsApp, Viber, Messenger provides free of cost messaging and calling facilities. So these are growing fast and people are observed as to preferring to use those apps more as a substitute of using inbuilt mobile messaging and calls. Recently in USA, telecom industry had $386 billion loss due to Skype, WhatsApp and others[1].The popularity of these apps is seen in Bangladesh too. To make any international call people do not have to think about cost. They can easily do so using any of those apps with the availability of a good internet connection. So the topic of this research, impact of the mobile apps on telecom industry is truly very meaningful. The importance of this research is that it shows us how internet is rapidly becoming very popular. It will change the whole concept of making calls, messaging and usage of mobile phones. In this research, an attempt was made to show the survey of current use of mobile phones of different operators. They have also decreased their call charge due to the popularity of the apps. But it should be noted that the sample is very limited in size. The survey was carried out using Facebook so it means that most of the people who participated in it are from the people who have easy internet access. Nevertheless, the results are alarming for the sector and telecom industry should have some plans in upcoming future to save them from falling further down in terms of popularity and usage.

1.1 SPECIFIC OBJECTIVE OF THE STUDY

Find out the impact on telecom companies due to growing popularity of mobile messaging app in terms of communication.

2. LITERATURE REVIEW

The telecom companies of Bangladesh are facing a great change in the way people are using them, the changes have occurred due to the increased use of mobile messaging apps in our country. The telecom industries are Grameen phone, Airtel Bangladesh, Robi, Teletalk and Banglalink. A recent report from brokerage Credit Suisse said that threat to traditional voice and messaging business of telecom from communications apps which offer free calling and messaging using the internet is rising [2]. And this threat comes from the rising popularity in the use of Facebook messenger, Whatsapp, Viber, Hike, Imo and many other messaging apps. It has been noticed that people are more interested in using these apps over calling or texting from their phone and the only reason for this is these apps can be we can actually use these apps to call people and talk to them for very large durations of time and that too without any kind of charges. There are many organizations which have studied the impact of these apps on telecom operators. However, very few have shown how shift in consumer preferences & technology trends have led to this state. The impact of messaging apps services on operator’s revenue has been fully apprehended by all the stakeholders in the telecommunication industry [3]. For example, according to Informal’s World Cellular Revenue Forecasts [4] 20187, global annual SMS revenue will fall down from US$120
billion in 2013 to US$96.7 billion by 2018, due to increasing adoption and use of messaging applications. Reference [5] titles “The Future of Voice”, has also studied the impact of OTT VoIP (Voice over Internet Protocol) applications on voice revenue. According to the report [5] the overall global telecom voice revenues (including fixed subscriptions) will decline from $970.4 billion in 2012 to $799.6 billion by 2020, at a CAGR of 2.4%. Also, as a result of VoIP by 2020 the telecom industry worldwide will see a loss of revenues approximately worth $479 billion which accounts for 6.9% of the total revenue from voice. Another report “Consumer OTT VoIP Outlook: 2013 to 2018”9 by Ovum, highlights that the OTT VoIP market is growing at a rate of 20 percent. Its application’s usage will reach 1.7 trillion minutes by 2018, which translates to $63 billion in lost revenue. According to this study, as a result of increasing demand of online applications for messaging, by the year 2016, telecom operators will stand to lose revenue worth $54 billion in messaging services. Nowadays internet has become really affordable and very affordable, the reason for being this much cheap is the high prevalence of Wi-Fi and its fastest speed. People has become so adapted by using internet at such a low price that subscription of internet packages of telecom operators has gone down. They have given a lot of offers undergoing their own losses to retain back their internet package customers but that has gone to vain. Since Wi-Fi has become more preferable. "Proliferation of over-the-top (OTT) content services such as Skype and WhatsApp amongst others could trigger a whopping 30-50% revenue hit on telecom companies’ voice services in the coming months. Telco messaging revenues have already taken a 30% hit, thanks to OTT players,” said Rajan Mathews, director general of Cellular Operators Association of India, the trade body representing GSM carriers such as Bharti Airtel, Vodafone India and Idea Cellular, amongst others [6].

3. METHODOLOGY

Primary and secondary data sources were used in preparation of the paper. A survey was carried out over the internet, where the applicants were chosen randomly. Then the data was processed using different statistical tools and figures and results from primary sources are illustrated in this paper. Data was collected from Bangladesh, through an extensive survey which was online from 10th of March 2017 till 26th of May. The paper used non-probability, convenience sampling method to collect data for the report. A total of 228 surveys were filled out by people of different demographics within this time frame.

4. RESULTS

The growing trends and demands of internet usage coupled with advancements in technology such as introduction of smart phones has created diversified methods of communication. WhatsApp for instance, is such an application that allows users to call over the internet with relatively low data usage. One key finding from the survey is that correspondents believed that messaging apps are better while making calls compared with operators. Correspondents also thought that the impact on the telecommunication companies would be felt due to the rise in use of these messaging applications.

![Fig. 1. Gender of the correspondents](image)

The demography of the data that we have collected is quite balanced with almost equal number of male (112) and female (113) responding to the online questionnaire. Thus we can assume a balanced data on our survey as male and female usage of mobile phones and internet differ to a great extent.

When asked about the telecom operators the correspondents are currently using both Grameenphone and Airtel had a largest share of users among the all with Grameenphone (102) and Airtel (104). Citycell recently Declared bankrupt had 0 users in the survey. The results are illustrated in Fig.2.
Most correspondents here do agree that they somewhat use other third party mobile applications to make a call. With the increase in use of WI-FI based internet and also increased use of smartphones lead phone users to use other third party messaging apps to make their calls. The number of correspondents here who do not use any applications to make a call is very low (3 in total) and this illustrates the need of using other applications by users.

According to figure 5, most correspondents here preferred Facebook messenger as a third-party application to make a call or for messaging purposes. This might be because of the availability of all friends and family in one place. Popular applications such as WhatsApp and Viber is also used by many as third party applications for making calls. In addition to this, the combination of messaging, voice calls and video calls that are provided in one single application make it more convenient and easy to use for smartphone users.

According to the survey, what shifted the consumer’s preference from using telecom for making calls. Most of them responded with cost as the main factor for using third party applications for making a call. Also, communicating with people outside the home boundary was easier and significantly less expensive. The rising trend for the more affordable alternative which is internet over mobile telecom data.
communication via video and audio has also lead to the popularity of using other applications for making a call. The 3G network system from the telecom companies tried to popularize video call using the telecom network but failed miserably due to the high cost compared to the third-party applications.

Further, correspondents were also asked to predict the future impact the messaging applications would have on the telecom industry, results are illustrated in fig.5. Most of them thought that this would have a significant impact on the telecom industry. From a general perspective the pace at which the VOIP and third party messaging applications are growing it will have a significant impact on revenue.

5. CONCLUSION

The paper works with qualitative data to access the impact that third party messaging applications would have on the telecom sector in Bangladesh. The fall in revenue from making calls only, could not be identified due to information privacy. But, telecom operators recently have identified this trend of using third party applications and is trying to provide fast and lower priced internet services. The impact thus on overall revenue would not be felt due to increase in subscriptions from internet, Facebook and other packages. Also, the survey concentrated on people living in the cities mostly, not the rural village people who are internet deprived and also have more limited access to smartphones. This large proportion of people still tend to rely on the telecom operators to make any sort of phone calls. From our survey data it is safe to assume that an impact will be felt on the telecom operators because of the growing popularity of third party messaging applications.

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Determinants of CEO remuneration in the banking sector of Bangladesh

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Paper# ICBM-17-255

ABSTRACT

The main purpose of this study is to investigate the factors influencing the level of CEO remuneration in the banking sector of Bangladesh. The study concentrates only on the banking sector because prior studies, such as [1], reveal that CEO’s in the financial sectors of Bangladesh are highly compensated than the other sectors. The sample that is used for this study consists of 24 banks currently listed in the Dhaka Stock Exchange (DSE), Bangladesh. All data has been collected from secondary sources, namely the published annual reports. Data that has been used for this study consists of financial information from years 2011 to 2015. The outcome of this study shows that firm size, firm performance, leverage and listing age are significant determinants of the CEO remuneration level in banking sector of Bangladesh. Whereas, growth opportunity do not influence in the decision making process.

Keywords – CEO remuneration, DSE

INTRODUCTION

Banking industry is a prominent sector of the entire economy of Bangladesh. A total of 30 commercial banks are listed in the stock exchanges of Bangladesh. These banks operate with the help of funds that they generate thorough floating shares in the stock exchanges. These funds consist of amounts, primarily of the general people invest and this means that the top management are responsible for their investments. It is therefore the responsibility of the top management to ensure that the investors and the shareholders receive their fair share of the bargain. In order to maintain parity in all levels it is necessary to ensure that there is complete non-biasness in the whole scheme of the organization and only then can the entire operation maximize welfare for every party involved in the business process.

Chief Executive Officer (CEO) is the singular organizational position in a corporation where the person in charge of the title is responsible to put the long and short-term strategies and plans of the board of directors into action. For their hard work and services, the payment that the CEO receives is known as CEO remuneration or compensation, the combination of the financial benefits that the CEO receives in the form of basic salary, bonuses, allowances and other benefits. The board of directors usually the appointed party in charge of the mammoth task of setting the total remuneration the CEO is to receive. In some cases, a special remuneration committee is formed to assist the board of directors on this task.

The CEO is generally in charge of effectively managing the overall control and operation of the firm. This can very well lead to the executives to take decisions that serve their own interest rather than ensuring maximum return to the shareholders. In such a case, it is important to design an optimum remuneration package to instill restrictions to this overall negative practice and also to provide a sort of incentive that would go on to motivate the CEO’s to take decisions that will not only ensure maximum returns but also overall welfare of the shareholders wealth. In a study, [1] notices that CEOs of the banking and non-banking financial sectors of Bangladesh are more generously paid than other sectors. Therefore, this study investigates the factors influencing on determining the CEO remuneration in the banking sector of Bangladesh.

LITERATURE REVIEW

Reference [2] did a study which was revolutionary in the world of corporate governance. They talk about various factors that influenced corporate governance and also included in-depth analysis regarding agency costs. Their study also discusses the agency costs that arise to help the shareholders keep track of how the CEO’s are being remunerated.
The next from various others was [3] have tested a number of factors to investigate as to whether they were actual influences to the CEO remuneration. The first factor they talked about was stock market returns and this in terms of accounting and finance bodes well as an indicator towards the remuneration. Stockholders are highly inclined towards stocks that provide healthy returns and the assurance of high returns would encourage them to invest in that company. So, when a CEO takes decisions that lead to higher stock returns, he can be credited with this achievement and therefore basing his payment on this aspect can be considered appropriate. The accounting return, 'net profit' a firm makes in a financial year, is what is always looked at while measuring the CEO’s remuneration. It does not necessarily mean that lower net profit is always alarming since it is possible to be making losses and still be in a healthy position. It can also be possible that a firm is doing poorly even though it is actually making profits. They also mention company size is often used to determine the payment that the CEO receives. According to [4], CEO pay is significantly influenced by company size and a larger company is very much more likely to be paying more than a smaller company. His study concludes that for a 10% increase in company size the increase in CEO pay is equivalent to about 3%. He talks about an interesting concept stating that the elasticity for CEO pay in respect to company size is about 0.3. However, it does make sense from a logical point of view in the sense that the larger the firm the more difficult it is to handle it and thus the manager taking care of a larger organization should be rewarded with a higher pay because in all fairness he/she has to put in comparatively more effort than another CEO who controls a smaller firm. In another study, [5] uses company age as a hypothesis to test the relation with CEO remuneration and the outcome is consistent with the findings of [6] and [7]. They conclude that the older the company is the more stable and established it is likely to be irrespective of the size of the firm itself.

Reference [8] has mentioned that top level managers often seem to perform better when they have a stake in the ownership and thus in situations where profit sharing schemes are involved it is seen that stock returns are higher. Reference [9] has observed that the relationship between CEO remuneration and performance is sensitive and is related to marginal return. Reference [10] discover ownership structure and board characteristics have a substantial relationship with executive compensation even after taking into account the economic standards used to set the remuneration in the first place. Reference [11] emphasize that the total remuneration paid to the executives is often valued differently by the firm and by the CEO receiving it which makes it difficult to create a proper valuation for the CEO remuneration. Reference [12] states that CEO compensation has the potential advantage to reflect firm performance, something which is not being properly utilized. Reference [13] strictly focused on the cash compensation as he believed that since it consisted of around 80% of the entire package the influence to this portion was more important and performance was a strong determinant of this remuneration. Share based remuneration is rare in Bangladesh [1], therefore, this study focuses on the determinants of the cash based remuneration of the CEOs in Bangladesh.

HYPOTHEIS DEVLOPMENT

Firm size

Reference [14] realizes that with time the relationship between firm size and CEO remuneration has persisted but has become weaker. The payment structure to shift from payment in terms of salary to more in terms of stock benefits and other bonus schemes thus the relationship which is measured solely between CEO remuneration and size which does not directly include other benefits can be concluded as to becoming less apparent. Even though in pure financial terms it would make sense if CEO remuneration did increase with size but that is often not the case as studied by [15]. As a matter of fact, [15] shows how the lowest paying firms in terms of compensation were not in the lowest form of size of the sample firms. The study describes the relationship between CEO pay and size as ‘U shaped’ meaning a nonlinear relationship was witnessed prior to study. However, the study maintains the position that the more the firm grew the larger the proportion of its compensation is based on stock incentives and this remained consistent through different industries and different sizes of firms to which eliminated any chances of the data being skewed towards any of the variables. This study assumes that,
**H1:** CEO remuneration is positively related to firm size.

**Financial performance:**

CEO remuneration is said to have a positive relationship with firm performance; this is in general a very common practice. The CEO remuneration schemes are usually designed with a fixed salary coupled with a bonus package that is usually highly tied to firm performances. References [16] and [17] have found a significant positive relationship between firm performance and CEO remuneration. On a different note, [18] suggests that aligning shareholders interest and top executives’ interests can be somewhat of a conflict because of how the aspects require trade-offs. Their study states that the financial performance does not dictate the CEO remuneration in any way. However, this study assumes that firm performance can be a significant factor for determining CEO remuneration in Bangladesh. Therefore, the hypothesis is developed as:

**H2:** CEO remuneration is positively related to firm performance.

**Leverage:**

Prior studies, for example [19], show that leverage is related to CEO remuneration. Firms that are more leveraged are thought to be under performing and this is likely to result in a decrease of value in the CEO’s remuneration. Reference [20] shows that leverage and CEO remuneration have a negative relationship where managers are less willing to operate under highly leveraged firms which is due to their risk aversion nature. This has been consistent with the study done by Mul (…….), which allows for a strong argument to be made for the inverse relationship between CEO remuneration and leverage.

**H3:** CEO remuneration is negatively related to leverage.

**Growth opportunity:**

It would make sense to reward executives with higher remuneration when firms have higher growth opportunities. In an analysis [22] describe that firms are who expect higher growth tend to utilize greater payment structures to keep hold of their CEO’s. Consistent with Smith and Watts (1992) hypothesis is:

**H4:** CEO remuneration is positively related to growth opportunity.

**Age:**

It has been witnessed that with age, experience is bestowed upon organizations and this comes in the form of going through several business ordeals and other processes. Not only this, the organization tends to slowly get established and the managers or in this case the executives. Also, more knowledge is gained throughout the tenure of the work period of the executive. However, prior studies such as [6] and [7] establish the fact that there is a negative relationship because older and more stable firms can afford to pay lower remuneration.

**H5:** CEO remuneration is negatively related to age

**METHODOLOGY**

The sample of this research consists solely on the banks listed in the Dhaka Stock Exchange (DSE), Bangladesh. A total of 24 banks were used for this study. Data has been primarily collected from the annual reports published by the sample firms. Stata was used to generate all the final outcome of this study. The objective of this study is to find the influential factors of the CEO remuneration of the banking sector in Bangladesh. Hence, the dependent variable in the study is the CEO remuneration ($CEOPay_t$), the natural logarithm of total remuneration is paid to the CEOs. The independent variables are firm size, firm performance, growth opportunities, leverage and firm age. Firm size is depicted using natural logarithm of total assets ($LnAssets$). Return on assets ($ROA_t$) is used to indicate financial performance. Growth opportunities are assessed by the book to market ratio ($Book2Mkt_t$). The proportion of total debt a firm used to fund their operations, leverage ratio ($Debt2Assets_t$), is used as another independent variable to determine how it affected CEO remuneration. Finally, age is measured by the duration a firm listed on the stock exchange ($Age_t$). The model is:

$$CEOPay_t = LnAssets_t + ROA_t + Book2Mkt_t + Debt2Assets_t + Age_t + e_t$$

**FINDINGS**
**Descriptive Statistics:**

Table 1 (see APPENDIX) shows the correlation between the dependent and independent variables. The table shows that LnAssets and Debt2Assets are significantly related to CEOPay. Among the independent variables, there is no significant relationship except Debt2Assets and LnAssets, and ROA and Age, which are 0.2409 and 0.2263 at 10% significant level.

A total of 24 banks were used for our analysis, however data for only 10 banks were used for the year 2011. In reference to this table we can see (see APPENDIX: Table 2) that in 2010 the average CEO remuneration across 10 banks was around BDT 9,231.53. It is interesting to note that the variability between the payments made by the banks is very high which is depicted by the standard deviation value of 3,030.75. Another noteworthy observation is the difference in payments to their respective CEO’s made by the banks in reference. In 2011, BDT 3,921.83 was paid as the minimum CEO remuneration and the maximum was BDT 11,400. The difference as it can be seen is massive and this suggests the parity in the payment structure differ significantly even though the industry is the same. An overall analysis shows a mean CEO remuneration of BDT 10,700 was being paid annually and as the figures show there is no significant difference between the values in each year. An overall standard deviation of 2,913.45 shows that the difference in the payments made to the CEO’s by the banks is actually quite significant and varies among all the banks in the sample used in this research. And another observation that stands out from this entire study is the range or the difference between the minimum and maximum values. The difference between the highest and lowest is very high which a worrying sign for the industry.

Table 3 (see APPENDIX) is a total representation of the descriptive analysis of the dependent and independent variables. LnAssets has a mean of over 45.83 in 106 observations with a standard deviation of 1.4, indicates not a lot of variation and there are no specific outliers either as the difference between the minimum and the maximum is very little. ROA is used to evaluate the financial performance and the table shows mixed results in terms of data where banks even have negative ROA. The gap between the minimum and the maximum is very high and this shows that performances varied significantly over the banks used in this study.

Debt2Assets ratio shows how dependent the bank is on external capital to fund their operations. A higher leverage ratio will indicate the banks having problems to meet their financial requirements and thus having to manage funds from other sources. The data does show that the leverage ratios were high, as expected, and the maximum was around 1.76.

The sampled banks uses for the study have an average age around 20.92, meaning that they have been listed for about 21 years. The variation is just below 9 with one bank being listed just about 10 years ago and the bank which is the oldest in terms of being a public limited company is roughly 35 years old.

**Principal Results:**

Results for regression analysis are shown in Table 4 (see APPENDIX). Results for three equations are shown in the table: Model 1 shows results for ordinary least square, Model 2 shows results with robust standard errors to deal with the issue of heteroscedastic, and to avoid firm fixed effect Model 3 shows results with clustered by firms.

Results shows that firm size, measured by LnAssets, play a significant role in all models in determining the CEO remuneration in Bangladesh. The outcome is consistent with [14], indicates that relative to a smaller firm a CEO of a larger firm typically engaged with more and complex activities and is highly remunerated. A number of prior literatures have found that financial performance of a firm is one of the prime dictators of CEO remuneration. Result in this study is also similar with prior studies and found a significant (at 5% significant level) positive relationship in models 2 and 3, indicating that financial performance, measured by return of assets (ROA) remains to be a driving force that determines CEO remuneration in our country. Similarly, results also show that leverage, measured by Debt2Assets ratio, is a significant factor in determining CEO remuneration in Bangladesh.

Book to market ratio that was used to show growth opportunities can be a strong indicator of determining CEO remuneration. However, the results in Table 4 show that there is no significant
statistical relationship throughout the models used for this study. Thus, it can be said that the influence of growth towards determining is considerably low or have no effect in determining CEO remuneration in Bangladesh. Firms’ listing tenure, measured by Age, is found to be a significant (at 10% significant level) factor in determining CEO remuneration in Bangladesh, except when data are clustered by firms.

CONCLUSION
A country such as Bangladesh is unique and the variables used for determining CEO remuneration (CEOPay) may not be similar to that of other countries. In brief, the results show that firm size (LnAssets), firm performance (ROA) and leverage (Debt2Assets) play a significant role in determining CEO remuneration. Listing age (Age) is also making a strong claim as to being a factor in determination of the CEO remuneration, except in Model 3 when data are clustered by firms. The other variable growth (Book2Mkt) shows no significant relationship with CEO remuneration. However, it is imperative that it is taken into consideration that the data is strictly limited and applicable to the banks that are listed in the stock exchange of Bangladesh. Results can be different for other regions of the world or for other sectors and industries of the same region.

REFERENCES

Working paper (Center for Naval Analysis), 1986.
APPENDIX

Table 1: Pearson-correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>CEOPay</th>
<th>LnAssets</th>
<th>ROA</th>
<th>Book2Mkt</th>
<th>Debt2Assets</th>
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</thead>
<tbody>
<tr>
<td>LnAssets</td>
<td>0.1988*</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ROA</td>
<td>-0.1434</td>
<td>-0.7724*</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Book2Mkt</td>
<td>-0.9769</td>
<td>0.0469</td>
<td>0.1259</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt2Assets</td>
<td>0.2111*</td>
<td>0.2409*</td>
<td>-0.5028*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.1942*</td>
<td>-0.1966*</td>
<td>0.2263*</td>
<td>-0.2290*</td>
<td>-0.0716</td>
</tr>
</tbody>
</table>

Table 2: Year-wise CEO Remuneration (BDT in thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>Obs</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Max</th>
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<tbody>
<tr>
<td>2011</td>
<td>10</td>
<td>9,321.53</td>
<td>2,416.76</td>
<td>3,921.83</td>
<td>8,638.50</td>
<td>10,200.00</td>
<td>11,100.00</td>
<td>11,400.00</td>
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<tr>
<td>2012</td>
<td>24</td>
<td>10,400.00</td>
<td>3,030.75</td>
<td>5,280.00</td>
<td>8,451.87</td>
<td>10,200.00</td>
<td>11,900.00</td>
<td>17,700.00</td>
</tr>
<tr>
<td>2013</td>
<td>24</td>
<td>11,500.00</td>
<td>2,860.99</td>
<td>7,323.55</td>
<td>9,683.50</td>
<td>10,900.00</td>
<td>12,500.00</td>
<td>19,200.00</td>
</tr>
<tr>
<td>2014</td>
<td>24</td>
<td>10,600.00</td>
<td>2,910.29</td>
<td>3,632.30</td>
<td>8,787.39</td>
<td>11,100.00</td>
<td>13,000.00</td>
<td>15,500.00</td>
</tr>
<tr>
<td>2015</td>
<td>24</td>
<td>10,900.00</td>
<td>3,008.17</td>
<td>3,926.74</td>
<td>8,701.84</td>
<td>11,100.00</td>
<td>12,800.00</td>
<td>16,700.00</td>
</tr>
<tr>
<td>Overall</td>
<td>106</td>
<td>10,700.00</td>
<td>2,913.45</td>
<td>3,632.30</td>
<td>8,900.00</td>
<td>10,800.00</td>
<td>12,200.00</td>
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Table 3: Descriptive statistics

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<tr>
<th>variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
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<tr>
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<td>106</td>
<td>45.83758</td>
<td>1.403207</td>
<td>40.9763</td>
<td>45.33018</td>
<td>45.9442</td>
<td>46.50111</td>
<td>49.15459</td>
</tr>
<tr>
<td>ROA</td>
<td>106</td>
<td>0.1971628</td>
<td>-0.07018</td>
<td>0.007622</td>
<td>0.010081</td>
<td>0.013021</td>
<td>8.622463</td>
<td></td>
</tr>
<tr>
<td>Book2Mkt</td>
<td>106</td>
<td>1.88E-10</td>
<td>4.12E-10</td>
<td>-1.15E-09</td>
<td>1.12E-10</td>
<td>1.34E-10</td>
<td>1.90E-10</td>
<td>2.08E-09</td>
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<tr>
<td>Debt2Assets</td>
<td>106</td>
<td>0.8937715</td>
<td>0.236355</td>
<td>0.064276</td>
<td>0.895611</td>
<td>0.911161</td>
<td>0.922056</td>
<td>1.766296</td>
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<tr>
<td>Age</td>
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<td>20.92453</td>
<td>8.869099</td>
<td>10</td>
<td>14</td>
<td>18</td>
<td>32</td>
<td>35</td>
</tr>
</tbody>
</table>

Table 4: Model 1 explain results for Ordinary least square model; Model 2 shows results for robust model; and Model 3 shows results with clustered by firms. Variable are defined in methodology section.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1 (OLS)</th>
<th>Model 2 (Robust)</th>
<th>Model 3 (Clustered)</th>
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<tr>
<td></td>
<td>Coef</td>
<td>SE</td>
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<tr>
<td>LnAssets</td>
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<td>0.040</td>
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</tr>
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<td>0.061</td>
<td>0.045</td>
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<tr>
<td>Book2Mkt</td>
<td>-4.23E+07</td>
<td>8.48E+07</td>
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<td>0.266</td>
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<td>-0.006</td>
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<td>Constant</td>
<td>14.056</td>
<td>1.0712</td>
<td>0.000</td>
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</table>
Academia to Workplace: Soft Skills for Employability

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Paper ID:ICBM-17-322

Abstract: 21st century workplace is changing and institutions of higher learning are responding to that change. The endeavour of this paper is to look into the practicality and pragmatism of public and private universities in Bangladesh in terms of dispensing the prerequisite soft skills required by the job market. The paper followed a qualitative paradigm, and adopted triangulation approach to validate the data. A pioneering study of this nature revealed quite interesting outcomes. The findings suggest that though most universities recognize the significance of soft skills, they have not directly incorporated such skills in their curricula. Employers have identified a number of skills that are not part of the curricular of instructions of higher learning, while potential did not have a clear idea regarding the requirements of the job market. Based in the findings this paper delineates a framework to foster soft skills for employability.

Key words: soft skills, employability, outcome-based education, continuous professional development

I. INTRODUCTION: CRITICAL IMPLICATION

The 21st century workplace is unlike that of its past in the sense that it is more global, interconnected and technologically advanced. In spite of this state-of-the-art environment, people skills, or more specifically soft-skills are indispensable for such a workplace. Soft skills [see 1, 2, 3, 4] are essential in the contemporary employment industry. Institutions of higher learning in Bangladesh, particularly private universities, are attempting to respond to the change. Private universities in Bangladesh are based on the American model, and are geared towards addressing the needs of the job market by imparting quality education [see 5]. In the new millennium, the focus of academia is to dispense outcome-based education (OBE) [see 6, 7, 8, 9] to produce employable graduates who can function in global and local contexts. Such glocal citizens are expected to contribute towards the socio-economic development of their respective countries. However, this is still a hypothesis in Bangladesh. In reality, university graduates despite having good degrees and content knowledge tend to be unemployable due to their lack of soft skills. The objectives of this paper are twofold: to explore whether soft skills are taught in Bangladeshi universities; to delineate employment oriented soft skill framework to be taught in academia.

II. LITERATURE REVIEW

Babic and Slavkovic [10] gave a formal definition of soft skills that are the cluster of personality traits, social graces, facility with language, personal habits, friendliness, and optimism that mark people to varying degrees. They have examined the emphasis placed by employers on hard (technical) and soft skills and the type of soft skills demanded. It uses statistical tools to determine the most important variables for soft skills. The study gave an insight on how to examine data collected from survey and what should be the questions to be probed.

In today’s competitive marketplace, soft skills are “must have” skills and increasingly demanded by the business leaders [11]. One of the reasons is, an organization’s image is reflected through the image presented by employees in that company [12]. According to Bancino and Zevalkink [11], three driving forces behind business leaders’ increasing demand for a variety of skill set comprise, need for improving the bottom line, increasing competition, and globalization. Moreover, job performance and career success of an individual largely depends on the effective practice of soft skills [13]. In recent years, Truong and Laura [14] researched an impressive amount of literature, relevant to business education, which was accumulated from several diverse areas of study and showed that, without the acquisition of “soft skills”, the level of potential success in the context of international trade, business transactions, and production cannot be maximized. Robles [15] suggests that candidates who add value with their soft skills are highly in demand by corporate recruiters. In other words, soft skills can be viewed as an investment and is very critical in current workplaces [15]. A study among top executives show that 100% of the respondents indicated integrity and communication, 84.2% to courtesy, 71.9% referred to interpersonal skills, 61.4% reported interpersonal skills as “must have” skills and increasingly demanded by the organization’s image is reflected through the image presented by employees in that company [16]. According to Bancino and Zevalkink [11], three driving forces behind business leaders’ increasing demand for a variety of skill set comprise, need for improving the bottom line, increasing competition, and globalization. Moreover, job performance and career success of an individual largely depends on the effective practice of soft skills [13]. In recent years, Truong and Laura [14] researched an impressive amount of literature, relevant to business education, which was accumulated from several diverse areas of study and showed that, without the acquisition of “soft skills”, the level of potential success in the context of international trade, business transactions, and production cannot be maximized. Robles [15] suggests that candidates who add value with their soft skills are highly in demand by corporate recruiters. In other words, soft skills can be viewed as an investment and is very critical in current workplaces [15]. A study among top executives show that 100% of the respondents indicated integrity and communication, 84.2% to courtesy, 71.9% referred to interpersonal skills, 61.4% reported interpersonal skills as “must have” skills and increasingly demanded by the organization’s image is reflected through the image presented by employees in that company [16]. According to Bancino and Zevalkink [11], three driving forces behind business leaders’ increasing demand for a variety of skill set comprise, need for improving the bottom line, increasing competition, and globalization. Moreover, job performance and career success of an individual largely depends on the effective practice of soft skills [13]. In recent years, Truong and Laura [14] researched an impressive amount of literature, relevant to business education, which was accumulated from several diverse areas of study and showed that, without the acquisition of “soft skills”, the level of potential success in the context of international trade, business transactions, and production cannot be maximized. Robles [15] suggests that candidates who add value with their soft skills are highly in demand by corporate recruiters. In other words, soft skills can be viewed as an investment and is very critical in current workplaces [15]. A study among top executives show that 100% of the respondents indicated integrity and communication, 84.2% to courtesy, 71.9% referred to interpersonal skills, 61.4% reported interpersonal skills as “must have” skills and increasingly demanded by the organization’s image is reflected through the image presented by employees in that company [16].
competitive business advantage. According to Bancine and Zevalkink [11], when nontechnical skills (soft skills) are developed to complement technical skills, collaboration, synergy, and personal productivity, are increased, which eventually turn into improved business success rates, sustainable competitive advantage and increased profitability. So, it can be said that, soft-skills attributes (when complimented with technical skills) help business to achieve sustainable competitive advantage, which ensures the sustainability of business, which in turn resulted in sustainable employment.

According to Ahmed [20], the issue is that amongst those who are graduate, most are highly unemployed in Bangladesh for example, unemployment is highest amongst engineering graduates and India’s 2013 National Employability Report found that only 21% of its engineering graduates actually employable [21]. The findings of British Council’s [21] report also identified soft skills, such as problem solving and proactive thinking as major gaps amongst graduates, though noted, “a new graduate [in the industry] cannot be expected to predict problems when they have never done something before, and they need mentoring”. The report further suggests that consultation with industry and education leaders would be a first step towards developing a new, holistic curriculum to meet employer demand [21]. Seeking partnerships with MNCs for financing, placement and mentoring opportunities would also hone soft and technical skills [21].

University Education System in Bangladesh

Higher education providers in Bangladesh can be classified broadly in two categories—public university and private university. Public universities can again be divided into a number of categories: general university (e.g. Dhaka, Chittagong, Rajshahi), technical university (e.g. Bangladesh University of Engineering and Technology, Rajshahi University of Engineering and Technology), medical university (e.g. Bangabandhu Sheikh Mujib Medical University), agricultural university (e.g. Bangladesh Agricultural University), university which operates through more than 1600 colleges (National University of Bangladesh), distant learning university (e.g. Open University of Bangladesh). Apart from these universities, there are universities that provide a combination of liberal arts, as well as technical and medical education, like Shahjalal University of Science and Technology and Bangladesh University of Professionals. The medium of instruction of 37 public institutions of higher learning to a large extent is Bangla/Bengali, but usually postgraduate education is conducted in English. The 95 private universities provide general, technical and medical higher education. The medium of instruction of all of these institutions is English. There is a great difference between the tuition fees of public and private universities; public universities to a greater extent are so much subsidized that students pay almost nothing, whereas in private universities a hefty amount is charged by the private universities as they do not get any financial assistant from the government. Despite the disparity, private universities tend to offer very market oriented programs. In other words, they offer programs that have a demand in the employment industry. Even though the general perception of uninformed people is that public universities degrees have more value, findings from Mazumder’s [5] study suggest that the private university graduates have a higher level of satisfaction than public university graduates:

In contrast to past results, results of the current study showed that the students in public universities of Bangladesh had lowest level of satisfaction and the private universities of Bangladesh had highest satisfaction ... private universities have the resources and services that meets the needs of their students and that they have a higher satisfaction levels than public universities. The higher satisfaction levels may justify higher costs, and public universities may also be able to improve services, based on private university services [5].

Since private universities are emphasizing outcome-based education that caters to the needs of the employment industry, they can become more focused and develop a more pragmatic oriented bridge between academia and industry, by focusing on the necessary soft-skills that are required by the global job market.

III. METHODOLOGY

This study followed a qualitative paradigm, and employed triangulation approach to gather data from institutions of higher learning, employment industry and potential employees. Semi-structured interviews were conducted with academic/admin administrators of 25 (7 public and 18 private) universities, and employers of 25 corporate organizations. Focus group interviews were conducted with 200 potential job applicants who graduated from public and private universities. The data, comprising academic/non-academic administrators from public and private universities, personnel from various corporate organizations, and potential job applicants, was gathered from Dhaka, Rajshahi, Chittagong, Sylhet, and Comilla, with Dhaka predominating.

Due to the nature of the study, not everyone who was contacted wanted to be interviewed, as they did not want to talk about the lacking or drawbacks/shortcomings of their institutions or organizations; hence, convenient sampling was employed [see 22, 23, 24] and finally 200 participants were interviewed. Creswell [23] defines convenience sampling as a “qualitative sampling procedure in which the researcher selects participants because they are willing and available to be studied”. In the study, data was gathered from respondents who were forthcoming, made themselves available and willing to be interviewed. All the participants had the option of
declining; and in fact, some did choose not to be interviewed.

IV. FINDINGS

The findings suggest that though most universities recognize the significance of soft skills, they have not directly incorporated such skills in their curricula. Employers identified a number of skills that are not part of the curricular of instructions of higher learning. Based on the findings, a model has been delineated to foster soft-skills for employability. The triangulation approach not only assisted in validating the data that was gathered, but also justified the reliability of the findings to a greater extent.

First Objective: Soft Skills in Bangladesh Universities

The first objective of this paper was to explore whether soft skills are taught in Bangladeshi universities. This pioneering study revealed that the disparity between private and public universities in Bangladesh seems to be getting wider. The 18 private universities from where data was gathered focus on industry driven programs. In other words, their outcome-based education is tailored towards the needs of the employment sector. These universities have introduced elements of soft-skills in various courses. Two of these 18 private institutions of higher learning had incorporated compulsory course in direct response to the soft-skills needed for the job market, namely: Professional Service Development Course and Booster English Course. Professional Service Development Course was a mandatory non-credit requirement for graduating with an undergraduate degree, which was made optional in 2015. Booster English Course was a six-week experimental course introduced in 2009, which lasted for three semesters before being discontinued. It was made compulsory during the last semester of a program. However, after one semester, it became optional, and students soon lost interest in it. In spite of the setbacks of these two courses, private universities in general have various course in every department that somewhat focus on a number of soft-skills as required by the job market. Furthermore, it should be mentioned that based on the data, which was gathered, all private universities have units, cells or bodies that function to maintain liaison with the employment industry for fulltime and part-time job-placements of their graduates and/or potential graduates. Such units, cells or bodies have various names like Career Counselling Centre or Student Welfare Centre. They provide various hands-on training, workshop and seminars to potential graduates and job applicants by inviting professional from the corporate sectors.

Job providers or employers, from 25 organizations from where data was gathered, mentioned a number of soft-skills that they require in their respective professions. These skills are as follows: English communication skills (verbal & written), interpersonal skills, ability to work under pressure, team player spirit, analytical ability, self-motivation capability, deadline/target oriented initiatives, leadership skills, problem solving ability, proactive personality, assertiveness, punctuality, people skills, outgoing attitude and aptitude, assertive and expressive qualities, as well as moral and ethical values founded on reliability and accountability. The employers explained that by verbal communication skills they mean ability of use good spoken English and Bangla, with accuracy, fluency and acceptable pronunciation. Some of them mentioned that appropriate body language or paralanguage is also important in not only reinforcing the verbal language but also facilitating interpersonal skills. Paralanguage, as Haque [1] explains, is relevant gestures and postures as well as tone is equally important in order to express oneself and convey the professional emotions. An interesting aspect of the findings is that the employers identified a number of qualities that are explicitly and/or implicitly connected to soft-skills, which are not directly taught in institutions of higher learning in specific courses. Such qualities included the significance of Continuous Professional Development (CPD), the concept of embracing lifelong learning, and appreciating the simple joy of climbing the corporate ladders by starting at the bottom, working hard and then reaping the benefits of one’s labour. This somewhat revealed that a myth verses reality scenario existed between academia and job industry. The employers expressed their disappointment with the many graduates wanted to reap the benefits of success without working hard as well as acquiring and/or mastering the prerequisite skills. Graduates of today feel that by working hard in the university, they will simply be handed things on a silver palate. The determination to work diligently, under pressure, along with other as a team player as well as rise up to the occasion when confronted with a challenge by overcoming the obstacle are attributes which employers sought after, but found in very few job applicants. Due to the lack of CPD and the impatience of learning on the job by embracing lifelong learning displays disrespect and disdain for more accomplished employees who are the lifeblood of an organization. Consequently, as explained by some conscientious and concerned employers, today’s job applicants or entry level employees have low moral and ethical values and therefore their reliability and accountability may be questioned when it comes to organizational/institutional loyalty.

Responses from the 200 potential jobseekers further exposed the myth verses reality job-sector scenario. The findings suggest that most of the potential jobseekers were unaware of the professional skills required in the employment industry. They believe in the myth that excellent CGPA, content knowledge of their respective disciplines acquired by memorizing books, good references from their referees and high profile company-insider contacts are more important than soft-skills. The concept of inside contact in the forms of so-called chacha (paternal uncle) and mama (maternal uncle) is still somewhat prevalent among job applicants. Hence, job applicants seekers feel that they do not need soft-skills to
get a job. Contrary to this belief, employers mentioned that they still sought the best candidates/job applicants, that is, those aspiring applicants who have the necessary soft-skills to perform their responsibilities. The finds also suggested that some candidates do recognize the significance of soft skills. These candidates took their own initiatives to learn soft skills by going to various professional coaching centres. Big coaching centres are offering crash courses on communication aspect of soft skills, such as appropriate ways of facing job interviews, improving spoken English and making good presentations. Private university job applicant mentioned that they were taught specific communication skills in their spoken English class, usually in first or second semester. However, they also mentioned that by the time they graduated, after completing 12 semesters, they forgot most of the communication skills.

Second Objective: The Way Forward—Teaching Employment-Oriented Soft Skills in Academia

The second objective of this paper was to provide an outline for a job/market oriented soft skill framework that can be taught in academia. Some of the private universities have already taken the first step towards designing curricula that incorporates elements of soft skills for employability. The responses of the personnel from the job industry, university administrators as well as the challenges that potential job applicants encounter have helped to shape the module that could act as a framework to foster expertise to prosper in the job industry. To ensure that graduates are ready for the job market, a mandatory course based on employment-oriented soft skill framework needs to be taught before graduation. The name of this course may be determined based of the approach that is adopted. If an industry or market based orientation is considered and the objective is to groom graduating students for the job market, a suitable title would be Soft Skills for Employment Purposes. On the other hand, if a holistic approach is taken to inculcate the concept of professionalism and professional etiquettes for corporate office and academia, an appropriate title may be Soft Skills for Professionalism. Such a course has to be made mandatory for fulfilling the requirements of any undergraduate student. It may be a credit or non-credit course, depending on the concerned institutions. This course is pragmatic, hands-on and practical. It is to be offered in the 11th or 12th semester and act as a grooming mechanism in order to pave the way for the would-be graduates to enter the job market/employment industry where professional etiquettes prevail.

Soft Skills for Employment Purposes or Soft Skills for Professionalism: This employment-oriented soft skill framework is proposed based on the research findings of this paper. When designing a course like this it is very important to conduct a needs analysis, without which it will not be pragmatic and suit the purposes of the target participants. In other words, for this course to be effective it must be fine-tuned, based on the results of needs analysis, for each group of participants. It is imperative to comprehend that if one-size-fits-all approach is adopted to teach this course, without considering needs analysis, it will not be effective and its main objective will be unachievable. A course of this nature would comprise the following five mandatory modules:

- Communication Skills
- Professional Etiquettes
- Continuous Professional Development (CPD)
- Lifelong Learning
- Ethical/Moral Social Responsibilities

Communication Skills will include reading, writing, listening and speaking components for professional needs, and will employ contemporary authentic materials and not textbooks prescribed for academia. Textbooks employed for academic purposes often contain outdated information and do not always reflect the instant need of the market and/or professional world. Presentation and negotiation skills, interview preparation, pronunciation accuracy will also be incorporated in Communication Skills module. Other skills may be included in this module depending on the requirements to the target participants. Professional Etiquettes can comprise personal hygiene, attire for appropriate occasions, punctuality, professional curtsy, mannerisms, and so forth. Continuous Professional Development (CPD) and Lifelong Learning go hand in hand, and are areas that have been under research and underutilized in the literature and genre of soft skills. CPD will include all the ways a professional can further develop ones on skills by motivating oneself, and thus in turn motivate other to do the same without thinking of incentives and rewards. Improving and developing oneself in order to become an asset to an organization is a reward in itself. In order to engage in CPD, one has to embrace the concept of lifelong learning, which means that you will be in a state of learning or learning mode 24/7. This state of learning does not mean that you will become a bookworm or constantly bury your nose in books. What it signifies is that you have to keep an open mind and be willing to learn from any situation, be it good or bad or horrid. Strategies for engaging in CPD and Lifelong Learning will be taught and practiced in these two modules. Without integrity, humility, honour and respect for each another one cannot become a true professional. These are key elements that enable an individual to practice Ethical/Moral Social Responsibilities. In the professional world, ethical and moral values can be taught and learnt. However, it is the practice of such values that distinguishes a true from a so-called professional.

In addition to the above five mandatory modules, other sub-skills may be incorporated depending on which profession that students/learners are inclined to. Keeping this in mind, the following sub-skills may be adopted and/or adapted:

- Corporate, administrative and academic decorum
- Consumer/client/target audience centricity
- Instrumental/integrative motivational development
• Interview and/or negotiation skills
• Gig economy/freelancing skills

V. DISCUSSION & CONCLUSION:
THE GLASS IS HALF-FULL

Bangladesh’s Business Process Outsourcing (BPO) companies are in desperate need of engineers and software developers to service foreign clients but are increasingly frustrated by graduates who are not workplace ready [25]. Poor problem solving, lateral thinking, communication and decision making skills, and an inability to work in a team are listed amongst the most significant failings. The graduates have the reason to worry about the poor state of the country’s education sector. After all, none of Bangladesh’s newly set up public universities and private universities appear in any of the existing global rankings of universities around the world [5]. Instead, most of these universities are frequently in the news for various irregularities, student violence and governance related problems [5]. Given the growing university going youth population, it is required to critically assess employment prospect of youths and university graduates and welcome comparative analysis on the actual performance of Bangladeshi universities.

While public universities seem to be offering free, which has been sugarcoated as affordable, education, they hardly focus on the practical and pragmatic needs of the employment industry. Broadly speaking, this is what the finding from the seven public institutions of higher learning revealed, with the exception of a few departments and/or institutes within those universities. Even though there is no major study correlating the cheap tuition fee of public universities (e.g. still TK10 for a particular university) with the quality of education that is being dispensed by public institutions of higher learning, this is what partial findings of this study suggest. It should be mentioned that the evening and/or executive (weekend) programs offered by certain institutes or departments of these same public universities, which charge quite hefty sums of money, also seem to dispense higher quality of education that are job oriented.

The findings from the employers’ perspective seem to reflect what reference Haque [1] has mentioned, “It is due to the lack of soft-skills many graduates are unable to secure their desired jobs”. However, there is still a hope because academia, particularly private universities, have recognized the skills set required by the market and have already started to explore how to incorporate such necessities in their curricula. Institutions of higher learning in Bangladesh are slowly but surely gearing towards creating global citizens who are rooted in local work culture but have the potential to function at the global stage. This is materializing due to the inculcation of soft-skills in the graduates to meet the 21st century challenges. This realization of bridging the gap between academia and industry seems to be a phenomenon that is being propagated through outcome-based education for employability.

REFERENCES


SCOPE OF MOBILE FINANCIAL SERVICES IN THE LOWER WORKING CLASSES OF THE DEVELOPING NATIONS

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Abstract - Global community has witnessed advancements in internet technology by abridgeing economic disparity, creating a means of livelihood and contributing to socioeconomic development. Leading the technological revolution is the mobile financial services (MFS) sector. The rapid pace of adoption of mobile phones in Asia and Europe has created an emerging market for new and innovative mobile services. Recent trends indicate growing support structure for mobile financial services in countries like Bangladesh, especially Mobile based micro banking system has revolutionized the financial services landscape by bringing low cost network-driven feature like fund transfer, bill pay, item purchases and airtime recharge. There is a huge scope of introducing similar type of MFS in many developing countries, where the people of lower working class are still uncomfortable with the traditional banking system and thus not able to contribute in the main stream economy directly.

Keywords - Mobile financial services, Mobile based micro banking system, Lower working class.

I. TERMINOLOGIES

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>BB</td>
<td>Bangladesh Bank</td>
</tr>
<tr>
<td>BTRC</td>
<td>Bangladesh Telecoms Regulatory Commission</td>
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<tr>
<td>BDBL</td>
<td>Bangladesh Development Bank Limited</td>
</tr>
<tr>
<td>CICO</td>
<td>Cash-In/Cash-Out</td>
</tr>
<tr>
<td>DBBL</td>
<td>Dutch Bangla Bank Limited</td>
</tr>
<tr>
<td>GSMA</td>
<td>GSM Association</td>
</tr>
<tr>
<td>G2P</td>
<td>Government to People</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>KYC</td>
<td>Know Your Customer</td>
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<tr>
<td>MFS</td>
<td>Mobile Financial Services</td>
</tr>
<tr>
<td>MFI</td>
<td>Microfinance Institutions</td>
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<tr>
<td>MNOs</td>
<td>Mobile Network Operators</td>
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<tr>
<td>OTC</td>
<td>Over-The Counter</td>
</tr>
<tr>
<td>USSD</td>
<td>Unstructured Supplementary Service Data</td>
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II. INTRODUCTION

The term “Mobile Financial Services” encompasses a broad range of financial activities used by consumers to meet their day-to-day needs using mobile phones. Mobile financial services are distinctly categorized by Boyd & Jacob (2007) into mobile banking and mobile money transfers or payments. Mobile banking is a channel where a consumer interacts with the bank where they have an account using a mobile device (Barnes & Corbitt, 2003). Mobile money transfers or payments are different in application because the sender and receiver of funds interact through an intermediary or even without an intermediary. Mobile banking and mobile payments have witnessed overlapping sets of products as some mobile banking platforms allow money transfer which is considered as a form of mobile payment. Similarly, some of the products of mobile payments are closely linked to bank accounts such that they are assumed as mobile banking functions.

III. SCOPE OF MOBILE FINANCIAL SERVICES ADOPTION

Over the last decade, large evidence has collected on mobile financial services. Majority of the authors apply research models and framework to Information Systems (IS) literature with the aim of examining the determinants to technology acceptance and its utilization (Aboelmaged & Gebba, 2013). Technology Acceptance Model (TAM) seems as the favorable choice because it favors user’s adoption of a new technology based on its intention to use the system that are driven by user’s beliefs about the system (Cheung & Vogel, 2013). The two common beliefs identified are perceived usefulness and perceived ease of use which are instrumental in determining their intentions. TAM has been used in researching consumer acceptance of mobile banking applications (Chung & Kwong, 2009; Yu & Fang, 2009). The diffusion innovation theory has also been applied in determining the characteristics of adopting mobile financial services (Brown, Cajee, Davies, & Stroebel, 2003; Mallat, 2006). The critical factors identified by Das (2011) can help in establishing a base for developing mobile financial services in any underdeveloped economy. The demand for banking and financial services has been growing at a staggering rate since the internet revolution. Banking
Institutions must realize the need for affordable transactions as well as the hardships faced by consumers using existing channels of banking. Usefulness of mobile financial services is emerging as people are benefitting from reduced cost, convenience and safety of financial activities. Developing nations must build trust in their agent networks, use peer feedback for merchants and skill people appropriately for maximizing potential for business development. Businesses will have to overcome technology readiness factors such as awareness of ATM’s, adoption and awareness of mobile phones as well as key demographics before entering markets. Cost of handsets, transaction charges, use of local language and perceived self-efficacy must be built into the system.

The basic requirements for expanding mobile money accounts is dependent on the availability of mobile phones, network connectivity, a data platform for transmitting all mobile money transactions (Barnes & Corbitt, 2003). The increase in adoption of ICT technology on a global level has greatly facilitated availability of cheap handheld devices combined with better service in remote parts of the globe (Donner & Tellez, 2008). Due to increasing competition among network service providers in Bangladesh, the cost of voice and data related services have dropped significantly (Abdulla-Al-Mamun, 2015). For making payments through mobile, there are many options. However, USSD is a preferred choice as a technical platform. Accurate pricing of services and unrestricted access to USSD are crucial regulatory features to enable positive competition in the mobile financial services sector.

Cash-in and Cash-Out Service: bKash has been recognized for its fast and convenient money transfer (Rahman et al., 2012). Before making any transactions, a user needs to have a sufficient balance in their e-wallet. Customers can visit any bKash agent and deposit the money with them to convert their cash in mobile money (Hossain, 2014). The funds can be easily withdrawn from any bKash agent or BRAC bank ATM’s using a unique key generated every time a user wants to perform cashless cash withdrawal. The agents and users receive confirmation messages at each step to ensure reliability of the system and smooth functioning. Users can also pay any merchants through e-wallet provided they know the wallet number (Uddin, 2014). This includes small grocers to big businesses registered with bKash. The company also provides simple features such as checking account balance, mini statements, change personal identification number (PIN) from bKash menu.

The registered accounts for mobile financial services have expanded at a rate never known in business history. bKash grew to 2 million accounts in 2012 and by 2013 there were 11 million registered accounts (BRAC Bank, 2015). An interesting fact about bKash is that it’s not even a mobile network operator (MNO) yet its business model has helped it to scale rapidly in a short span of time. Bangladesh Bank has offered more than 20 licenses to other businesses for offering mobile financial services in the country but over 81% of mobile financial transactions are being conducted by bKash and 18% by DBBL (Chowdhury, 2016). Financial inclusion received a big boost in Bangladesh since mid-2014 as three critical indicators of MFS growth i.e., accounts, agents and number of transactions improved.

In a four year period (2011 – 15), Bangladesh has experienced phenomenal growth in expanding financial inclusion and bringing people under the MFS banner. The introduction of new guidelines by Bangladesh Bank and innovative market oriented solutions by BRAC bank and DBBL has contributed to this growth (BRACBank, 2013).

Yet, there is huge untapped market for mobile financial services. In Bangladesh, half of the population has a mobile phone but still cannot benefit from MFS – a huge growth potential. Over the counter transactions still dominate a chunk of bKash portfolio which needs to be transitioned into registered mobile money account transfers (Chen & Rasmussen, 2014). MFS product penetration continues to evolve as transactions are concentrated towards CICO and P2P transfers. A range of potential services such as mobile money making its way from regulated institutions to unregulated markets, government to people payments and service payment transactions are unexplored. Account activity levels can be improved as 60% of all bKash accounts have healthy financial transactional activities.

Here, if we compare the bKash with DBBL mobile banking service we can see that, DBBL mobile banking services flourished in the market for a few months but the old banking company did not reach to rural customers initially (DBBL, 2015). As other competitors entered the market with unique business plan and promotional strategy to earn market share, bKash was among the first new entrants to give huge competition to Dutch-Bangla Bank. In a span of three years, bKash emerged as the market leader, experiencing phenomenal growth and overpowering all its competitors. While DBBL pushed for the growth of ATM’s and fast track services to get benefit from its current infrastructure, bKash focused on expanding its agent network which gave bKash an advantage in market share in three years. bKash operates as a completely separate entity from BRAC bank whereas DBBL’s mobile banking facility was just a separate wing of the banking institution. Dutch-Bangla bank has witnessed failures in trying to improve its mobile financial service portfolio whereas bKash has continued to build a better name and agent network across the country. The current market space provides bKash to achieve sustainable competitive advantage in local and global markets. The organization can hope for a bright future provided its well-trained staff delivers. To meet growing consumer demands, bKash will need to constantly upgrade its technology, launch ATM booths in rural areas and bring more people under its cover to
provide mobile financial services. A diversified portfolio can help bKash penetrate the market and use its unconventional banking methods to turn higher profits. Better services and opportunities being offered by private companies are turning away customers from traditional banking organizations.

Financial inclusion is believed to lower poverty and bring inclusive growth (World Bank, 2014). Greater access to financial services may promote growth and lower income quality (Demirguc-Kunt & Levine, 2009). A number of governments in developing economies are beginning to understand the importance of financial inclusion and thus starting to take measures to improve access and use of financial services. According to Global Findex, financial inclusion is seen as having an account storing funds, sending or receiving payments (Demirguc-Kunt & Levine, 2009). On a global scale, the percentage of adults having financial inclusion rose from 51% to 62% from 2011-14 (Demirguc-Kunt et al., 2015).

<table>
<thead>
<tr>
<th>Table I</th>
<th>Bank Account Holders by Country (World Bank, 2016)</th>
</tr>
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<tbody>
<tr>
<td>Countries/Regions</td>
<td>Number of Bank Account Holders (15 years and above) (% of total population)</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>31%</td>
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<tr>
<td>India</td>
<td>53%</td>
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<tr>
<td>Nepal</td>
<td>34%</td>
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<tr>
<td>Pakistan</td>
<td>13%</td>
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<tr>
<td>Sri Lanka</td>
<td>83%</td>
</tr>
<tr>
<td>Thailand</td>
<td>78%</td>
</tr>
<tr>
<td>Philippines</td>
<td>31%</td>
</tr>
</tbody>
</table>

Here, Table I is showing the number of bank account holders in each country. It is clearly visible from the statistics by the World Bank (2016) that among all countries, Sri Lanka has the largest segment of account holders in banking institutions. In Table I it is also shown that 31% people of Philippines have bank account, which is similar to Bangladesh. But, in the Figure 1 it is shown that, considering the number of mobile account holders, Philippines lead the segment with 113.8% of mobile phones issues per 100 citizens. The below statistics is an indicator of the huge potential in these developing nations to introduce mobile financial services targeting the lower class people.

While MFS is viewed at an evolutionary stage, few people in developing countries use an account from a financial institution. Similarly, the percentages of people having bank account and a separate e-wallet is relatively low. Developing nations are reported to have higher percentages of mobile money accounts than developed nations.

The key findings also indicate heavy regulations by central governments and insistence by banks to play a central role in mobile financial services along with onerous KYC documentation and agent restrictions are restrictive in growing mobile financial services in a country. Mobile financial services are likely to be successful in countries that are facing extreme poverty and lack basic financial infrastructure. Platforms for sending and receiving finds must increase at the same pace as cash-in and cash-out. The key regulatory features for expansion of mobile financial services requires limited restrictions on ownership of services. In many countries, network-operator led mobile financial services proved to facilitate its growth. The complexity of KYC documentations and restrictions on who could be an agent was an important factor as supported earlier in Technology Acceptance Model – perceived usefulness and perceived ease of use.

IV. CONCLUSION

Before entering into a second phase of MFS expansion in other developing countries after the success of bKash, DBBL’s mobile banking in Bangladesh, it is important to review international experience – countries where MFS was introduced, the factors that were present at the time MFS was introduced, how MFS performed and what were the causes for its success and failures. According to the research by Gates Foundation published by Evans & Pirchio (2015), mobile financial services and similar programs have been introduced in over 22 developing countries. The results published by the authors indicate...
eight countries out of twenty two countries experienced significant success, three countries made modest progress, in eight countries the programs failed to take-off and in the remaining three countries it was too early to indicate whether MFS was favorable or unfavorable.

REFERENCES


THE COMMUNICATION PROCESS TO EMPLOYEES: A STUDY ON POST-MERGER SITUATION

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Abstract - This qualitative research study seeks to explore the underlying phenomena of communication process and strategies in post-merger situation. Merger has been an emerging phenomenon in US commerce in the light of recent economic situation. Employees go through several anxiety and uncertainty after announcement of merger which affect the work productivity and cause dysfunctional outcome in the organization. On the other hand merger leads a firm to layoff several hundreds to thousands of employees. In both cases effective education and communication is necessary to handle these issues. In this paper we propose an exploratory study by conducting in-depth interview to understand the effective communication variables following a merger.

Keywords – merger and acquisition, communication, uncertainty, layoff, employee assistance program.

I. INTRODUCTION

The recent trend of merger and acquisition in American commerce has identified an important part of such activity. The reaction of employees and the post effect of merger upon them has been a subject of study. Various outcomes from previous studies had been exposed on effect of merger on employees (e.g. Rentch &Scheineder, 1989; Buono & Bowditch, 1989; Bastien, 1987; Marks & Mirvis, 1983). Specifically, this subject matter has been found in many research studies due to the uncertainty that affect both organization and personnel in the long run. That uncertainty creates stress for employees but cannot be easily avoided since many of the changes associate with mergers and acquisitions are evolutionary, and final outcomes are often not known during negotiations (Jennison & Stikin, 1986a,b.; Schweiger & Weber, 1989;). It is assumed that after a successful merger, employees of both companies feel anxious, uncertain, and worried about their future. The impact of new anxiety causes low morale, sagging productivity, and a bad start to what was conceived as a profitable union (Berk, 1996). Employees past merger are fearful and try to protect themselves. Most often the fear is surrounded to changing rules that employees are unknown. Even when top managers do know what changes will occur, they are often unable or unwilling to discuss the changes with employees for a number of reasons (Mirvis & Marks, 1986). Hill et al. (2005) identifies six theories (anxiety theory, social identity theory, acculturation theory, role conflict theory, job characteristics theory, and organizational justice theory) to explain problems in managing the merger and acquisition (M&A) organizational change process. The author explained how these theories both implicitly and explicitly formed the basis for M&A. Also the author developed an integrative framework that depicts different problems that emerge in M&A situation and their psychological and behavioral effects on employees.

Another personnel problem that stems from a post-merger is the employee termination and position elimination. A part of employees are likely to lose jobs due to company restructuring. Not only that, but losing job have also caused a shift to the occupational categories of employees who are let go. Historically, workers on routine production jobs were the employees targeted for layoffs, while managers and staffs were typically spared (Confield. 1983). The mergers have caused a recent phenomenon as well- laid off Chief Executive Officer. The CEOs lost jobs as a result of restructuring of company strategy and hierarchy often find difficulty in re-employment. The purpose of the study is to study and explore the communication process following a merger to address anxiety and uncertainty that grows within and create employees’ negative psychological state. Also the paper would identify the post-merger personnel problem from lay-off and how effective communication can reduce such problem.

II. METHODOLOGY

Selection of subjects

Seeking information-rich participants was the primary goal in subject selection, and subjects were purposefully selected to represent a variety of interest (Patton, 2003). For the proposed research 100 employees would be selected from two companies recently completed merging.
Both of the company would represent two different industries. The participants would include both blue-collar and white-collar employees. Also participants would include both existing and laid-off employees with 50 laid-off members and 50 existing members.

Instrument Design

The researcher would develop an in-depth, open ended interview guide. The question would ask a pre-determined sequence of questions with carefully selected wording and phrases. The interview site would be at the participants working premises. The questions would be structured and would encourage spontaneous participation to ensure the richness of data.

Data Analysis, Validity, Reliability

Data analysis is an ongoing process. In the proposed research, data would be analyzed concurrently with gathering data, making interpretations, and writing reports. The data analysis would be conducted by following Creswell (2009)- collecting raw data, organizing and preparing data for analysis, reading through all data, coding the data, identify themes and descriptions, interpreting emerging themes/descriptions, and interpreting the meanings of themes/descriptions. The data validity would be ensured by gathering prolong experience in the related field by the researcher, triangulating the finding of the data with other related research such as Schweiger et al. (1991) and Leana et al. (1992), Labor report, Merger and Acquisition report. Also peer debriefing by four distinct professor of Harrison College of Business, Southeast Missouri State University would be conducted to validate the data. The reliability of data would be ensured by conducting follow up interview if necessary, each data would be coded with careful consideration and would be cross checked with other researchers, each emerging theme would be recorded after consultation among the researcher(s).

Since the research would be conducted on employees from two different settings, the interview session would be long and the interview site would be scattered; therefore unspecified amount of time is necessary to identify themes. However, a pilot study would be necessary before conducting the study in large scale in order to verify the research procedure. In the research particularity of each theme and description should be emphasized rather than the generalisability of data. Further selection of new viewpoint is necessary to understand the subject matter in different light.

Merger is an emerging and frequently occurring event in Global business. It has become the interest for many large companies for future survival. Last year, world economy has experienced many events such as European debt crisis, US economic swing and imminent fiscal cliff, rise of Chinese currency, all are indicator of possible increase in Mergers and acquisitions. In a survey conducted by KPMG (2013) over 300 M&A professionals exert that about 35% of them are “more optimistic” that the M&A market increase and 76% of the respondents believe that their firm would acquire at least one company in 2013. One reason for increasing deal making environment is told as the increase amount of cash hold by the companies and the flexible US debt market. Among the major indicators of prime motives of M&A, 20% stated the desire of geographic reach as prime motivator, 19% suggests the profitable operation, and 17% referred entering in to new business are among the important motivators that drive companies into M&A. It is clear from the statistics that for M&A deals are mainly driven by economic, financial, and strategic motives. Also most of the previous research focuses on those factors as behind the success of M&A deal. However, it is undeniable now that the response of the individuals’ affected regarding merger deals also one factor for successful integration. Negative attitude by the stakeholders such as stress and uncertainty, absenteeism, attrition of work environment, and even sabotage may influence the performance of work force that lead to “bottom line” results. The understanding of human nature and social behavior is the study of sociophologist. However, the focus of this study is to understand the nature of employees after a merger announcement is made and the communication process that might ease or even eradicate employees’ negative state of mind. Through asking several questions to the respondents, the research tries to explore the best solution for the three given question. For the discussion purpose of the study, the analysis of interview is divided into three parts.

- Organizational trust is correlated to managerial communication during Merger.
- Increased managerial communication reduce work related anxiety.
- High-scale Organizational support is required for layoff personnel.

III. CORRELATION OF ORGANIZATIONAL TRUST AND COMMUNICATION

Several researches have conducted on trust and communication. In an early study (Mellinger 1955) explored the effect of distrust on communication. It showed if the sender does not trust the recipient, he or she will like start aggressive communication. However, to more related to our research is the study by (Vuuren et.al, 2007) revealed that trust could influence employee’s satisfaction on supervisor’s communication. In another study (Chory and Hubbell, 2008) revealed that employee’s less likely show negative and antisocial organizational behavior if they have trust upon their managers and feel that their performance appraisal was a fair assessment. During the interview session it is revealed that all the respondents have some level of trust on their...
organizations and supervisors. It is also revealed that timely and accurate communication during and after merger increases their organizational commitment. Varona (1996) discovered significant positive relationship existed between communication and commitment. For the purpose of this study the main discussion is heavily influenced by Siegrist’s et.al (2005) Trust-Confidence-Cooperation (TCC) Model. The model explains the receiver’s trust of the motives of sender depends on the judgment of sender’s value to be their own value. The judgment depends on the narrative information provided by the sender, in our research the supervisor/manager. The trust is also depends on the past experience of the receiver, in our research the employees, on source. The trust as termed by the study social-trust and confident together determines the level of cooperation to the source. The outcome of cooperating may take many form such as expressing the trust on source, accepting advice about risk level of the source and work relate orders from the source. In our study, for the respondents, the post-merger announcements create anxiety and threaten the organizational trust to some extent. By adopting trust and risk communication model the factors of communication that influence trust level can be explored.

The level of uncertainty rises between times of communication. The time gap leads many employees to leave the organization voluntarily. The most critical component of desired communication concerned the precise nature, timing, and direction of consolidation process (Bligh and Carsten 2005). After the interviews, several suggestions came from the respondents about the type of communication desired from management that would reduce their uncertainty and increase work performance. To best describe, the work of DEvito and Friedman (1995) proposed 4 types of communication activity that managers should sought during merger process. For this paper the understanding of the type of managerial communication is adapted from DEvito and Friedman (1995).

IV. ORGANIZATIONAL SUPPORT FOR LAY-OFF EMPLOYEES

Corporate layoff is an evitable part following a merger. One of the main reasons for layoff after a merge is
downsizing the unskilled or semiskilled workforce and retains the workforce that management thinks best match with the new vision of the company. Another reason is cost cutting. Since merger is one reason to survive in the slowing economy and protect the struggling profit margin, layoff is a legitimate decision to protect the merging company. in my interview, only one respondent was laid-off; therefore, the research could not provide an insightful understanding of the topic. Also, few empirical researches are found on the employee assistance program following a merger. Nevertheless it can be stated that in the presence of any union community for employees the employee assistance program is ensured. For the communication method to be initiated, it is highly recommended that even before any layoff takes place a company must have a detail communication strategy and long term action plan that provides all areas of the lay-off. The timing, message content must be clear. For geographically spread mergers the differences in employees must be considered during layoff. The main focus of any layoff should be to minimizing negative effect on both sides. Before any announcement layoff decision is affected by organizational dynamics and the layoff strategy should be design to reflect those factors. Smeltzer and Zener (1994) focus on the organizational dynamics and effective layoff announcement strategy. In considering the organizational dynamics, culture comes at the very beginning. Communication is thought to be a key part of culture because it helps to create the social structure that makes up an organization and its culture. Thus it is important for management for understanding both organizational culture and study of past layoff if any should also be studied. The organizational climate studies the perception of employees regarding the merger situation. Employees may think the merger as symbol of financial strength on the other hand may perceive layoff as financial struggle. Management also should understand the depth of grape vine or ongoing rumor regarding the merger to measure the antagonistic climate before announcement. The consideration of geographic distance should be undergoing since the problems can develop inconsistent information and inappropriate timing of announcement to widely dispersed employees. The final consideration regarding the existed subculture of group behavior has to make since each group may be distinct. Segmenting the communication process is required to understand the diverse nature of workforce. Also it is very unlikely to consider a factory worker layoff and a head-of-division layoff with same message may perceived by the elater party as the uncaring new management.

The next section is planning the strategy starts with the source of the announcement. Preferably a credible top management who also rationale the decision should announce the layoff. The message must convey the “complete story” pass any confidentiality bubble and confusion. The style of the message be either authoritarian or persuasive depending on the organization. Sometime multiple messages with different style may convey more meaningful message. A richer channel may be sought to convey message. The best channel is face-to-face communication. The timing of the message must be accurately reflecting the intention of announcement. Timing may vary upon organizational and industrial circumstances. Timing must be soon enough to thwart potential rumors and the related inaccuracies.

Employee assistance program is one aspect that helps to regain employees’ mental trauma after a merger. However, one reason of merger is cutting financial burden; so many companies are reluctant to provide any financial assistance beside the contract. Several government programs such also might be helpful for laid-off employees. For managers of a merging company communicating the employee assistance program is vital. Beside the advance notification and severance pay organization can apply other method to keep the morale of laid-off employees up. Below are the recommendation lists that may communicate to the employees:

1. Plan, develop, implement, and promote the EAP program before the actual incident takes place.
2. Distribute brochure and news-letters to inform employees the kind of government and private EAP related materials. Protect and maintain confidentiality regarding all EAP related steps for each department.
3. Plan and communicate company funded retraining program to help employees get jobs elsewhere.
4. Provide training after layoff via online outplacement service.
5. Introduce transition assistance program (TAP) and arrange seminars and counseling to financially help employees.
6. Adopt Trade Adjustment Assistance program (TAA) which intends to compensate employees for trade related income losses in order to adjust with post – merger financial condition.
7. Offer reposition chance to laid-off employees to encourage them to fit themselves with.

VI. CONCLUSIONS

Merger is an ongoing process and it will expand in coming days. The human side of merger is likely to be under scrutiny to identify the psychological aspects of employees. The purpose of this exploratory study is to understand the experience of employees following a merger. The building blocks of negative impacts from employees can cause the failure of merger. The recommendation of this study with opportunity for further research should be taken to understand the intellectual capital of the Mergers and acquisition. From this study it is explored that communication from the onset of integration can tied the organizational trust of employees with commitment that eventually leads to positive organizational performance. For this paper the study suggests that by the end of 100 days of merger the announcement must be conveyed. The entire process and
intention of the management must be clarified. Prompt communication from the top management is desired. Also, the rationale for layoff must be clearly communicated, and post-layoff employee benefits must be initiated so that communication gaps do not occur. Finally, further study of how employees cope with evolving organizational culture can be conducted based on this paper.

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ENERGY, GROWTH- CORRELATIONS IN-BETWEEN AND THEIR IMPACTS ON ENVIRONMENT

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Abstract - This paper presents qualitative and quantitative assessments of energy and growth taking environmental aspects in Bangladesh. Since the independence in 1971, energy consumption has been increasing in Bangladesh along with the increasing number of population, industrial activities and growing demand. The paper evaluates the contribution of energy in growth and its impact on environment in Bangladesh. Very often, it is difficult to establish a correlation between energy and growth as there are a few contributing factors amalgamated in the overall development process of an economy. Same is also applicable in case of the relationship between energy consumption and environmental degradation. Analyzing the consumption of energy in different periods, it reaches to a conclusion by addressing the significant contribution of energy in the socio-economic growth as well as environmental degradation. It also suggests that environmental degradation can be mitigated by replacing it by renewable and taking policy measures.

Keywords – Energy, Economical impact, Environmental impact.

I. INTRODUCTION

Whether energy consumption has an impact on growth and environment or not, it is a great interest in international debate on global development agenda and climate change policy. In spite of extensive study on the causal relationship among energy consumption, growth and environmental change, no consensus in this regard has yet been reached. Many economists opine that energy consumption causes economic growth and vice versa. Many economists think that downfall or growth of income may cause downfall or increase of energy consumption respectively. Many of them view that energy consumption leads to environmental degradation. Some researchers also found that energy consumption, at certain level, causes environmental degradation with economic growth. However, after achieving a certain level of growth when the economy earns technological competency, then environmental pollution again starts to improve. This paper is an attempt to bridge the gap in existing literature through an analysis of contribution and role of energy in the growth and environmental impact in Bangladesh.

In the early 70’s the concept of ‘sustainable development’ took the place of ‘limits to growth’ (Kaika and Zervas, 2013). Sustainability of economic development targets at the certain consumption level or per capita welfare supposed to be kept for future generation. Therefore, according to Ekins (1993), sustainability contains three essential elements, a) the economic sustainability, the environmental sustainability and c) sociopolitical sustainability.

Zahid (2008) investigated the relationship between energy and growth in Bangladesh and some other South Asian countries by using Eagle-Granger (1987) procedure to test null of no co integration. The author used ADF test statistics for unit root testing of residuals. Another method the author used is Toda and Yamamoto. The author found that in case of Bangladesh, there may not have any effect of energy conservation policies on economic growth as energy consumption and GDP are independent and support the hypothesis of neutrality. There is unidirectional Granger causality which runs from GDP to Electricity consumption meaning that if economic growth happens, the consumption of electricity also increases. There is not any adverse effect of electricity consumption on economic growth of Bangladesh. Gas consumption leads to sustainable economic growth and shortage of gas may cause poor economic performance leading to decreasing GDP. It implies that energy conservation policies are likely to influence the GDP growth of Bangladesh.

Faridul and Muhammad (2012) have investigated the relationship among energy consumption, economic growth and CO2 emission in Bangladesh employing Autoregressive Distributed Lag (ARDL) approach for cointegration test for a long run relation and Granger causality within vector error correction model to comprehend short run dynamics. In their test, the authors confirmed a long run relationship among the series. In the causality analysis, they showed that economic growth Granger causes carbon emission and validates Environmental Kuznets Curve in Bangladesh. The research found the unidirectional causality in Bangladesh.
and which is running from urbanization to CO2 emission. An increase in income, pollution from urbanization, and openness of trade Granger cause energy consumption and thus it supports energy consumption led by growth, urbanization and trade. They also confirmed a feedback hypothesis through the mutual Granger causality between energy and CO2 emission.

In 1992, ‘the World Development Report’ reckoned that to some extent environmental problems are connected to lack of economic development and are worsened by the increasing economic activities. It also suggested expediting equality in the growth of income for achieving higher global output and better environmental preservation (Ekins, 1993).

An Environmental Kuznet Curve hypothetically shows a relationship between economic growth and the quality of environment (Miah et al., 2011). According to environmental kuznet Curve (EKC) in figure 1, in the beginning, economic growth is correlated with environmental degradation. Later, the relationship is reversed with a declining environmental degradation when the economy experiences further growth. Thus, the relationship between economic growth and environmental degradation takes a u-shape curve whereas environmental degradation tends to be upward in first time and falls with an increase of per capita income.

![Figure 1: Environmental Kuznet Curve (Source: Kaika and Zervas, 2013)](image)

II. ENERGY CONSUMPTION IN BANGLADESH

There is abundance of natural gas in Bangladesh. So, natural gas is the main source of country’s energy demand. Natural gas is the biggest source of energy in Bangladesh which covers about 87.1% of total energy in Bangladesh. Oil contributes about 6% of energy whereas coal, hydro and renewable contributes very insignificant amount as sources of energy which is shown in the table I below:

<table>
<thead>
<tr>
<th>Sources of Energy in Bangladesh</th>
<th>87.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td></td>
</tr>
</tbody>
</table>

Table I

Despite an increasing trend of primary energy and electricity consumption, Bangladesh still faces energy and electricity poverty. The following table II shows that in 1990, 21.62% of total population had access to electricity which increased gradually to 32%, 55%, and 59.6% in 2000, 2010 and 2012 respectively (World Development Indicator). However, it’s seen that more than 40% of total population had not access to electricity in 2012 that indicates Bangladesh as an electricity poor country.

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>21.62</td>
</tr>
<tr>
<td>2000</td>
<td>32</td>
</tr>
<tr>
<td>2010</td>
<td>55</td>
</tr>
<tr>
<td>2012</td>
<td>59.6</td>
</tr>
</tbody>
</table>

Table II

Source: World Development Indicator

III. TREND OF DEVELOPMENT AND GROWTH IN BANGLADESH

According to World Development Indicator, Bangladesh’s economy has been growing with a steady growth rate since 90’s decade except some fluctuations. From the Figure 2, it is revealed that the annual GDP of Bangladesh has been growing. Whereas GDP in 1991 was only 30.95 billion US dollar, in 2015, it was increased to 195.08 billion US dollars which was more than 6 times of Bangladesh’s GDP in 1991. So, it is clearly seen that the size of the economy an expanding trend in the last couple of decades.
On the basis of the analysis of annual GDP, the annual average growth rate from 1991 to 2015 was 5.37%. However, in the recent past, the annual growth rate was more impressive. From 2005 to 2015, the annual average growth rate of Bangladesh was 5.71% whereas it was about 6.32% from 2011 to 2015. The World Bank has estimated that economic growth of Bangladesh in 2017 will be 7.15 whereas it was forecasted 6.9% by the Asian Development Bank.

IV. RENEWABLE ENERGY: A NEW ELEMENT FOR SUSTAINABLE GROWTH

Most of the people of Bangladesh live in rural area where many poor people are out of the reach of electricity and gas connection (Islam et al., 2011). The country’s energy consumption rate is still very low (275.70 KWh in 2012). Nevertheless, environment in the country is severely polluted and deteriorated because of the paucity of clean energy, lack of education, lack of awareness, improper waste management, deforestation and improper use of land for agriculture, etc (World Bank, UNDP, USAID). As a result, a sustainable development process is interrupted due to the lack of environmental sustainability.

V. ENERGY CONSUMPTION AND ENVIRONMENTAL IMPACT IN BANGLADESH

According to the World Bank there is a strong and deep connection between energy consumption and environment. Energy consumption has both global and local impact on the environment. From the Figure 3 it is observed that per capita CO2 emission in Bangladesh from 1990 to 2012 was on increasing trend. In 1990, per capita CO2 emission in Bangladesh was 0.147 metric ton and it was gradually increasing. In 2012, per capita CO2 emission in the country reached to 0.435 metric ton.

VI. CONCLUSIONS AND RECOMMENDATIONS

Since the independence, Bangladesh progressed significantly. The size of the economy of Bangladesh reached to US$195.07 billion in 2015 from US$8.75 billion US$ in 1971. Increased energy consumption contributed to achieve this remarkable growth. Energy is essential for country’s economic growth engine as well as sustainable development. Use of sustainable energy can ensure a sustainable development and growth. Uses of fossil fuels, coals, and other traditional energy cause environmental degradation, increased temperature, climate change and natural disaster. Environmental degradation increases in the early stage of development. EKC of Bangladesh now stays on the north-west part of the graph until the economy reaches to turning point of development. Economic growth also demands increased energy consumption.

A large portion of Bangladesh’s energy demand can be replaced by renewable energy such as large scale solar system, Solar Home System (SHS), biogas, wind turbines, hydro etc. Dependence on fossil fuels and other primary energy can be reduced. Sustainable development connects the society and environment to protect the country from future natural and environmental disaster. Sustainable agriculture may help adapt adversity and reduce environmental pollution. Environmental degradation coming from agriculture, land-use and forestry, waste management and industrial process should be taken into consideration and an effective energy policy can ensure a sustainable economy and environment in future Bangladesh.

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Policy Makers. Available at 
downscaled_data_download&menu=historical (accessed on 26.02.2017)
Drivers of Intellectual Capital Disclosure among Listed Banks in Bangladesh

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Paper ID:ICBM-17-467

Abstract - This study investigates the impact of corporate governance on intellectual capital (IC) disclosure in the banking industry of Bangladesh. A total number of 30 banks listed in Dhaka Stock Exchange are selected, and data regarding various measures of governance and IC disclosure are extracted from the annual report of 2015. Generalised Method of Moments (GMM) proposed by [1] in 1991 is used to cope with the endogeneity issue evident with the empirical model. The result shows that governance has a significant association with IC disclosure among selected banks in Bangladesh. Board size has a negative impact on performance. Board independence, on the other hand, was not found to have a significant impact on IC disclosure. Only bank size has a positive impact on the extent of IC disclosure. In light of the propositions of agency theory, the study advocates for the smaller board for banks operating in Bangladesh.

Keywords – Intellectual capital, Governance, GMM, Performance, Voluntary disclosure.

I. INTRODUCTION

Knowledge being the new engine of corporate development has become one of the great clichés of recent years. With the advent of the knowledge-driven economy, many companies use IC as a strategic resource in competing for dynamic ways for creating value [2] and [3]. With the notable exception of a few items such as copyrights, patents and trademarks, most IC elements such as innovation, employee knowledge, customer loyalty, information systems and R&D rarely appear in the annual reports [4] thus becoming a hidden value in nature. A company with the vast amount of financial capital in its overall firm value can’t sustain for a long time without intellectual capital. Corporate governance can play a vital role for disclosing IC. Disclosing IC is also an important factor to any financial institutions as they always have some issues to disclose financial and non-financial information. This is the first study that analysed the impact of corporate governance on intellectual capital disclosure using GMM model to control for endogeneity issue in the context of Bangladesh. The purpose of the study was to visualise the extent of intellectual capital disclosures in the annual reports of the banks.

II. GOVERNANCE IN THE BANKING INDUSTRY

In Bangladesh economy, banking sectors play the fundamental role and dominant financier for the industrial and commercial activities. Since the stock market debacle in 2010 and in view of recent corporate scandals in the USA and other developed countries, the concern about corporate governance has increased in Bangladesh and elsewhere [5]. Corporate governance deals with the disclosure of four major components in details. Securities and Exchange Commission (SEC) set those rules which consist of many other components. Four major components are-Board of Director; Chief Financial Officer (CFO), Company Secretary (CS), Head of Internal Audit (HIA); Audit Committee and External/Statutory Auditor cannot engage in some specific job. So, researchers from [6], [7] and [8] supported the need for the broader approach to Corporate Governance and the inevitability of government intervention for banking institutions of Bangladesh to bring the behaviour of bank management under control.

III. LITERATURE REVIEW

Although increasing in importance as economies change to being knowledge-based and technology-based [9], a universal definition for the intangible IC is elusive [10].

According to [11] intellectual capital usually consists of the implicit or experimental knowledge and innovativeness of the employees, the infrastructure of human capital and upgrading processes of structural capital and external relationships of the firm (e.g. customers’ capital).

Disclosure can, however, be voluntary and non-quantitative, occurring in sections of the annual report other than the financial statements. If IC is linked to firm performance, firms and investors will benefit from this disclosure. However other barriers to disclosure exist such as the cost of obtaining information on intangibles, or the perceived loss of competitive advantage with disclosure [12].

The emergence of the current knowledge-based economy is leading intellectual capital (IC) to be the main factor in driving firm value and sustenance of competitive
advantage [13]. Despite that, there is only a small number of studies of IC reporting with specific reference to the banking sector, [14] and more so from developing countries. According to [15] measurement of the intellectual capital performance of commercial banks in Malaysia for the period 2001 to 2003, using efficiency coefficient called Value Added Intellectual Coefficient (VAIC). It was found that all the banks had relatively higher human capital efficiency than structural and capital employed efficiencies.

Disclosure can, however, be voluntary and non-quantitative, occurring in sections of the annual report other than the financial statements. If IC is linked to firm performance, firms and investors will benefit from this disclosure. However other barriers to disclosure exist such as the cost of obtaining information on intangibles, or the perceived loss of competitive advantage with disclosure [12]. Should a firm wish to disclose quantitative figures, measurement remains a difficulty. Rarely can a market price be determined for IC, and the cost of creating IC is often difficult to measure [10].

In [16] and [17] again for only the banking financial institutions, IC management has become inevitable. In every second of business, organisations are busy to find out their competitive advantage and make them better. The banking sector is general services enriched and most knowledge-intensive industry; gaining competitive advantage is contingent on the management of its knowledge base. Besides, the knowledge required for banking operations is more complex than in most industries [18].

From [19]–[23] financial statements, prepared by commonly accepted accounting principles, have rarely been agreed upon to be a sufficient measure of corporate performance to assist in objective evaluation of a firm in the market, as evident by the growing gap between market and book values of a firm.

Also, [24] conducted a study which examines the dynamic relationship between intellectual capital categories and financial capital in an Australian bank. As part of their research, they scrutinised in details the interplay between the ICD categories and their interactions with financial capital. Previous studies note that investments in human capital trigger internal and external capital which ultimately leads to enhanced financial capital [25].

In the context of Islamic banking and finance it can be argued that the main strength of this kind specialized banks lies in its ability to tap on the shariah based expertise on Islamic finance which includes amongst other things interest free banking, risk sharing, prohibition of haram and speculative transactions (e.g. gambling and pornographic industries) [26]. These banks need to develop systems, processes and culture to be in line with the Islamic laws. This unique knowledge base can be arguably manifested via the building of internal capital and its disclosures.

Intellectual capital nowadays is a subject of particular attention by managers, investors, economic institutions and governments and several studies in academic and professional environments [27].

This study will suggest the management and other regulatory bodies to understand the importance of intellectual capital disclosure along with governance and performance. Thus, following hypotheses have been formulated:

\( H_1: \) Board size has a negative impact of Intellectual Capital Disclosure.

\( H_2: \) Board Independence has a positive influence on Intellectual Capital Disclosure.

IV. STUDIES OF IC: BANGLADESH PERSPECTIVE

The importance of non-physical resources suggests that intellectual capital can be identified as a prominent source of competitive advantage for various organizations, which influences the level of innovativeness and creativity that not only lead to the increase of business performance at the micro-level according to [28] but, if applied rigorously in most firms across a wide variety of industries, it can also contribute effectively to a country’s economic growth at the macro-level [11].

In Bangladesh, ICD research is very limited irrespective of its nature. In [29] undertook a content analysis of ICD practices in the annual reports of 20 banks related to the year 2007-2008 and a questionnaire survey of users’ perceptions of current ICD practices. They revealed that in terms of word count 65.0% of the ICD were related to human capital, with 20.8% and 14.2% related to external and internal capital. The frequency count showed a similar pattern of 58.8%, 24.3% and 16.9% for human, external and internal capital. The dominance of human capital related disclosures was attributed to the management intention to provide additional information aimed at the stakeholders and to exhibit management priorities on human resources over their competitors. They also noted that the commercial banks in Bangladesh were not currently enthusiastic about voluntary ICD activities while the stakeholders were in favour of such reporting across a wider range of IC items than is currently disclosed.

Another study [30] examined IC reporting practice, with inconclusive results which even does not refer to the Bangladeshi banking industry. This study intended to investigate the level of awareness of Bangladeshi
companies about IC and their disclosure pattern on a sample of 22 companies enlisted in Dhaka stock exchange from different sectors. Here Bangladeshi companies do not have a positive approach in reporting IC and main focus is on internal capital reporting. Moreover, the companies are disclosing their IC in a qualitative (descriptive) form rather than quantitative form.

VI. RELATIONSHIP BETWEEN CORPORATE GOVERNANCE & INTELLECTUAL CAPITAL

There are very few studies seek to analyse the association between corporate governance and intellectual capital within the context of value addition. Corporate Governance (CG) and Intellectual Capital (IC) were discussed conceptually by [31] in the year 2001. According to them, IC exists in every organisation irrespective of its recognition by the board, and the duty of the corporate governors is to generate, develop and leverage IC stored in people, processes and organisational structure.

Also [32] studied the association among three board characteristics, i.e. size, independent directors and role duality, and intellectual capital efficiency by using VAICTM in Tehran Security Exchange. They concluded that there is a positive link between them. In the same way, in Malaysia, [33] conducted a study and concluded that there is a positive link between large board size and IC performance. They also showed a positive link between a number of non-executive directors and Intellectual Capital.

Another study [34] conceptualise that Corporate Governance and the governance of knowledge are concerned with firm’s knowledge and competence rather than products and markets. They elaborate that contrary to agency problem and market valuation, corporate governance means that investors and managers interact and collaborate in the process of constructing knowledge, competence, learning process to create and effective coordination of interrelated resources and activities. But [35] while examining the relationship between IC and CG in a university setting conclude that CG and IC are indeed related and CG is a major factor attracting IC in an organisation. They further argue that lack of good CG can lead to an inability to attract and retain IC.

VI. METHODOLOGY

The initial sample of the study consisted of thirty commercial banks listed in Dhaka Stock Exchange. Data for the intellectual capital disclosure for the selected banks were extracted from the annual report of 2015 available on their respective websites.

The study has utilised content analysis technique to extract intellectual capital disclosure information from the annual reports. However, the categories of classifications must be clearly defined to make effective use of the content analysis procedure [36]. As a result, Intellectual Capital disclosure index was adopted from the study of [37].

The ICD index included three sections with a total number of forty items. Nine items are measuring internal capital; seventeen are external capital items and the remaining human capital items. To test the impact of governance on intellectual capital disclosure among selected banks, several data analysis methods are performed.

First, the descriptive results are conducted to show the minimum, maximum, mean of the ICD as well as the distribution of the data. A correlation test was conducted to test for multicollinearity issue. Finally, Generalised Methods of Moments (GMM) regression was conducted to tackle the endogeneity issue evident from such governance model. Brief explanations of variables are provided in table 1.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>OPERATIONAL DEFINITION OF VARIABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Abbreviations</td>
</tr>
<tr>
<td>Dependent</td>
<td>Intellectual Capital Disclosure</td>
</tr>
<tr>
<td>Independent – Governance Compliance</td>
<td>Board Size</td>
</tr>
<tr>
<td></td>
<td>Board</td>
</tr>
<tr>
<td></td>
<td>Independence</td>
</tr>
<tr>
<td>Control Variables</td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>Leverage</td>
</tr>
<tr>
<td></td>
<td>Profitability</td>
</tr>
<tr>
<td>SIZE</td>
<td>Size</td>
</tr>
</tbody>
</table>

VII. RESULTS

A. Descriptive Statistics

Table II represents descriptive statistics for Intellectual Capital Disclosure (ICD), governance and control variables for the entire sample for 2015. ICD scores are measured through an adopted disclosure index. Table 4 indicates that the average ICD is 23.53 for the banking sector in Bangladesh. Mean score of board size indicate that banks in Bangladesh are governed by a large board which include a very nominal proportion of independent directors (mean score of 0.11).

| Table II | DESCRIPTIVE STATISTICS |
I.

Voluntary disclosure however.

Independent variables are not

tests that an increase in the number of

bank's intellectual capital disclosure

Table III

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-218.31</td>
<td>110.63</td>
<td>-1.97</td>
<td>0.06</td>
</tr>
<tr>
<td>IND</td>
<td>-4.41</td>
<td>16.31</td>
<td>-0.27</td>
<td>0.79</td>
</tr>
<tr>
<td>BS</td>
<td>-0.58</td>
<td>0.23</td>
<td>-2.54</td>
<td>0.02</td>
</tr>
<tr>
<td>ROA</td>
<td>-334.27</td>
<td>384.49</td>
<td>-0.87</td>
<td>0.39</td>
</tr>
<tr>
<td>SIZE</td>
<td>10.30</td>
<td>4.44</td>
<td>2.32</td>
<td>0.03</td>
</tr>
<tr>
<td>GEAR</td>
<td>-0.42</td>
<td>0.23</td>
<td>-1.81</td>
<td>0.08</td>
</tr>
<tr>
<td>A</td>
<td>-0.28</td>
<td>0.09</td>
<td>-3.15</td>
<td>0.00</td>
</tr>
</tbody>
</table>

| Adj. R²  | 0.14        | SE         | 8.68        |      |
| Durbin-Watson | 1.67 | P | 0.01 |

VIII. DISCUSSION

This study has developed two hypotheses for

empirical analysis. Hypothesis one assumes that board

size has a negative impact on the Intellectual capital
disclosure among listed banks in Bangladesh. Table IV

provides that board size has a significant but negative

impact on the intellectual capital disclosure. It means one

person increase in the board member will reduce ICD

score by 0.58 units for banks in Bangladesh. In light of

the agency theory perspectives, such negative

relationships between board size and voluntary disclosure

have been established by [38]. Thus, H₁ is accepted. In

the second hypothesis, board independence is assumed to

have a positive impact on the ICD. But, such relationships

were not established due to the non-significant values.

Thus, H₂ is rejected.

IX. CONCLUSION

To sum up, this research focused on investigating the

impact of corporate governance in the intellectual capital.

Intellectual capitals have always existed in every

organization. However, it is only recently that the

accounting profession has seriously attempted to define,
disclose, and measure them. Here, it has been observed

that corporate governance does not have significant

influence on the intellectual capital and vice versa, in

banking sector of Bangladesh. There are other governance

factors such as CEO remuneration, audit committee and

board diversity that could have a significant influence on

the IC disclosure in the banking industry which has not

been incorporated in the empirical model. For future

research those factors may be taken into consideration for

a better dimension. As it is a voluntary disclosure,
presently banks are not entirely disclosing IC in their financial statements. If Bangladesh Bank and other regulatory bodies (like ICAB, ICMAB etc) encourage banks to disclose their IC then banks will be able to judge their performance ensuring better corporate governance which may add value to the growth in the long run.
REFERENCES


Inclination of Profitable Organisations toward Corporate Social Responsibility (CSR) in Commercial Banking in Bangladesh

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Paper ID:ICBM-17-494

Abstract - Corporate Social responsibility is something that almost every organization is curious about irrespective of its nature and size. This study is based on multiple regression based research design that aims at examining the impact of organizational profitability on Corporate Social performance in commercial banking industry of Bangladesh. Sample is collected from annual reports of selected listed Banks of Dhaka Stock Exchange (DSE). Banks profitability taken as independent variable is measured by proxy variables Return on Asset (ROA) and Earnings Per Share (EPS). Dependent variable is Corporate Social Responsibility (CSR) which is measured by the expenditures in CSR practice in banks. A profitable company is expected to be inclined more towards spending on CSR activities. This study wish to disseminate a sense among banking people that more profitable company is more sensible towards society. But the findings of the study shows that the profitability has no statistically significant impact on CSR performance.

Keywords - Commercial Banks ; Corporate Social Responsibility Expenditure (CSRE); Dhaka Stock Exchange (DSE); Earnings Per Share(EPS); Multiple regression; Profitability; Return on Asset (ROA);

I. INTRODUCTION

CSR may seem to appeared a new concept across the world but literature shows that the idea has been conceived even ages ago among the corporate [1][14]. Organisations were sensitive enough to serve society in different names may be corporate citizenship, corporate responsiveness or sustainability [14]. Organisations have been consistently showing their concern toward Employees, Consumers, Neighbouring community, and Society at large not only in past and in present days but difference in its efforts that is much more planned ,focused, and deliberate now a days. According to Fredrick (1992)[2] CSR evolvement is the subsequent result of being sensible for environmental, social and economic practices.

Definition of CSR is not same worldwide [14]. Njoroge Jane Gakenia in his research project titled “factors influencing CSR programmes among the commercial bank in Kenya” cited that that European Commission defines CSR (2001), the Green Paper as “a concept according to which companies voluntarily decide to contribute to the attainment of a better society and a cleaner environment”. [14]

Ajide and Aderemi cited in his paper “effects of CSR activity disclosure on corporate profitability” that Unugbro (2004) defined “social responsibility as the obligation of corporate decision-makers to take actions, which protect and improve the welfare of the society which the organization does business.[3]

A study about “effects of CSR activity disclosure on corporate profitability” done by Ajide and Aderemi cited that Gray, Owen &Adams (1996) defined corporate social responsibility disclosure as “the process of communicating the social and environmental effects of organization economic actions to particular interest groups within the society and to society at larger.”[3]

Different industry due to their nature of activities relate with CSR differently [4] and how initiatives taken to serve the society is not same. No matter how different the concept has been perceived “Corporate Social responsibility” being relied a venue for sustained economic development by engaging itself in to education, health, sports ,environment conservation,[5] training leadership and governance and subsequently scope of CSR has taken tremendous speed.

CSR is not just a goodwill gesture by organizations but it’s a prerequisite for good corporate leadership and governance as well as sustained operation and profitability. It’s a corporate competitive marketing strategy for many organizations [6].

In Bangladesh almost every industries embraced CSR with a positive mind set and banking is one of them serving unprivileged group through their several programs ensuring food, shelter, cloth and taking initiatives to create awareness among large population so that a majority come forward to improve the situation extensively. The endeavour has taken a considerate speed especially after issuing the guidelines
by Bangladesh Bank in 2008. Commercial bank taking a number of steps in CSR more than any other sectors in Bangladesh by customizing the services to establish itself as a social corporate citizen. In present scenario Social Responsibility have to be identified an integral part of the total wealth creation process as commercial banks have to face a stiff competition not only for survival purpose but achieve the competitive advantageous stage. Therefore, there is a significant growth in CSR expenditure by commercial banks as ethical principles have been integrated in to strategy development procedures. A lot of studies have already been done where CSR as an independent variable influence the firm’s financial performance [1][6]. Our research can be seen as an attempt to be made to establish relation between Profitability and Corporate Social responsibility (CSR) that means profitable organization is more ethical and sensible for employees, customers, government, neighboring environment and other stakeholders. This phenomena can be strongly established when profitable organizations are showing positive trend towards investing in CSR activities.

II. LITERATURE REVIEW

A number of prior literature is set to establish link between CSR and profitability of firms. Most of the analyses finds that CSR as an independent variable do have a significant effect on firm’s sustained growth But a few analysies produced conflicting results and any generalized statements has proved insufficient.

A study done in Indonesia explored the impact of three independent variables including media exposure, firm size and firm sensitivity tested on CSR disclosure and investor reaction concluded that independent variables do have positive impact on CSR disclosure but not on investor reaction. Further they stated quality of CSR disclosure in fact directs investors’ decisions of investment [7].

A research conducted in Libyan firms in 2012 for exploring factors company age, company size and industry type having influenced on quality of CSR disclosure found in their quantitative analysis that except company size other variables like company age and industry type determines the quality of CSR disclosure. Interestingly in qualitative findings all three variable positively influence the levels of CSRD in the annual reports of Libyan companies [8].

In Doctoral dissertation, The University of Nairobi (Nzovah,2012)[9] conducted in Kenya taking multinational banks concluded stakeholders’ welfare and relations seemed to be taken by the participants as a key influencing factor in the adoption and implementation of CSR among other factors. This opened the door of question of relationship between CSR and any measurable financial benefits of the bank.

A study about investigating factors of motivation behind level and quality of Corporate Social and Environmental Disclosure(CSED) made by companies stated that how much managers are clear with reasons of CSED and stakeholders’ perception of CSED information improve the practices of this kind of disclosure [10].

A study conducted by Campbell (2007)[11] about testing factors conducive for CSR activities concluded that financial growth of the organization, Country economy and state laws instigate the organization to move toward CSR initiatives.

Anyonea (2005)[1], concluded that there is positive relation between Social responsibility and profitability in banks in Kenya but recommended a further study to establish a relations between social responsibility and other economic performance measures like customer /capital base, growth rate.

According to the study conducted in Nigerian [12] banking industry see CSR as a rescue point to develop a favourable image in the market hence included in activity reports.

In a study published in Kenya [6] highlighted that there exists a positive relationship between investment in CSR and banks’ sustained growth. It was evident from the study that banks’ management can use investment in CSR activities to create a platform for improvement on their brand value, promotion and enhance social insurance.

A study conducted in Romania about Impact of Corporate Social Responsibility Practices on The Banking Industry in 2015 offered a CSR model where CSR practices is suggested in environment, education, social, and culture and subsequent improvement is shown in stakeholder interest, employees improved products, promotion reputation. Banks interpret that CSR practices help to improve the image in market but have not registered an expected level of sales for the products held [5].

An exploratory study [13] aimed to find the trend of profitability on the Corporate Social Responsibility Expenditure (CSRE) of the commercial banks in Bangladesh found that more profitable banks are positive toward discharging their duties to society. This study used the Net Interest Margin (NIM), Cost to Income Ratio (CIR), Return on Assets (ROA) and Return on Equity (ROE) as the proxy variables for the measurement of the profitability.
A Doctoral dissertation published in Kenya [14] investigated company’s policy guidelines and regulation, environmental conservation, ethical practices, stakeholder’s values and profitability as a factor influencing CSR practice. These factors as an independent variables tested for CSR as the dependent variable where it is concluded that profitability has influenced CSR programme implementation.

A study conducted in Bangladesh taking MNCs and local firms to set a trend for CSR practices in multinational Corporations (MNCs) and local firms found that CSR prospect have risen dramatically in MNCs and national firms. Organisations in Bangladesh approaching CSR practices from strategic point of view [15].

A study designed in Italy, 2011 to establish correlation between social and financial performance concluded that there is not a considerable impact of CSR activities on financial growth of banks. In other words, CSR expenditure is not positively related with economic growth of banks [16].

A study on national and international banks to establish the correlation between social performance proxied using ethical rating and financial performance proxied by market and accounting ratios found that Corporate social performance (CSP) and Corporate financial performance (CFP) are not correlated neither positively nor negatively [17].

According to a study Upperle, Carroll, and Hatfield (1985) [18] found no important relation between Corporate Social performance (CSP) and organisation’s risk adjusted return on assets(ROA).

III. HYPOTHESES

A broad range of literature has examined the relationship between profitability of the organization with that of CSR activities focusing mainly on the effect of CSR on profitability [1][7][9][12], while much less number attempting to examine the reverse relationship [13][14]. Moreover, the results of these studies came up with no similar findings. The issue hence provides scope for further studies. This study, therefore, attempts to examine this relationship with the assumed hypothesis that business organizations as a social being opts for CSR activities and this act of responsibility accelerates when they have enough capacity (profitability) or surplus fund to carry out such activities. Hence, to examine whether profitability has any impact on banks’ CSR activities or not, two separate hypotheses has been developed.

Hypothesis 1-

H0: The Corporate Social Responsibility activities (CSRE) of the banks are not significantly influenced by Profitability (ROA)

Ha: The Corporate Social Responsibility activities (CSRE) of the banks are significantly influenced by Profitability (ROA)

Hypothesis 2-

H0: The Corporate Social Responsibility activities (CSRE) of the banks are not significantly influenced by Profitability (EPS)

Ha: The Corporate Social Responsibility activities (CSRE) of the banks are significantly influenced by Profitability (EPS)

IV. OBJECTIVE

Broad Objective:

To test the impact of profitability on CSR expenditure in commercial banking in Bangladesh.

Specific Objective:

1. To test the impact of ROA on CSRE
2. To test the impact of EPS on CSRE

V. METHODOLOGY

A. Sample

For conducting the study, sample size is selected using the Purposive sampling method. 20 private commercial banks (excluding the specialized ones) are selected from first, second and third generation banks. The reason for not choosing the fairly new banks is the tenure of the operation; it is considered that they are not in the operation for so long so as to generate a practical study on their CSR activities and profitability.

B. Data and Variables

The dependent variable of the study is the CSR activities of the banks and the independent variable is the Profitability of the respective banks. The CSR expenditures carried out by the banks are taken as the proxy for the dependent variable of CSR activities. For the independent variable, two
measures of profitability – ROA (accounting based profitability measure) and EPS (market based profitability measure) are assumed as the proxy for it. Another two variables – Operating duration (age of the banks) and Leverage are taken as the control variables for the model of the study.

All the independent variables used in this study are backed by prior literatures. Though profitability of a company can be measured through a number of measures, for this study ROA and EPS are taken as the proxy for profitability. ROA is one of the mostly used proxies for profitability and its relationship with CSR activities is backed by a good number of literatures [19][20][21]. Although not as much as ROA, but EPS too is referred in some studies [21][22]. The operating duration or the age of the company has been taken as a predictor for CSR activities in many of the previous studies. Some of them show strong positive impact of company operating duration on CSR disclosure [23][8] while others showed negative impact [24][25]. Again some studies attempts to find the impact of leverage on CSR activities [26][27][28].

Data are secondary in nature and are collected mainly from the annual reports (from the year 2011 to 2015) of the selected banks. The data for CSR expenditures (CSRE) of the banks are collected from the ‘Review of CSR activities of Bangladesh Bank, Commercial Banks and Financial Institutions’ published by Bangladesh Bank.

Collected data when organized resulted into a balanced panel data with 100 observations (5 years data for each of the 20 banks) (Ap. 1.1, Ap. 2.1). Data is analyzed with the Statistical Software package Stata.

C. Regression Model

Multiple linear regression is used to develop a model for predicting the extent of Banks’ CSR activities from their respective profitability. To test the three separate hypothesis in the study, three multiple regression model has been formed. The significance level is set at 5% and 1%. The models are as follows:

Model 1:

\[ CSRE_{it} = \alpha + \beta_1 \text{ROA}_{it} + \beta_2 \text{OD}_{it} + \beta_3 \text{Leverage}_{it} + \mu_{it} \]

[For Hypothesis 1]

Model 2:

\[ CSRE_{it} = \alpha + \beta_1 \text{EPS}_{it} + \beta_2 \text{OD}_{it} + \beta_3 \text{Leverage}_{it} + \mu_{it} \]

[For Hypothesis 2]

Where,

\( CSRE \) = Corporate Social Responsibility (CSR) expenditure,
\( \text{ROA} \) = Return on Asset,
\( \text{EPS} \) = Earnings per share,
\( \text{OD} \) = Operating Duration (years) of the banks,
\( \alpha \) = unknown intercept (constant) for each entity,
\( \beta \) = regression coefficient,
\( \mu \) = error term,
\( i \) = entity and \( t \) = time.

VI. RESULT AND DISCUSSIONS

At first, Hausman Test is run to determine between Fixed-effect and Random-effect model for panel data. After a model (fixed or random) is determined, it is tested for heteroscedasticity with Modified Wald Test for groupwise heteroscedasticity (in Fixed effect regression model). To account for the heteroscedasticity found in the data (Ap. 1.3, Ap.2.3), the standard errors are then transformed into Robust standard errors.

Model 1 (for Hypothesis 1):

Multiple regression analysis was used to test if the CSRE of the banks can be significantly predicted from ROA. The result shows that the model is a good fit for the variables (F(3,19) = 8.65, p<0.05) and the independent variables explained 55% of the variability (\( R^2 = 0.55 \)) in the dependent variable (CSRE) (Ap. 1.4). The summary of the regression is shown in the table below:

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>OD</th>
<th>Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>11.368</td>
<td>-0.207</td>
<td>45.989</td>
</tr>
<tr>
<td>t-value</td>
<td>(0.71)</td>
<td>(-0.03)</td>
<td>(3.89)**</td>
</tr>
<tr>
<td>sig.</td>
<td>0.486</td>
<td>0.976</td>
<td>0.001</td>
</tr>
<tr>
<td>( R^2 )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\* p<0.05; \** p<0.01
The result from the table shows that only Leverage can significantly predict CSRE (p<0.01), but ROA and OD cannot (p>0.05). As Leverage and OD play the role of control variables in the study, their significance is ignored and rather the importance is given on ROA. As the t statistic for testing to determine whether ROA can significantly predict CSRE is 0.71 with a p-value of 0.486 (p=n.s.), the decision is to fail to reject the null hypothesis.

Model 2 (for Hypothesis 2):

Multiple regression analysis was used to test if the CSRE of the banks can be significantly predicted from EPS. The result shows that the model is a good fit for the variables (F(3,19) = 11.30, p<0.05) and the independent variables explained 55% of the variability (R²= 0.55) in the dependent variable (CSRE) (Ap. 2.4). The summary of the regression is shown in the table below:

### Table 2
Regression summary of model 2

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>t-value</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>3.874</td>
<td>0.52</td>
<td>0.607</td>
</tr>
<tr>
<td>OD</td>
<td>-1.243</td>
<td>-0.21</td>
<td>0.838</td>
</tr>
<tr>
<td>Leverage</td>
<td>45.599</td>
<td>3.95**</td>
<td>0.001</td>
</tr>
<tr>
<td>constant</td>
<td>-400.179</td>
<td>3.52**</td>
<td>0.002</td>
</tr>
</tbody>
</table>

\[
R^2 = 0.55 \\
N = 100
\]

The result from the table shows that only Leverage can significantly predict CSRE (p<0.01), but EPS and OD cannot (p>0.05). As Leverage and OD are controlled, their significance is ignored and rather the importance is given on EPS. As the t statistic for testing to determine whether EPS can significantly predict CSRE is 0.52 with a p-value of 0.607 (p=n.s.), the decision is to fail to reject the null hypothesis.

The study was initially attempted with the assumption that the businesses, being a social being would inherently be interested in their social performance; the more profitable the organizations would be the more they will be willing to impart the fair share into the society. But as in both of the hypotheses we failed to reject the null hypothesis; it is evident that the case is not as assumed. Firm’s profitability has no statistically significant impact on CSR performance. This can be explained from different angles. Firstly, the CSR disclosure especially in developing countries is mostly driven by the regulatory requirement and activist groups’ pressure [19]. Moreover, CSR activities are seen to be a means of attaining legitimacy from pressure groups[29], especially from the customers and thus transforming this legitimacy into financial performance of the organization [30]. So, as the result of the study suggests, rather than being inherently socially responsible, the banks are more likely to be involved in CSR due to direct and indirect pressure from regulators and market[12]. Hence, profitability has almost no impact on CSR. Secondly, the choice of CSR measure for the study can play significant role in attaining the result. Different literatures have employed different measures for CSR performance and have been seen to come up with different results [17]. Hence the result of the study might show different outcomes compared to prior literatures. Thirdly, the practice of CSR disclosure is a country specific phenomena [31] and hence is greatly influenced by the socio-economic environment of the countries. So, even if some countries show a positive correlation between CSR and financial performance [32], it might not be the case for Bangladesh.

### VII. CONCLUDING REMARKS

The studies conducted on the relationship between CSR performance and Profitability have marked significant differences in opinions. It might be due to the ambiguity in very nature of CSR and existence of various alternative measures of CSR. Besides, because of its country-specific determinants [11][32], a variation in the outcome might arise. A country’s socio-economic patterns and regulations should also be taken into consideration. Therefore, like every other literature out there, this too has some limitations and hence lays ground for further relevant studies. This study mainly focuses on banking industry of Bangladesh. The study in any other industry or for any other country might therefore come up with different results. Again some other alternative measures for CSR might be employed in further studies to verify the outcome of this study. Furthermore, this study with its finding that companies are not being inherently socially responsible rather are using CSR to gain the legitimacy lays the ground for further research on how to incorporate measures to make the organizations a little more keen in CSR performance.
References


Appendix: 1

Ap. 1.1 Panel data description

```
xtrset banknum Year, yearly
  panel variable: banknum (strongly balanced)
  time variable: Year, 2011 to 2015
  delta: 1 year
```

Ap. 1.2 Hausman test for determining fixed or random effect

<table>
<thead>
<tr>
<th></th>
<th>Coefficients</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(b)</td>
<td>(B)</td>
<td>(b-B)</td>
<td>sqrt(diag(V_b-V_B))</td>
</tr>
<tr>
<td>fixed</td>
<td>random</td>
<td>Difference</td>
<td>S.E.</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>11.36832</td>
<td>26.1766</td>
<td>-14.80829</td>
<td>5.793042</td>
</tr>
<tr>
<td>OD</td>
<td>-0.2072128</td>
<td>3.180821</td>
<td>-3.388034</td>
<td>6.145694</td>
</tr>
<tr>
<td>Leverage</td>
<td>45.98907</td>
<td>44.41384</td>
<td>1.575229</td>
<td>2.647189</td>
</tr>
</tbody>
</table>

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

\[ \chi^2(3) = (b-B)'(V_b-V_B)^{-1}(b-B) \]

\[ = 126.65 \]

\[ Prob>\chi^2 = 0.0000 \]

Ap. 1.3 Heteroscedasticity test

Modified Wald test for groupwise heteroskedasticity in fixed effect regression model

H0: \( \sigma(i)^2 = \sigma^2 \) for all i

\[ \chi^2 (20) = 9327.84 \]

\[ Prob>\chi^2 = 0.0000 \]
Ap. 4 Regression output (CSRE, ROA, OD, Leverage)

<table>
<thead>
<tr>
<th>Fixed-effects (within) regression</th>
<th>Number of obs = 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group variable: banknum</td>
<td>Number of groups = 20</td>
</tr>
<tr>
<td>R-sq:</td>
<td>Obs per group: min = 5</td>
</tr>
<tr>
<td>within = 0.5472</td>
<td>avg = 5.0</td>
</tr>
<tr>
<td>between = 0.4684</td>
<td>max = 5</td>
</tr>
<tr>
<td>overall = 0.4872</td>
<td>F(2,19) = 8.65</td>
</tr>
<tr>
<td>cor(u_i, Xb) = -0.1908</td>
<td>Prob &gt; F = 0.0008</td>
</tr>
</tbody>
</table>

(Std. Err. adjusted for 20 clusters in banknum)

| CSRE       | Robust Coef. | Std. Err. | t     | P>|t|   | [95% Conf. Interval] |
|------------|--------------|-----------|-------|-------|---------------------|
| ROA        | 11.36832     | 15.98339  | 0.71  | 0.486 | -22.0853 44.82193  |
| OD         | -.2072126    | 6.826503  | -0.03 | 0.976 | -14.49525 14.08082 |
| Leverage   | 45.98907     | 11.82874  | 3.99  | 0.001 | 21.28752 70.74062  |
| _cons      | -425.5071    | 153.5788  | -2.77 | 0.012 | -746.9512 -104.063 |

| sigma_u   | 140.75572    |
| sigma_a   | 91.31861     |

Appendix: 2

Ap. 2.1 Panel data description

panel variable: banknum (strongly balanced)
time variable: Year, 2011 to 2015
delta: 1 year

Ap. 2.2 Hausman test for determining fixed or random effect

<table>
<thead>
<tr>
<th>hausman fixed random</th>
</tr>
</thead>
<tbody>
<tr>
<td>b = consistent under Ha and Ho; obtained from xtrreg</td>
</tr>
<tr>
<td>B = inconsistent under Ha, efficient under Ho; obtained from xtrreg</td>
</tr>
<tr>
<td>Test: Ho: difference in coefficients not systematic</td>
</tr>
<tr>
<td>chi2(3) = (b-B)'<a href="b-B">(V_b-V_B)^(-1)</a></td>
</tr>
<tr>
<td>237.76</td>
</tr>
<tr>
<td>Prob&gt;chi2 = 0.0000</td>
</tr>
</tbody>
</table>
Ap. 2.3 Heteroscedasticity test

Modified Wald test for groupwise heteroskedasticity in fixed effect regression model

\[ H_0: \sigma^2(i) = \sigma^2 \text{ for all } i \]

\[
\begin{align*}
\text{chi}^2 (20) &= 11490.16 \\
\text{Prob} > \text{chi}^2 &= 0.0000
\end{align*}
\]

Ap. 4 Regression output (CSRE, EPS, OD, Leverage)

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>Std. Err.</td>
<td>t</td>
<td>P&gt;</td>
<td>t</td>
</tr>
<tr>
<td><strong>CSRE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPS</td>
<td>3.874308</td>
<td>7.410452</td>
<td>0.52</td>
<td>0.607</td>
<td>-11.63595</td>
</tr>
<tr>
<td>OD</td>
<td>-1.243231</td>
<td>6.005863</td>
<td>-0.21</td>
<td>0.838</td>
<td>-13.81365</td>
</tr>
<tr>
<td>Leverage</td>
<td>45.59909</td>
<td>11.54283</td>
<td>3.95</td>
<td>0.001</td>
<td>21.43968</td>
</tr>
<tr>
<td>_cons</td>
<td>-400.1791</td>
<td>113.7831</td>
<td>-3.52</td>
<td>0.002</td>
<td>-638.3298</td>
</tr>
<tr>
<td><strong>sigma_u</strong></td>
<td>140.38219</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>sigma_e</strong></td>
<td>91.376554</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Understanding the Major Determinants of Investment Behaviour of Small Investors in Bangladesh: A Survey of Dhaka Stock Exchange

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¹BRAC Business School, BRAC University, Dhaka Bangladesh
²BRAC Business School, BRAC University, Dhaka Bangladesh

Abstract: The capital market of Bangladesh received much attention in the general and business community over the last two decades. While the market became an important source of capital mobilisation for business organisations of the country, lack of regulatory measures, and proper surveillance of market activities have been referred to as major deterrents to its smooth functioning. Market crashes of 1996 and 2010 reiterated the need for regulatory reforms to contain unfair trading practices in the two stock exchanges of the country. While the setbacks in the capital market have largely been attributed to widespread manipulation, the ability of general investors in prudent selection of securities for investment could very well be enquired into. This paper attempts to find out whether and to what extent our small investors are aware of various fundamental tools of making good investment decision and how far these decision tools influence their investment. Factor analysis was performed to identify the grouping of various decision attributes and descriptive statistics were obtained to understand the strength of individual scale items in influencing investors’ investment decision. Observations and recommendations have been provided in light of the findings.

Keywords: Capital market; small investor; investment behavior; Dhaka Stock Exchange; Bangladesh: statistics.

I. INTRODUCTION

A strong capital market is one of the foundations of a strong economy. The capital market(s) Bangladesh, gained momentum in the mid-nineties. Since then, the Dhaka Stock Exchange and the newly established Chittagong Stock Exchange experienced normal ups and downs and went through various reforms. In the early nineteen nineties the market lacked proper surveillance system, presence of circuit breaker and automated trading system. The index moved at a slower pace till 1995. However, in 1996, the market experienced remarkable pace increase. It brought more enthusiastic investors into the stock market and the prices continued to rise sharply. Regulators introduced measures to control this price increase, but it did not have much effect on the investors. Finally, in November 6, 1996, the market index had a sharp plunge and lost over 233 points in one day. The downward trend continued and in April 1997 index dropped to 957 points. Thousands of investors lost their capital and new investors were reluctant to invest in the capital market. The downward trend continued for quite some time and regulators introduced effective policies to regulate the market and attract investment. The results of these measures along with new share issuance by big companies became visible as thousands of investors started to invest and the prices again started to spiral up. In December 2010, the DSE all share weighted average index hit its all-time highest 8,918 points. But the bubble busted on December 19, 2010. On that day the index nosedived by 551 points (6.72%) to 7,654 points. This was the worst crash in 55 years in the history of stock market in Bangladesh. This caused millions of investors, mostly small investors to lose their capital. The index continued to plummet falling well below the five thousand mark and even more than three years after the crash, the exchanges in both Dhaka and Chittagong show little indications of a considerable recovery. Abdullah, M.N., Parvez, K., Khaled, M [I]. in “Is the stock market overvalued: A case study in the context of Bangladesh”, Asian Business Review, Vol 1, Issue 1, September 2012, Syed Golam Shahjartul Alam [I] in “Recent Trends in Capital markets of Bangladesh: Critical Evaluation of Regulation” After the market crash, several corrective measures were taken and a committee was appointed by Government to investigate the reasons behind the market turmoil. The committee came up with their observation and possible causes that included, direct listing in primary issue, misuse of book building method, illegal private placement, stock price manipulation in the secondary market through omnibus account, high premium, and so forth (Syed Golam Shahjartul Alam in “Recent Trends in Capital markets of Bangladesh: Critical Evaluation of Regulation”[II]. While much of these stock market crashes were attributed to unlawful trading practices and poor governance of the markets, the investment behaviour, and competence of the small investors could very well be looked into. It is logical to assume that the market manipulators took advantage of the investors’ lack of ability in stock selection and risk diversification based on adequate theoretical and practical understanding of market dynamics and investment fundamentals. If the investors were more knowledgeable about analysing investment opportunities based on detailed evaluation of the industries, companies, and other micro and macro environmental factors, they could make more rational
Investors would be less sure of loss while engaged in the research. They suggested that mistakes advocated by behavioral finance, Alpert and Raiffa, and create price anomaly in the securities market which various noises in the market do not have access to insider information, but reacts to Slovic, and Lichlenstein overconfidence bias was also reiterated leads to over or under reactions in the securities market.

Overconfidence about accuracy influences individuals to be risk seeker in choices of sure gain and on the other hand to be risk averse in choices involving sure loss. Daniel, Hirshleifer, and Subrahmanyam described three heuristics and emotional biases. Tversky and Kahneman explained how behavioral factors, like greed and fear, cognitive dissonance, heuristics, mental accounting, and anchoring influenced individual investors’ investment decision. Though investors may ignore these factors, they often lead to behavioral biases that may affect their ability to design an optimum investment strategy and ultimately the performance of their investment in stock market. He also emphasized how cognitive errors like, Representativeness Heuristics, Overconfidence, Availability Heuristics, Regret Aversion, Cognitive dissonance, Anchoring, Mental Accounting, Greed and Fear etc. influence investor’s perception of risk and his decision making. In conclusion he suggested that investment advisors and finance professionals must incorporate behavioral issues as risk factors in order to formulate efficient investment strategies.

Nagy and Obenberger summarized various utility-maximization and behavioral variables into seven summary variables that captured major investor considerations. Their study revealed that individual investors’ stock purchase decisions were based on classical wealth-maximization criteria combined with these behavioral variables. The study grouped the influencing factors as neutral information, accounting information, self-image/firm image coincidence, classic factor, social-relevance, advocate-recommendation, and personal financial factor. Their findings suggested that though investors employed diverse criteria while choosing stocks, the classical wealth maximization criteria were still very important to investors. They suggested that investment decision process appeared to incorporate a broader range of items than previously assumed. Also, each investor may view the seven broad attributes differently in terms of their relative importance.

Zoghlami and Matoussii analyzed and identified five key psychological factors that influenced investor behavior and could drive momentum effect in Tunisia. Their methodology was based on psychological and cognitive approach. They first tested whether the psychological biases advocated by behavioral financial researchers had significant influence on Tunisian investors. Then they determined contextual psychological biases that seemed more appropriate for Tunisian
Individual Investors’ behavior cannot always be fully explained by classical theories of economics. Some recent studies have explained that investors often behave irrationally as several factors influence their investment decision in the stock market. Chandra and Kumar [XVI] examined whether some psychological and contextual factors affected individual investor behavior in the Indian stock market. Their study concluded that five psychological factors appeared to be driving the Indian investor behavior—prudence and precautionary attitude, conservatism, under confidence, informational asymmetry and financial addiction.

Kadiyala and Rau [XVI] tested over-reaction and under-reaction models for four corporate events – seasoned equity offering, share repurchases, stock financed acquisitions and cash financed acquisitions. The study concluded that investors appeared to under-react to prior information as well as to information conveyed by the event, leading to different patterns, return continuations and return reversals that are documented in long-horizon returns. The study found no support for over-reaction hypothesis and also for a more complicated behavioral model which predicts that investors over-reacts to long-term trends and under-reacts to short-term information.

Fischer and Gerhardt [XVII], proposed a simple model to measure the impact of financial advice on investment decision. They stated that financial advice was an important influencing factor which had been ignored in many existing literature. They suggested that investors could utilize the available financial advice at different stages of the decision making process and improve the quality of their investment decision. The authors suggested a simple model that included quality, effectiveness, and intensity and hoped that this would help to measure the effect of financial advice.

Baker and Wurgler [XVIII] proposed a “top-down” approach to investor behavior. Based on their view that real investors and markets are too complicated to be neatly summarized by the biases of “bottom-up” approach. They focused on the impact of investor sentiment and limits to arbitrage on the investment behavior. They advocated that it was possible to measure the investor sentiment and this sentiment would affect the individual firms and the stock market as a whole. They pointed out that stocks with low capitalization, younger, unprofitable, high-volatility, non-dividend paying, growth companies or stocks of firms in financial distress were most likely to have greater impact of investor sentiment.

Ideally, a knowledgeable investor in the capital market would be expected to follow a systematic approach to selecting securities to invest in as suggested by the top down approach. First, they would analyse the macroeconomic forces to identify the potential industry to invest. Second, they would dissect the selected industries to identify the companies that are the best performing ones within these industries. Finally, they would perform detailed financial analyses of these companies and their stocks to arrive at an inference as to whether a stock would be worthy of investment.

Glezakos, Merika and Kaligosfiris [XIX] analysed factors influencing Greek investor behaviours on the Athens Stock Exchange using modified questionnaire. The results indicate that individuals base their stock purchase decisions on economic criteria combined with diverse other variables. They do not rely on a single integrated approach, but rather on many categories of factors. The results also revealed that there is a certain degree of correlation between the factors that behavioural finance theory and previous empirical evidence identify as the influencing factors for the average equity investor, and the individual behaviour of active investors in the Athens Stock Exchange (ASE) influencing by the overall trends prevailing at the time of the survey in the ASE.

Merikas, et. Al. [XX] studied that the most important variables were related to classic wealth maximization criteria. Environmental criteria like “coverage in the press”, “statements from politicians and government officials” and “political party affiliation” were totally unimportant to most stock investors. Five factors were identified as accounting information, personal financial needs, subjective/personal, advocate recommendation, and neutral information.

Al-Tamimi [XXI], found six factors to be most influencing on the investor behaviour in UAE. In a descending order of importance, these factors are – expected net income of the firm, getting rich quick, stock marketability, past performance of the firm’s stock, government holdings, and the creation of organized financial markets. Conversely, five factors were found to be least influencing, which are (in a descending order of importance) – expected losses in other local investments, minimizing risk, expected losses in international financial markets, family member opinions, gut feeling on the economy.

Stock valuation techniques using fundamental analysis is viewed as an important tool for making stock investment decisions. According to May [XXII], the value to an individual of a common stock at a point in time is equal to the present value of the expected future cash flows to the holder of a share of the stock, discounted at the expected
opportunity rate of return for the expected level of risk attendant upon the flows. Each investor forms his own expectations about future flows, risk, and the opportunity rate of return and arrives at his own value. If his value is different from the price at which he can buy and sell he will presumably change his holdings.

May [XXII] also found that quarterly earnings announcements by corporations usually have a positive impact on their stock prices, generally caused by greater demand compared to before the announcements. There are limitations in quarterly accounting because there are chances of seasonality and variability which cannot be eliminated by the efforts of accountants. Nevertheless, most individual investors tend to be motivated by the quarterly earnings announcements since most of them do not consider the chance of seasonality and variability.

Kaplan and Roll [XXIII] analysed how individual investors evaluate accounting information for making investment decisions. They found that sophisticated investors are able to understand and evaluate detailed financial statements and result from the evaluation is a very important factor that influences their investment decisions. But most of the individual investors are not sophisticated investors, and the market mainly consists of investors who are not able to analyse the financial statements properly and they might be driven by other factors.

Engelberg and Parsons [XXIV] found that there are strong correlations between stories reported by the media and stock market reactions. Investment decisions of individual investors are highly influenced by the stories reported by the media. Daily trading volume of stocks is directly related to the extent of press or media coverage. Individual investors are highly dependent on media for information about the market and investors make their investment decisions primarily based on those information.

Efficient Market Hypothesis proposes that stock market prices reflect all publicly available information so that it is impossible to systematically attain abnormal returns using such information (Winsen, [XXVI]). He studied whether the flow of information was associated with the investor behaviour or not. The findings supported the argument that investors in some firms misunderstand and/or misuse certain publicly available data items which results in their behaviour not being an adequate function of the flow of information coming in the stock market.

Barberis and Thaler [XXVI] agrees with the theory of limited arbitrage which shows that if irrational traders cause deviations from fundamental value, rational traders will often be powerless to do anything about it. They also discussed the psychological factors that influence investor behaviour. These factors are overconfidence, optimism and wishful thinking, representativeness, conservatism, belief perseverance, anchoring, and availability biases.

The discussions of the above literature on investors’ behavioural responses in making investment decisions in the stock market leads to a simple conclusion, “Although investors in the capital market are expected to be knowledgeable and act rationally in their selection of stocks for investment, a significant portion of these investors are neither fully knowledgeable nor adequately rational.” The reflection of this character of investor behaviour has been evident in the available literature where different studies came up with very different sets of attributes explaining investor behaviour. Even some decision variables appear to have been grouped into different sets of attributes. Other studies reviewed for the purpose of developing the constructs for this study revealed the same phenomenon. Bashir, et.al. [XXVII]; Sultan and Pardhasaradhi [XXVIII]; Brahmbhatt, Kumari, and Malekar [XXIX]; Jagongo and Mutswenji [XXX]; Viswanadham, Dorika, and Mwakapala [XXI]; Iqbal and Usmani [XXVII].

The attributes that investors consider while investing in the stock market can have influence as predictors of investors’ perception about the stock market as a whole. First, these attributes can explain how the investors perceive the performance of the market. Investors would express varying degrees of satisfaction at the current level of performance of the market. It is also plausible that a satisfied investor would recommend others to invest in the market. Second, the investors decision attributes would reflect the level of optimism/confidence about the future of market performance. Brahmbhatt, Kumari, and Malekar [XXIX] suggest that such optimism would be evident in the investors’ intention to continue their investment in the market not only at presence but also in the near future. Last but not the least, the attributes affecting investment decision can reflect upon the perception about the investors’ ability to make investment decisions. Brahmbatt, et al. [XXIX] suggest that investors who are confident about their ability to invest would be confident in their ability to select financial instruments for investment, be willing to take full responsibility for the result of their investment decision, be confident to manage their own investment, and believe to have complete knowledge of available financial instruments.

In light of these valuable insights into what forces influence an investor’s investment behaviour, it would be worthy of finding out how knowledgeable the general investors are in the Bangladesh capital market and to what extent they are influenced by the various attributes influencing investment behaviour how these attributes play a role in predicting their perceived satisfaction about current market performance, their perceived optimism about the future of the stock market, and finally, their perceived confidence in their ability to make investment decision. The study would be particularly relevant in the
context of the huge setback that they have suffered due to the recent crash in the two stock exchanges of the country.

This study pursues three major research objectives:

1. Identification of the key factors that influence small investors of Bangladesh in making investment decisions.
2. Determination of the key considerations that small investors in Bangladesh make while making investment decisions.
3. Understanding how the key factors of investment decision predict the investors’ satisfaction over market performance, their optimism about the future performance of the market, and their ability to make investment decisions.

III. METHODOLOGY

Secondary research was first conducted to explore past research works on various qualitative and quantitative aspects of investment that small investors consider while deciding on investing in the stock market. Most of the published materials pertained to the capital markets in the developed countries or countries where the capital market had been operating for a significantly long period of time. We felt these findings would be different from the context of the stock markets in Bangladesh (Dhaka and Chittagong Stock Exchanges), which have been operating for less than fifty years and where the small investors lag behind in terms of knowledge, experience, and maturity. However, the lack of indigenous literature led to our derivation of preliminary insights from models developed in other countries.

Questionnaire Design and Pre-testing: A preliminary version of the questionnaire was based on secondary research, in-depth interviews, and extensive brainstorming. The quality attributes that are most suitable to explain what investors consider important while investing in the stock market. Close-ended questions were used to collect data from the respondents. The survey questions measured each attribute on a five-point Likert scale with “strongly agree” reflecting the highest favourable response and “strongly disagree” indicating the least favourable response to each statement. Demographic questions were also included in the questionnaire and were mostly dichotomous and multichotomous in nature. The questionnaire was originally developed in English and translated and retranslated several times to obtain an appropriate local language (Bangla) version. The questionnaire was pre-tested on a small sample of 30 randomly selected respondents. Minor adjustments were made to ensure conciseness, objectivity and clarity. A panel of experts concurred on the content validity of the two versions, confirming they were comparable.

Sampling and Data Collection: Investors who have average investment ranging between Tk.100,000 and Tk.1,000,000 constituted the target population for the survey. The population is homogeneous in their investment in the capital market but heterogeneous in their profession, income, gender, source of funding, and so forth. 450 questionnaires were distributed among small investors dealing with 12 randomly selected brokerage houses across the city of Dhaka. According to research protocol, respondents were asked not to identify themselves anywhere so that they could freely respond to the questions. They were also given the option to withdraw from the study or skip questions they did not wish to answer. As the respondents were educated enough to understand the questions, they filled up the questions by themselves. Altogether 323 questionnaires were collected from respondents and screened for adequate responses. A few of the respondents were found to have skipped too many questions to be worthy of data analysis, and were hence excluded. 300 questionnaires were finally retained for the research analysis.

Data Analysis: The collected data were tabulated on the computer and the final analysis was performed on statistical software. The data for the study were analysed using several statistical techniques. Frequency distributions were obtained first to check for data entry errors such as unrecognised or missing code and to obtain descriptive statistics. Two types of analyses were primarily carried out:

1. Factor analysis to check the grouping of the responses into attributes that influence investment behaviour.
2. Analysis of central tendency, and standard deviation of individual scale items to discern their individual impact on the investors’ investment behaviour and response to the performance of their investment.

IV. ANALYSIS

The perceived measures of investment behaviour were factor analysed. No solid initial structure was assumed and the data reduction technique was executed to identify factors that influenced small investors’ investment behaviour in the Dhaka Stock Exchange. The initial factor structure derived from varimax rotation extracted seven factors. Close scrutiny revealed that some of the factors were not clean, particularly when several items loaded simultaneously on more than one factor. These items along with those not appearing to be belonging to a meaningful group of items were systematically removed until the final rotated solution with 17 items was retained (Table 1) for further analysis. The final rotated solution resulted in six factors, which were easy to interpret (see Appendix A) and explained 58.34% of the cumulative variation. The six factors related to company related matters, financial analysis and predictions, risk minimisation, influence of rumors, and recent stock price changes.
Table 1: Factor Analysis (Items influencing Investment Behavior*)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Company Profile</th>
<th>Financial Information</th>
<th>Risk Minimization</th>
<th>Political &amp; Regulatory Environment</th>
<th>Rumors</th>
<th>Price Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>.760</td>
<td>.022</td>
<td>.045</td>
<td>.070</td>
<td>-.159</td>
<td>.150</td>
</tr>
<tr>
<td>Factor 2</td>
<td>.755</td>
<td>.050</td>
<td>.234</td>
<td>-.040</td>
<td>.019</td>
<td>-.060</td>
</tr>
<tr>
<td>Factor 3</td>
<td>.643</td>
<td>.184</td>
<td>-.074</td>
<td>.175</td>
<td>.262</td>
<td>.239</td>
</tr>
<tr>
<td>Factor 4</td>
<td>.548</td>
<td>.314</td>
<td>.114</td>
<td>-.023</td>
<td>.032</td>
<td>-.141</td>
</tr>
<tr>
<td>Factor 5</td>
<td>.261</td>
<td>.720</td>
<td>-.006</td>
<td>.061</td>
<td>.165</td>
<td>-.019</td>
</tr>
<tr>
<td>Factor 6</td>
<td>.216</td>
<td>.616</td>
<td>-.050</td>
<td>.181</td>
<td>.058</td>
<td>-.233</td>
</tr>
</tbody>
</table>

Table 2: Factor Analysis (Items influencing Investment Behavior*)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Eigenvalues</th>
<th>% of Variance</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.972</td>
<td>18.577</td>
<td>18.577</td>
</tr>
<tr>
<td>2</td>
<td>1.655</td>
<td>10.341</td>
<td>28.918</td>
</tr>
<tr>
<td>3</td>
<td>1.414</td>
<td>8.837</td>
<td>37.755</td>
</tr>
<tr>
<td>4</td>
<td>1.245</td>
<td>7.783</td>
<td>45.538</td>
</tr>
<tr>
<td>5</td>
<td>1.046</td>
<td>6.538</td>
<td>52.076</td>
</tr>
<tr>
<td>6</td>
<td>1.003</td>
<td>6.267</td>
<td>58.343</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 12 iterations.

Scale items reflecting the respondents’ perception of the performance of the capital market were factor analysed next. The four scale items grouped into two factors—the first factor referred to the respondents’ expectations about the future of the market while the second factor reflected their level of satisfaction about the recent performance of the market. Together they explained 68.41% of the cumulative variation (Table 2). Table 3 shows the intensity of the individual attributes that influence the investors’ investment decision and also
of their opinion about the performance of their investment. Arithmetic mean and standard deviation of each individual scale item show which considerations play the most dominant role in the selection of stocks to invest and disinvest.

<table>
<thead>
<tr>
<th>Table 2: Factor Analysis (Items reflecting perception of market performance)**</th>
<th>Future Expectations</th>
<th>Market Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The capital market will be successful in the near future</td>
<td>.884</td>
<td>-.125</td>
</tr>
<tr>
<td>You will encourage others to invest in the share market</td>
<td>.765</td>
<td>.345</td>
</tr>
<tr>
<td>You are satisfied with the current investment conditions</td>
<td>.040</td>
<td>.792</td>
</tr>
<tr>
<td>You return from the share market has been up to your expectation</td>
<td>.079</td>
<td>.775</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor</th>
<th>Eigenvalues</th>
<th>% of Variance</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.614</td>
<td>40.346</td>
<td>40.346</td>
</tr>
<tr>
<td>2</td>
<td>1.123</td>
<td>28.064</td>
<td>68.410</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Table 3: Descriptive Statistics of Scale Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scale Items</strong></td>
</tr>
<tr>
<td><strong>Items influencing Investment Behaviour</strong></td>
</tr>
<tr>
<td>Company reputation influences your investment decisions</td>
</tr>
<tr>
<td>Your investment decisions are based on the annual reports and financial statements of the companies</td>
</tr>
<tr>
<td>Your investments are based on expected future earnings of the companies</td>
</tr>
<tr>
<td>Expectations about future dividends influence your investment decisions</td>
</tr>
<tr>
<td>Political instability influences your investment decisions</td>
</tr>
<tr>
<td>You try to reduce investment risk while buying and selling shares</td>
</tr>
<tr>
<td>Changes in regulatory policy influence your investment decisions</td>
</tr>
<tr>
<td>Recent price changes of shares influence your investment decisions</td>
</tr>
<tr>
<td>You invest in such a way that losses from some shares can be fully or partly recovered from gains from the others</td>
</tr>
<tr>
<td>Your assessment of products/services produced/provided influences your investment decisions</td>
</tr>
<tr>
<td>the various interest rates (bank rate, SP rate, etc.) influence your investment decisions</td>
</tr>
<tr>
<td>You place importance to allocating enough time before mobilising funds for investment</td>
</tr>
<tr>
<td>Your understanding of the company's ethics and values influences your investment decisions</td>
</tr>
<tr>
<td>the identity of company promoters based on court decisions or media reports is important to you in making investment decisions</td>
</tr>
<tr>
<td>You consider tax implications while making your investments</td>
</tr>
<tr>
<td>You are influenced by rumours in making your investment decisions</td>
</tr>
</tbody>
</table>

| **Items reflecting perception of market performance** |
| The capital market will be successful in the near future | 3.7000 | 1.3501 |
| You will encourage others to invest in the share market | 2.9800 | 1.7037 |
| Your return from the share market has been up to your expectation | 2.0400 | 1.3207 |
| You are satisfied with the current investment conditions | 1.8167 | 1.3623 |

V. RESULTS

The study suggests that six major attributes influence small investors’ decision to invest in the Dhaka Stock Exchange (DSE). The first factor is related to the investors’ interest in the company whose stock they would be investing in. The company’s identity, reputation, ethical standards, and their products and services are all important considerations for making
investment decisions. Company reputation emerged as the most important single item considered by the investors having an average score of 4.293. The other three items under this attribute also had high scores above 3.70. The second factor—financial information—emerged as the single most important attribute to making investment decision. Table 3 shows that three of the four individual items under this attribute—financial performance based on financial reports, expected future earnings, and expected future dividends—had the second, third, and fourth highest scores with averages of 4.287, 4.263, and 4.180 respectively. The fourth item under this attribute, the returns from alternative investment opportunities such as interest rates on savings deposit and savings certificate also had a high score of 3.767. The investors’ concern for risk minimisation and diversification is reflected by the third factor. The scale item related to risk minimisation obtained an average score of 4.000 while the item related to risk diversification scored an average of 3.787. The investors also considered tax impact of investment as a way of reducing risk, which is particularly relevant in the context the stock markets in Bangladesh, where there is no tax imposed on capital gains. Strictly speaking, this element does not imply reduction in the chances of earning poor returns or losses, but it is plausible that the investors consider not giving away a significant portion of their investment returns in taxes similar to risk minimisation. Elements in the external political and regulatory environment constitute the fourth factor. Political instability scored 4.137, the fifth highest among the individual items that influence investors’ investment decision. Frequent shutdowns, demonstrations, and agitations are characteristic of Bangladesh’s political scenario, which not only impair operations of the business organisations but also create uncertainty about the performance of securities in the stock market. Frequent changes in rules and regulations (average score 3.903) with respect to transaction costs, and margin requirements also bring uncertainty in the forecast of investment returns thereby affecting the management of investment portfolio. The fifth and sixth factors involve two single item attributes namely the influence of recent price changes of securities and of rumours. The investors appear to be highly influenced by recent changes in the price of stocks with an average score of 3.853. This is a common psychology for small investors to buy when prices are rising and sell when prices are falling. Investors seem to be only moderately influenced by rumors in making their investment decisions as reflected by the average score of 3.220.

With respect to the respondents’ perception of the market performance, investors have portrayed their dissatisfaction about their investment return and the overall investment condition (average score 2.04 and 1.867 for the two scale items). However, they do not appear to be too pessimistic about the future recovery of the capital market (average score of 3.700).

V. DISCUSSION

The findings of this study provide insights to researchers who might be interested in conducting research works in the specific area, and address important policy issues for the government and the management of the capital market of Bangladesh viz., the Securities and Exchange Commission, and the administration of the two stock exchanges. The findings may also be important to other developing countries where similar operating environment as Bangladesh exists.

Further research in this particular area is needed, particularly in refining the scale items to fit more accurately to the circumstances of Bangladesh. Additional surveys may also be carried out to explore how these variables explain the investors’ perception of market performance. Findings of such work can help concerned ministries, and authorities of the capital market and the stock exchanges to reshape and revitalise these institutions to ensure superior market operations and performance.

As these results suggest, the investors give importance to classical wealth maximization criteria while making their investment decision. Their importance to company related information, financial data, risk diversification, regulatory changes information etc. suggests that they look for the right information that can help them make efficient investment decision. The mean scores on the individual scale items obtained from the study as depicted in Table 3 tell one important thing about the importance of market information to the investors. On a scale of 5, all of scale items rated above 3, the neutral point, indicating positive valence. However, the perceived performance of their investment does not exhibit reflection of proper use of these information. It is plausible that the small investors in the capital market are not intellectually equipped to effectively use the information for sound investment decision. They do not have enough theoretical knowledge to systematically analyse market and company information to pick the right stock to buy and sell, diversify risk, and manage their investment portfolio efficiently. In the absence of such analytical skill, misinterpret market trends and expose themselves to behavioral biases, which lead to inefficient and emotional investment decisions. The Securities and Exchange Commission along with professional and academic institutions can come in aid of the investors by developing training modules to equip them with the essential tools and techniques of analyzing the economy, the industry, and the companies so that they can make better judgement in the selection of stocks to invest and management of their investment portfolios.
VI. CONCLUSION

This research paper contributes to existing effort to provide a structural framework for a deeper understanding of investor behavior and the prime factors that can help them to shape effective decision making. This work provides a foundation on which further research can be developed to improve the choices and judgments of small investors, which will be important for both academician and practitioners alike.

REFERENCES


An over view of Patterns and Trends of Graduation: A Case Study

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Office of the Registrar, BRAC University
Paper ID:ICBM-17-292

Abstract- The aim of this study is to provide an over view about the graduates of BRAC University, a leading private university of Bangladesh. Graduation is a goal of students entering university with four-year degree plan in most of the universities around the world; however, changing majors, doing a double major or a minor, retaking courses or taking semester break for personal reasons may extend that plan from five to eight years. On the other hand not all of them complete their studies at the same institution as they entered. While some students transfer and complete somewhere else, others will drop out of university altogether. Another phenomenon of graduation is the Academic Performance of the graduates. This is a descriptive study based on secondary data. Expected outcomes of the study includes the patterns and trends of graduates of in terms of duration for graduation, academic performance, demographic corporatism that would be significant for university management and other stake holders, it will also open new platform of study for other public and private universities all over the world.

Keywords- Graduation, Academic Performance, Time to Degree

I. INTRODUCTION

Private Universities enroll a significant numbers of the undergraduates with a primary focus on providing access to higher education. These institutions play a significant role in the academic, social, political, and economic future of the country. Since the beginning of the private university system in Bangladesh, a four-year academic curriculum structure has been introduced by most of the private universities of the country. BRAC University, one of the leading private university of Bangladesh, also designed with a four-year academic curriculum structure and follows the North American education system.

This report presents graduation rates, their academic performance and the average time-to-degree [2] for students who graduated from BRAC University from 1st convocation to the last. The report also aimed to provide chorological statistics on student performance across departments. It is intended to complement the Retention and Graduation Update, which summarizes trends in retention and graduation rates, the academic performance of the graduates a lone with demographic overview.

Every university has objectives to make sure their students graduate on time with a minimum CGPA (grade point average) for graduation. An on-time graduation rate is considered to be four to five years depending on the degree [4]. If one wants to complete the degree in four years or less, pay attention to the on-time graduation rate, otherwise the degree could cost much more than one had originally planned both in teams of money and time.

The retention rate reflects the student body’s overall interest in the university. This figure can explain many factors that compose the attractiveness of a college, including the quality of its teaching staff, the relevance of the curriculum, and the perceived value of what is being taught.

This study consists of five sections. The next section will be addressed by Literature Review, Methodology, and Findings and Conclusion.

II. LITERATURE REVIEW

BRAC University (BRACU) one of the leading private university of Bangladesh was established in 2001. It follows a liberal arts approach to education, which nurtures fresh ideas and gives new impetus to tertiary education. It ensures a high quality of education and aims to meet the demands of contemporary times. Building on BRAC's experience of seeking solutions to challenges posed by extreme poverty, BRACU hopes to instill in its students a commitment to working towards national development and progress.

The goal of the University is to provide an excellent broad-based education with a focus on professional development for students and faculty development to ensure a dynamic teaching environment.

Currently BRACU has four schools, three institutes, ten centres and seven departments. BRACU offers nine programs at the undergraduate level, five at the graduate level and several post graduate diploma and certificate programs through these schools, institutes and departments.

Students are always eager to see what a program offers, how it is being executed, which objectives are set and which means are employed to secure the success of the program. A large number of students are enrolled in undergraduate programs every semester. The total number of students at BRACU as on 31 December 2016 was 6369 in undergraduate programs and 1043 in graduate programs. The following table shows the number
From 1st to 11th Convocation, 4609 students have graduated from 15 different undergraduate programs of BRAC University [9]. BRAC University degree process can be defined by the following model.

### III. METHODOLOGY

In this study, descriptive type of research design was applied. This study used secondary data from the BRAC University student information systems database (USIS) and convocation data. The study encompasses a ten-year period, from spring semester 2001 through fall semester 2010 and also a total of eleven convocation data. This study compares the academic performance, time to degree, retention, and graduation rates of all undergraduate programs from first to eleventh convocation.

### IV. FINDINGS AND DISCUSSIONS

The paper begins with an overview of BRAC University graduates, their academic performance, time to degree and the graduation and retention rate.

BRAC University passes 17 years of journey and conducted eleven successful convocation. Now it time to look back for how our graduates in line with the degree plan or time to degree plan. Most students enter university with a four-year plan, but changing or adding majors, retaking classes or taking time off for personal reasons can quickly extend that plan to five or even six years. University’s level of efficiency is gauged by its graduation rate [4]. Graduation rates are typically expressed as a time-to-degree measure as the percentage of students who complete their program within four to six years of entering an institution [7]. Chart 1 shows the time needed by graduates to achieve their degrees. Around 54% of our graduates complete their degree in time that is within 4 years.
Time to degree for boys and girls may vary for various reasons [6]. Chart 2 shows male vs. female total time pended for achieving their degrees.

Graduation and retention rates are considered as important measure of institutional effectiveness [7]. Both Graduation rate and Retention rate measure whether students are completing their studies and institutional effectiveness in facilitating student completion. Having a better understanding of retention and graduation rates can help students make an informed decision about their education. High graduation rates may indicate appropriately targeted student recruitment, effective campus communication and scheduling, strong instruction and advising, and accessible student support services. Other variables, such as the academic preparation of students, select the appropriate programs, student demographics and financial support, also influence graduation rates. Retention and the student enrollments can also be translated into amounts of revenue, whether from tuition and fees. Institutions are increasingly held accountable for retention rates by BOT as well as by policy makers, UGC, parents, students and other stakeholders. Chart 3 presents the retention rate and graduation rates of first 10 years students of BRAC University.

The dropout rate was very high for first few years of the university but over the years there is trend of improvement in graduation and retention rates and a decline in dropout rate. As BRAC University passes time and getting experienced the dropout rate decline significantly.

Academic achievement is an important fact to prepare students for future careers. It also allows students to enter competitive fields [2]. Academic achievement is often a sign of a refined intellect, which can help students in all areas of their lives [5]. After passing eleven successful graduated batches it’s time to look back to our graduates to get a clear picture about their academic performance. How they have performed so far along with demographic contest. Chart 4 shows the Cumulative Grade Point Average (CGPA) of all UG BRACU graduation. Among a total of 4609 UG graduates, 9% students graduated with a CGPA 3.75 to 4 in a scale of 4 and about 40% with CGPA 3 to 3.5 and that is the highest range percentage of CGPA.

The findings also show the proportion of male and female which presents very remarkable figures. Chart 5 shows the performance of female students comparing to male students.
Academic excellence is recognized in a number of ways at BRAC University. Chancellor’s Gold Medal and Vice Chancellor’s Medal, based on the cumulative grade point average (CGPA), realize for academic excellence achieved over the duration of an entire undergraduate and postgraduate career. One candidate among all Undergraduate programs with highest CGPA and One candidate among all Postgraduate programs with highest CGPA is awarded with Chancellor’s Gold Medal. Vice Chancellor’s Gold Medal is receivable to one candidate from each Undergraduate programs with highest CGPA. The medalist, both Chancellor Gold Medal and Vice Chancellor Medal, also represents girls as the best scholars of BRAC University. Up to Last Convocation 16 students were awarded Chancellor Gold Medal out of which, 14 were female and 2 were male students. Chart 6 shows the medalist of BRACU graduates.

In addition to Majors most of the departments of BRAC University offers Minor in different discipline. Students can even peruse for a second major in addition to a Major they are enrolled in. Students may prepare for their intended career with their major, while pursuing personal interests with a minor or for a second Major. While analyzing the data it was found that, the graduates of BRACU likely to be reluctant from perusing Major or Minor Concentration. Only 25 graduates out of 4609 graduates have pursued a second major in other discipline and 451 graduates have pursued a minor in other discipline. Chart 7 presents the Major and Minor Concentration variance of BRACU graduates.

Program/department wise Academic Performance was also identified form this report. Chart 8 shows the Program wise academic performance of BRACU graduates. Students from Natural Science and Social Science performing better then Engineering students. Architecture, law and Business students have average results.

V. CONCLUSION

Retention rates and graduation rates are two critical statistics parents and teens should evaluate when considering prospective university. Both are markers of how happy students are in their university, how well-supported they feel in their academic pursuits and private lives, and how likely it is that the tuition money is being well spent.

The impact of good grade has not only on the students, but on the parents and other entities interested in the
students’ achievements too. Students academic success perceive as a positive outcomes we value. Academically successful students are more likely to be employed, have stable employment, and have more employment opportunities than those with less CGPA.

Elapsed time-to-degree is the difference between the year of initial enrollment and the year of degree completion. BRAC University undergraduate programs are designed to complete the degree requirements by four years although BRACU permits eight years the total length of time for a four-year degree for undergraduate programs and ten years the total length of time for a five-year degree. On the other hand all of students complete their studies at the same institution or program as they enrolled. While some students transfer and complete somewhere else, others will drop out of university altogether.

This study would inspire other universities to conduct similar study. Some comparative studies could also be expected to be reflected.

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Factors Influencing a Woman to Maintain Work/Life Balance: An Empirical Study on Banking Industry in Bangladesh

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Abstract –

The studies of the work/life balance of women have taken high importance in the present day scenario. The present research study has certain aims to identify whether workplace practice feature do influence work/life balance and also identify the ultimate outcomes of work/life balance. This study is a casual research in nature. For data collection, a questionnaire survey of 100 executives of private bank of Dhaka district was carried out. Result discovered that family–friendly work place policies have positive influence on women professional to maintain work/life balance and rest factors flexible working hour, professional social support do not have any influence. As work/life balance outcome organizational productivity has a significant relationship but no connection with organizational commitment. This research could help researchers and practitioners in terms of improving the concept of work/life balance for women professionals in Bangladesh not only for banking industry as well as for other industries.

Keywords – Work/Life Balance, Family –Friendly Workplace policies, Flexible working hour, Professional social support, Productivity, Organizational commitment

I. INTRODUCTION

Social expectation often affects the career decision of women due to their certain household and care duties. Society treats women differently, especially in developing countries such as Bangladesh [1]. They are subjected to many different demands and are often expected to play several roles that may be conflicting. Caring for a family often means that many work/life conflicts emerge for women. Simultaneous pressures from both work and family roles can lead to work-family conflict [2]. Work/life balance is an important consequence of the professional world of both men and women [3]. However, in the present paper we are going to examine the work/life balance provision through the establishment of certain kinds of employment from the perspective of professional women of Bangladesh.

II. LITERATURE REVIEW

Work/life balance is an area of concern for organizations and individual alike [3]. The studies on work/life balance have taken a high importance in the present day scenario. Increased participation of women in the labor force creates challenges for them to balance work and family obligations [4]. Balancing work and family is often more difficult for women than for men because of the disproportionate burden of the family responsibilities [5]. Women face uneven distribution of childcare and other domestic responsibilities, which become major barriers to the advancement of their career [6]. Despite record rates of female participation in labor and progress in gender attitudes, modern Western family norms still hold women accountable for hearth and home, which makes it harder for them to advance [7]. Although having children does not change their professional orientation [8]. Women are more likely than men to amend their careers in response to parenting [9]. Consequent workforce absences and fewer years of experience undercut their advancement and earnings across occupations [10]. Work/life balance provisions are introduced to help employees reconcile what they want to do (care) with what they have to do (work) [11]. These conflicts are often intensive, and women’s response results in the reduction of employment which in turn leads to a restriction in career opportunities and advancement [1]. Various academics and authors viewed and perceived work and life differently but the definitions have given the same meaning to it as giving equal priority to work and work role. According to the Bangladesh Labor Force Survey 2010, Bangladesh is ahead of India, where women account for 27 percent of the total labor force, and Pakistan, whose female labor participation rate is 25 percent. However, recent studies show that women face more barriers in the workplace than men do in Bangladesh. Gender-related barriers involve sexual harassment; unfair hiring practices, career progression, and unequal pay where women are paid less than men are for performing the same duty. In this study, we tried to establish a framework of employment where an organization will be ensuring work/life balance provision for women.

The present research study has the following aims:

- To identify whether workplace practice features do influence work/life balance.
- To identify the ultimate outcomes of work/life balance.

III. METHODOLOGY

A questionnaire served as a data-gathering instrument. The cover page of the questionnaire described the
purpose of this study. The study is an explorative research to find the various factors that are influencing work/life balance of women in the banking industry. A convenience sample of 100 respondents was drawn from various private banks of Dhaka district. Data for the study is collected by administering a structured questionnaire. The items in the questionnaire are adopted from the literature. The questionnaire consists of two parts. The first part consists of demographic and personal information of the respondents and the second part consists of a series of statements where the respondents needed to provide answers in the form of agreement or disagreement to express their attitude towards the work/life balance construct on a 5-point Likert scale (strongly agree -5, agree-4, neutral -3, disagree-2 and strongly disagree-1). Most subjects spent between 7 to 10 minutes filling out the entire questionnaire.

Measurement of the Variables

Multi–items measures were used to get the data on the constructs considered. A total of 28 items were constructed for the questionnaire work/life balance i.e. family-friendly work place policies, flexible working hour, professional support, productivity and organizational commitment. Reliability/ internal consistency of the multi-item scales for each of the construct were measured by Cronbach coefficient alpha. The minimum acceptable reliability for any construct should be 0.70[12]. Coefficient alpha values were computed for each factor separately, which ranged from 0.609 to .727(see table -1).

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Number Of Items</th>
<th>Alpha Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work/life balance</td>
<td>5</td>
<td>.609</td>
</tr>
<tr>
<td>Family –friendly workplace policies</td>
<td>5</td>
<td>.727</td>
</tr>
<tr>
<td>Flexible working hour</td>
<td>5</td>
<td>.711</td>
</tr>
<tr>
<td>Professional social support</td>
<td>5</td>
<td>.720</td>
</tr>
<tr>
<td>Productivity</td>
<td>4</td>
<td>.702</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>4</td>
<td>.623</td>
</tr>
</tbody>
</table>

**TABLE 1** SUMMARY OF THE RELIABILITY MEASUREMENT

IV. RESULTS

The independent variables as hypothesized are listed in Table 2. The first variable is family friendly work place policies (H1) followed by flexible working hour (H2), Professional social support (H3) and productivity (H4) and organizational commitment (H5). The regression analysis of the 100 respondents and work/life balance factors are as stated in Table 2.

**TABLE 2** A REGRESSION MODEL OF FACTORS INFLUENCING TO MAINTAIN WORK/LIFE BALANCE

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Standardized Regression coefficients</th>
<th>T-Value</th>
<th>P –Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family –friendly work place policies</td>
<td>.353</td>
<td>3.232</td>
<td>.002</td>
</tr>
<tr>
<td>Flexible working hour</td>
<td>.130</td>
<td>1.261</td>
<td>.210</td>
</tr>
<tr>
<td>Professional support</td>
<td>.091</td>
<td>.637</td>
<td>.404</td>
</tr>
<tr>
<td>Productivity</td>
<td>.236</td>
<td>2.33</td>
<td>.022</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>.033</td>
<td>.342</td>
<td>.733</td>
</tr>
</tbody>
</table>

R²= 24%

H1 predicts that Family –Friendly Work place policies has positive influence on work/life balance. Table 2 shows that Family –Friendly Work place policies influences mobile users positively and significantly (β=.353, p=.002). Thus, H1 is accepted.

H2 predicts that flexible working hour has positive impact on work/life construct. Table 2 shows flexible working hour that does not influence applicants positively and significantly (β=.130, p=.210). Thus, H2 is rejected.

H3 predicts that professional social support has positive influence on work/life balance. Table 2 shows that professional social support influences applicants negatively and insignificantly (β=.091, p=.404). Thus, H3 is rejected.

H4 predicts that organizational productivity has positive influence on work/life balance. Table 2 shows that perceived reliability influences applicants positively and significantly (β=.226, p=.002). Thus, H4 is accepted.

H5 predicts that flexible working hour has positive impact on work/life construct. Table 2 shows flexible working hour that does not influence applicants positively and significantly (β=.033, p=.733). Thus, H5 is rejected.

V. DISCUSSION

While work/life balance is a multi–dimensional construct. The result of the study showed that Family –friendly work place policies have a positive relationship in the context of establishing Work/Life balance for women executive in banking industry of Bangladesh. Rest factors such as flexible working hour, professional support, and organizational commitment do not have any positive connection to maintain work/life balance. Some scholars are of the opinion that work/life balance is an individual construct and therefore should be managed at the individual level. In contrast, another set of scholars argue that it as an organizational construct and therefore require intervention from organizations [13]. Considering these
two dimensions, in this study only used organizations construct. Work/life support initiatives were found to have a positive relationship with organizational outcomes such as organizational commitment [14] and organizational productivity [15] and so on. The theoretical underpinnings of the relationships between work-family practices and employee attitudes are based on social exchange theory and the norms of reciprocity [16]. The social exchange theory suggests that employees and employers are in an exchange relationship such that when employers provide a benefit, employees will feel obligated to reciprocate in some way. In this study, surveyed respondent thought if they have good balance between work and life, productivity will increase significantly but in terms of organizational commitment does not have any effect. In this present study, respondents were unmarried 77% and their age fall between 25-30 years. Work/family conflict (WFC) tends to be lower at early and later life stages, and higher in middle life stages, when individuals are often simultaneously balancing high levels of work and family demands [17]. Researchers generally agree that, during the middle stages, an increase in career focus tends to coincide with early family development (marriage, first child, etc.), which in turn leads to an increased likelihood of WFC relative to the earlier stages[18]. Since, the R² is quite low only 25%, for exploring the work/life construct other factors such as gender equality, career advancement and retention, considering women as ideal worker etc can be analyzed.

VI. CONCLUSION

The studies of the work/life balance of women have taken high importance in the present day scenario. Whether women can “have all” in terms of high commitment career and family care responsibilities is regularly debated in popular topic internationally [19]. As a social norm it has been preferable for those women to give the first priority to their family and also expect not to try to compromise in this. A family-friendly workplace or employer is one whose policies make it possible for employees to more easily balance family and work, and to fulfill both their family and work compulsions. Family-friendly policies are, in general, part of a win-win situation: everyone involved benefits from them. They're good for children, parents, and elders; they are in the best interest of employers. Addressing these benefits, it can be entitled as a groundbreaking support for the female employees and this particular study we tried to suggest such grounds to maintain work/life balance. Work-to-family conflict was linked to job dissatisfaction, turnover intentions and stress, while family-to-work conflict was linked to stress and absenteeism [20]. Family friendly policies are fairer to employees, reflecting better than many other workplace practices. This study can shed light on the various organizations, to implement the work/life balance provision such as family-friendly work place policies to help out the female employees and make them more productive into their work.

REFERENCES


Optimal Inventory Control in Hybrid Manufacturing/Re-manufacturing Systems with Deterioration, Defective and Disposal Items

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Abstract - The study is devoted to the optimal control of a manufacturing/re-manufacturing-inventory system with defective, deterioration and disposal items. The rate of deterioration assuming follows the Gamma distribution and percentages of defective and disposal items are assuming follow the beta rectangular and Kumaraswamy distributions respectively. We developed the optimal manufacturing/re-manufacturing-inventory planning model and the optimality conditions are derived from the dynamic of the manufacturing/re-manufacturing inventory level. The explicit solution is achieved under continuous review policy using the Pontryagin maximum principle. Moreover, the results of sensitivity analysis are illustrated by the changes of the parameter values of Kumaraswamy distribution.

Keywords - Optimal Control, Manufacturing/Remanufacturing Inventory System, Deterioration Items, Defective Items, Disposal Items, Demand Functions.

I. INTRODUCTION

The dynamic of the manufacturing/re-manufacturing-inventory planning problem is of interest in the case where units of the product are defective and while in the stock, the product units are subject to deterioration. Since the quality of products depends on the computer machines used in the production process, so the manufacturing systems are faced the breakdown and consequently defective items are occurring. Moreover, defective items may happen due to material defects and there is a certain proportion of products that will be defective in any stage of manufacturing stages and these percentages will be different from one stage to another. Some of the defective items are re-manufactured and disposed of the remaining. [5] observe three stages in a product life cycle pertaining to remanufacturing. Early in a product’s life, few units are in the field, and therefore there are no returns to remanufacture. In the middle, a hopefully, longest stage of the life cycle, demand exceeds returns and the firm must manufacture and remanufacture to satisfy demand. Late in the life cycle, demand declines and returns increase, implying that the firm will not remanufacture every return. Most of the literature’s policies are not fit for the late stage. In this paper, we propose a inventory control policy with disposal, the disposal is only base on the inventory level.

At first, a continuous review policy for a production/inventory system with remanufacturing and disposal has been considered by [3]. [6] allowed for non-zero manufacturing lead times, stochastic remanufacturing lead times, and finite remanufacturing capacity. Disposal operations are not considered and the procedure to find the optimal decision parameters is approximative. In the last decade, the concept of remanufacturing has spread in many fields such as electrical equipments, cellular phones and many others for many reasons, especially economic and environmental reasons [1]. Re-manufacturing includes disassembling, cleaning, refurbishing, and reassembling parts to produce a “like new” product, such as automotive and heavy equipment. These days, many products in markets are in fact remanufactured and reused [4].

The contribution of this study is to develop an optimal inventory control model with defective, deterioration and disposal items follow Beta rectangular, Gamma and Kumaraswamy distribution respectively which, has not been studied previously. Moreover, we derive optimality conditions using the Pontryagin maximum principle suggested by [8] and in order to investigate the performance of our strategies, we give a lot of simulation result, these result also could investigate the effect of the parameter value on the manufacturing, re-manufacturing and disposal rates.

This paper is organized as follows. In the section 2, we introduce the notations and the assumptions involved of the optimal inventory control model. Here we estimate the rate functions of Gamma, Beta Rectangular and Kumaraswamy distributions. In the section 3, we derive the theoretical solutions along with the optimality conditions for the model. In the section 4, we illustrate the numerical simulation result of this manufacturing/re-manufacturing-inventory model with time-varying demand and we show the effect of the Kumaraswamy parameter value for the rates of total manufacturing, net manufacturing, re-manufacturing and disposal. In the last section, we summarize our finding and given some advice on the future research.

II. METHODOLOGY

2. Notations and Assumptions Involved In the Model

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

The following variables and parameters are used:

\( T \): The length of the planning horizon \((T > 0)\).

\( X_1(t) \): The inventory level at time \( t \) (state variable) in the first store.

\( X_2(t) \): The inventory level at time \( t \) (state variable) in the second store.

\( X_3(t) \): The inventory level at time \( t \) (state variable) in the third store.

\( U_T(t) \): Total manufacturing rate at time \( t \) (control variable).

\( U_N(t) \): Net manufacturing rate at time \( t \) (control variable).

\( U_r(t) \): Re-manufacturing rate at time \( t \) (control variable).

\( U_d(t) \): Disposal rate at time \( t \) (control variable).

\( \bar{U}_T(t) \): The total manufacturing goal rate.

\( \bar{U}_N(t) \): The net manufacturing goal rate.

\( \bar{U}_r(t) \): The re-manufacturing goal rate.

\( \bar{U}_d(t) \): The disposal goal rate.

\( D(t) \): Demand rate for the production at time \( t \).

\( \theta(t) \): The deterioration rate is according to the Gamma distribution.

\( \mu_\varphi \): The percentage of defective items according to the Beta rectangular distribution.

\( x_i, i = 1, 2, 3 \): The inventory goal levels of the first, second and third stores respectively.

\( X_i(0), i = 1, 2, 3 \): Initial inventory levels of the first, second and third stores respectively.

\( \tau \): The highest percentage of defective items.

\( h_i > 0, i = 1, 2, 3 \): A Penalty is incurred for the inventory levels to deviate from its goal levels in the first, second and third stores respectively.

\( k_T > 0 \): A Penalty is incurred for the total manufacturing rate to deviate from its goal rate.

\( k_N > 0 \): A Penalty is incurred for the net manufacturing rate to deviate from its goal rate.

\( k_r > 0 \): A Penalty is incurred for the re-manufacturing rate to deviate from its goal rate.

\( k_d > 0 \): A Penalty is incurred for the disposal rate to deviate from its goal rate.

\( \rho \): Constant non-negative (discount rate).

2.2 Assumptions

Assume that a firm can manufacture a certain product (Total production) and then put it in the first store to check a sample of product items. After that, the other product items and non-defective items (Net production) put in the second store to hedge the demand and there is some deterioration in the items which stored in the second store (Gamma deteriorating rate). The percentage of defective items is a random variable which following the Beta rectangular distribution. Third store contains the defective items which divided into the re-manufacturing items (go to the second store as new product) and disposal items which following the Kumaraswamy distribution. The demand rate varies with time. The firm has set goals for inventory levels and total manufacturing, net manufacturing, re-manufacturing and disposal rates without shortage.

2.3 Estimation of the Rate Functions

2.3.1 The Deterioration Rate follows Gamma distribution

The rate of deterioration is a random variable followed a standard Gamma distribution.

The probability density function is:

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

The cumulative distribution function is:

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

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

\[ \theta(t) = \frac{f(t)}{1-F(t)} = \frac{1}{\Gamma(\alpha)} \left[ t^{\alpha-1} \exp(-t) \right] \]

(1)

The curve of Hazard function is increased with \( \alpha > 1 \) as we see in Figure (1) and deterioration in practice is increasing with time.
2.3.2 The Percentage of Defective Items Follows Beta Rectangular Distribution

The proportion of defective items follows a Beta Rectangular distribution. The probability density function of Beta Rectangular distribution is:

$$f(t; a, \varepsilon) = \frac{ae^{au-1}}{r^{a+1}} + \frac{(1-\varepsilon)r}{2}$$

$$0 \leq t \leq r; a > 0$$

Where \( \varepsilon \) is the mixture parameter takes values between zero and one.

The rate of defective items represented by [7]:

$$\mu_p = \int_0^r \varphi f(\varphi) d\varphi = \frac{ae^{au+1}}{a+1} + \frac{(1-\varepsilon)r}{2}$$

The probability density function curve is increased when \( a > 1 \) as we see in Figure (2), that means most of the values of defective percentage is among \( \frac{r}{2} \) and \( r \).

![Fig 2. The probability density function of Beta Rectangular Distribution.](image)

2.3.3 The Percentage of Disposal Items Follows Kumaraswamy Distribution

The proportion of disposal items follows a Kumaraswamy distribution and also called double-bounded distribution which it was founded by Kumaraswamy (1980) as an alternative to the beta distribution [10]. We suppose in this section, most of the percentage of disposal items takes values between 0 and 0.5. The probability density function of Kumaraswamy distribution is [2]:

$$f(\delta; z, m) = \begin{cases} zm\delta^{z-1}(1 - \delta^z)^{m-1} & z, m > 0; 0 < \delta < 1 \\ 0 & \text{otherwise} \end{cases}$$

When \( m = 2 \), then the function become:

$$f(\delta; z) = 2z\delta^{z-1}(1 - \delta^z); 0 \leq \delta \leq 1$$

This distribution did not use previously and fits with empirical data through the curve of the probability density function (pdf) is decreasing for \( z < 1 \) as we see in figure (3), that means most of the percentage of disposal items take values between 0 and 0.5.

![Fig 3. The probability density function of Kumaraswamy Distribution.](image)

3. Model and Theoretical Solutions

3.1 Optimal Manufacturing/Re-manufacturing-Inventory Model

The optimal control for the optimization is defined by:

$$\text{Min. } J(U, X, \bar{U}) = \frac{1}{2} \int_0^T e^{-\rho t}[h_1(X_1(t) - \bar{X}_1)^2 + h_2(X_2(t) - \bar{X}_2)^2 + h_3(X_3(t) - \bar{X}_3)^2 + k_{\bar{U}}(U_\bar{U}(t) - \bar{U_\bar{U}}(t))^2 + k_N(U_N(t) - \bar{U}_N(t))^2 + k_r(U_r(t) - \bar{U}_r(t))^2 + k_\delta(U_\delta(t) - \bar{U}_\delta(t))^2 \] dt$$

Subject to the state equations of the first, second and third store as:

$$\frac{d}{dt} X_1(t) = U_\gamma(t) - U_N(t) - \mu_p X_1(t)$$

$$\frac{d}{dt} X_2(t) = U_N(t) + U_r(t) - D(t) - \theta(t)X_2(t)$$

$$\frac{d}{dt} X_3(t) = \mu_p X_1(t) + \mu_r X_2(t)$$
From equation (5), we have:

\[ U_T(t), U_Y(t), U_s(t), U_d(t), X_i(t) \geq 0; \text{ for all } t \in [0, T]; \ i = 1, 2, 3 \]  

(8)

From equation (7), we have:

\[
\frac{d}{dt} X_3(t) + \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) X_3(t) = U_T(t) - U_N(t) - U_r(t) \tag{9}
\]

Assuming that \( X_3(0) = x_3^0 \) is known and note that the re-manufacturing goal rate \( \bar{u}_r(t) \) can be computed using the state equation (9):

\[
\bar{u}_r(t) = \bar{u}_r(t) - \bar{u}_N(t) - \frac{2z}{z + 1} - \frac{2z}{2z + 1} \bar{x}_3 \tag{10}
\]

Equation (10) represents the re-manufacturing goal rate \( \bar{u}_r(t) \) that equal to the defective goal rate \( \bar{u}_r(t) - \bar{u}_N(t) \) minus the disposal items.

According to equation (3), we can suppose:

\[
\bar{u}_s(t) = \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \bar{x}_3 \tag{11}
\]

From equation (6), we have:

\[
\frac{d}{dt} X_2(t) + \left( \frac{1}{\Gamma(\alpha, \zeta)} t^{\alpha-1} \exp(-\zeta t) \right) X_2(t) = U_N(t) + U_r(t) - D(t) \tag{12}
\]

Assuming that \( X_2(0) = x_2^0 \) is known and note that the net manufacturing goal rate \( \bar{u}_N(t) \) can be computed using the state equation (12):

\[
\bar{u}_N(t) = D(t) + \left( \frac{1}{\Gamma(\alpha, \zeta)} t^{\alpha-1} \exp(-\zeta t) \right) \bar{x}_2 - \bar{u}_r(t) \tag{13}
\]

Equation (13) represents the net manufacturing goal rate \( \bar{u}_N(t) \) that's equal to the total of demand and deterioration items minus the re-manufacturing goal rate.

From equation (5), we have:

\[
\frac{d}{dt} X_1(t) + \left( \frac{\varepsilon a \tau}{a + 1} + \frac{(1 - \varepsilon) \tau}{2} \right) X_1(t) = U_T(t) - U_N(t) \tag{14}
\]

Assuming that \( X_1(0) = x_1^0 \) is known and note that the total manufacturing goal rate \( \bar{u}_T(t) \) can be computed using the state equation (14):

\[
\bar{u}_T(t) = \bar{u}_N(t) + \left( \frac{\varepsilon a \tau}{a + 1} + \frac{(1 - \varepsilon) \tau}{2} \right) \bar{x}_1 \tag{15}
\]

Equation (15) represents the total production goal rate \( \bar{u}_T(t) \) that equal to the net manufacturing goal rate minus the defective items.

Substituting equation (10) into the equation (13), we get:

\[
\bar{u}_T(t) = D(t) + \left( \frac{1}{\Gamma(\alpha, \zeta)} t^{\alpha-1} \exp(-\zeta t) \right) \bar{x}_2 + \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \bar{x}_3 \tag{16}
\]

Substituting equation (16) into the equation (15), we get:

\[
\bar{u}_N(t) = D(t) + \left( \frac{1}{\Gamma(\alpha, \zeta)} t^{\alpha-1} \exp(-\zeta t) \right) \bar{x}_2 + \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \bar{x}_3 - \left( \frac{\varepsilon a \tau}{a + 1} + \frac{(1 - \varepsilon) \tau}{2} \right) \bar{x}_1 \tag{17}
\]

Substituting equations (16 & 17) into the equation (10), we get:

\[
\bar{u}_r(t) = \left( \frac{\varepsilon a \tau}{a + 1} + \frac{(1 - \varepsilon) \tau}{2} \right) \bar{x}_1 - \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \bar{x}_3 \tag{18}
\]

**3.2 Optimality Conditions and Solution of the Model**

To solve problems by the Pontryagin maximum principle [8,9], there exists an adjoint function \( \lambda_i(t) \) such that the Hamiltonian functional form as:

\[ \text{550 | Page} \]
To obtain the control variables $U_T(t)$, $U_N(t)$, $U_r(t)$ and $U_\delta(t)$ we differentiate the Lagrange function (19) with respect to $U_T$, $U_N$, $U_r$ and $U_\delta$ respectively and putting these to equal zero:

$$U_T(t) = \hat{u}_T(t) + \frac{1}{k_T} e^{\mu t} \{ \lambda_1(t) + \lambda_3(t) \}; \quad U_T(t) \in \Omega_T(t), \ t \in [0, T]$$

$$U_N(t) = \hat{u}_N(t) + \frac{1}{k_N} e^{\mu t} \{ \lambda_2(t) - \lambda_1(t) - \lambda_3(t) \}; \quad U_N(t) \in \Omega_N(t), \ t \in [0, T]$$

$$U_r(t) = \hat{u}_r(t) + \frac{1}{k_r} e^{\mu t} \{ \lambda_2(t) - \lambda_3(t) \}; \quad U_r(t) \in \Omega_r(t), \ t \in [0, T]$$

$$U_\delta(t) = \hat{u}_\delta(t); \quad U_\delta(t) \in \Omega_\delta(t), \ t \in [0, T]$$

Where:

$\Omega_i(t) = [0, U_{max}(t)], \ i = T, N, r, \delta$

$U_{max}(t)$ is the maximum possible total production, net production, re-manufacture and disposal rates respectively.

From equations (20) through (22) and using boundary conditions $\lambda_i(T) = 0 (i = 1, 2, 3)$ we can get:

$$U_T(t) = \hat{u}_T(t); \quad U_N(t) = \hat{u}_N(t); \quad U_r(t) = \hat{u}_r(t)$$

(24)

The adjoint equation:

$$\frac{\partial}{\partial X(t)} H(t, X(t), U(t), \hat{u}(t), \lambda(t)) = - \frac{d}{dt} \lambda_i(t); \quad i = 1, 2, 3$$

(25)

Then:

$$\frac{d}{dt} \lambda_1(t) = h_1 e^{-\mu t}\{ X_1(t) - \hat{x}_1 \}$$

(26)

$$\frac{d}{dt} \lambda_2(t) = h_2 e^{-\mu t}\{ X_2(t) - \hat{x}_2 \}$$

(27)

$$\frac{d}{dt} \lambda_3(t) = h_3 e^{-\mu t}\{ X_3(t) - \hat{x}_3 \}$$

(28)

With boundary conditions $\lambda_i(T) = 0, i = 1, 2, 3$

We can put equations (20 & 21) into the state equation (5) yield:

$$\frac{d}{dt} X_1(t) = \hat{u}_T(t) + \frac{1}{k_T} e^{\mu t} \{ \lambda_1(t) + \lambda_3(t) \}$$

(29)

$$- \hat{u}_N(t)$$

(30)

$$- \frac{1}{k_N} e^{\mu t} (\lambda_2(t) - \lambda_1(t) - \lambda_3(t))$$

$$- \frac{\left( \frac{e a \tau}{a + 1} + \frac{1 - \epsilon \tau}{2} \right)}{X_1(t)}$$

Substituting equation (15) in the above equation, we get:

$$\frac{d}{dt} X_1(t) = \frac{1}{k_T} e^{\mu t} \{ \lambda_1(t) + \lambda_3(t) \}$$

$$- \frac{1}{k_N} e^{\mu t} (\lambda_2(t) - \lambda_1(t) - \lambda_3(t))$$

$$- \frac{\left( \frac{e a \tau}{a + 1} + \frac{1 - \epsilon \tau}{2} \right)}{X_1(t)}$$

$$- \hat{x}_1(29)$$

From equation (29) we have:

$$\left( \frac{1}{k_T} + \frac{1}{k_N} \right) e^{\mu t} (\lambda_1(t) + \lambda_3(t))$$

$$= \frac{d}{dt} X_1(t) + \frac{1}{k_N} e^{\mu t} \lambda_2(t)$$

$$+ \frac{\left( \frac{e a \tau}{a + 1} + \frac{1 - \epsilon \tau}{2} \right)}{X_1(t)}$$

$$- \hat{x}_1(30)$$

Substitute equations (26) through (28) in the second derivative of the equation (29), we get:
Finally, substituting the equation (30) into equation (31) to obtain:

\[
\begin{align*}
\frac{d^2}{dt^2} X_1(t) & = \left( \frac{1}{k_T} + \frac{1}{k_N} \right) h_1 + \rho \left( \frac{ea \tau}{a+1} + \frac{(1-\epsilon) \tau}{2} \right) \{X_1(t) - \hat{x}_1\} \\
& + \left( \frac{1}{k_T} + \frac{1}{k_N} \right) h_3 \{X_3(t) - \hat{x}_3\} + h_3(t) e^{\alpha t} \left( \frac{2z}{z+1} - \frac{2z}{2z+1} \right) - \frac{1}{k_N} \rho e^{\alpha t} \lambda_2(t) \\
& - \frac{1}{k_N} h_2 \{X_2(t) - \hat{x}_2\} + \lambda_2(t) e^{\alpha t} \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} \\
& + \frac{1}{k_N} \left[ h_1 \{X_1(t) - \hat{x}_1\} + \left( \frac{ea \tau}{a+1} + \frac{(1-\epsilon) \tau}{2} \right) \right] \frac{d}{dt} X_1(t)
\end{align*}
\]

(31)

Substituting equations (20 & 22) into the state equation of the second derivative of the equation (33), we get:

\[
\begin{align*}
\frac{d^2}{dt^2} X_2(t) & = \frac{1}{k_N} e^{\alpha t} \left( \lambda_2(t) - \lambda_1(t) - \lambda_3(t) \right) \\
& + \frac{1}{k_r} e^{\alpha t} \left( \lambda_2(t) - \lambda_3(t) \right) \\
& - \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} X_2(t) \\
& - \hat{x}_2 \\ (33)
\end{align*}
\]

From equation (33), we have:

\[
\begin{align*}
\left\{ \frac{1}{k_N} + \frac{1}{k_r} \right\} \rho e^{\alpha t} \{\lambda_2(t) - \lambda_3(t)\} \\
& = \frac{d}{dt} X_2(t) + \frac{1}{k_N} e^{\alpha t} \lambda_1(t) \\
& + \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} X_2(t) \\
& - \hat{x}_2 \\ (34)
\end{align*}
\]

Substitute equations (26) through (28) in the second derivative of the equation (33), we get:

\[
\begin{align*}
\frac{d^2}{dt^2} X_2(t) & = \left( \frac{1}{k_N} + \frac{1}{k_r} \right) \rho e^{\alpha t} \{\lambda_2(t) - \lambda_3(t)\} \\
& + \left( \frac{1}{k_N} + \frac{1}{k_r} \right) h_2 \{X_2(t) - \hat{x}_2\} \\
& + \lambda_2(t) e^{\alpha t} \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} \\
& - \lambda_3(t) e^{\alpha t} \left( \frac{2z}{z+1} - \frac{2z}{2z+1} \right) - \frac{1}{k_N} \rho e^{\alpha t} \lambda_1(t) \\
& - \frac{1}{k_N} h_1 \{X_1(t) - \hat{x}_1\} \\
& + \lambda_1(t) e^{\alpha t} \left\{ \frac{ea \tau}{a+1} + \frac{(1-\epsilon) \tau}{2} \right\} \\
& - \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} X_2(t) \\
& - \hat{x}_2 \left\{ \lambda_2(t) - \lambda_3(t) \right\} \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} \frac{d}{dt} X_2(t) \\
& - \hat{x}_2 \\
\end{align*}
\]

(35)

Substituting equation (34) into equation (35) to obtain:

\[
\frac{d}{dt} X_2(t) = \frac{1}{k_N} e^{\alpha t} (\lambda_2(t) - \lambda_1(t) - \lambda_3(t)) \\
+ \frac{1}{k_r} e^{\alpha t} (\lambda_2(t) - \lambda_3(t)) \\
- \left\{ \frac{1}{\Gamma(\alpha, t)} t^{\alpha-1} \exp(-t) \right\} X_2(t) \\
- \hat{x}_2 \\ (36)
\]

(36)
\[
\frac{d^2}{dt^2} X_2(t) = \left[ \left( \frac{1}{k_N} + \frac{1}{k_r} \right) h_2 + \rho \left\{ \frac{1}{\Gamma(a,t)} t^{a-1} \exp(-t) \right\} \right. \\
- \left. e^{-2t} e^{2\left( e^a - e^{-\left(-a + t + 1\right)\Gamma(a,t)} \right)} \left\{ X_2(t) - \dot{x}_2 \right\} \right] \\
+ \frac{1}{k_N} \left\{ \lambda_2(t) e^{\rho t} \left\{ \frac{1}{\Gamma(a,t)} t^{a-1} \exp(-t) \right\} \right. \\
- h_3(X_3(t) - \dot{x}_3) - \lambda_1(t) e^{\rho t} \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \\
- \frac{1}{k_N} \left\{ h_1[X_1(t) - \dot{x}_1] + \lambda_1(t) e^{\rho t} \left\{ \frac{a t}{a + 1} + \frac{(1 - e) t}{2} \right\} \right\} \\
+ \left[ \rho - \left\{ \frac{1}{\Gamma(a,t)} t^{a-1} \exp(-t) \right\} \right] \frac{d}{dt} X_2(t) \tag{36}
\]

Substituting equations (20) through (22) into the state equation of the third store (7) yield:

\[
\frac{d}{dt} X_3(t) = \dot{u}_r(t) + \frac{1}{k_T} e^{\rho t} \left\{ \lambda_1(t) + \lambda_3(t) \right\} - \ddot{u}_n(t) \\
- \frac{1}{k_N} e^{\rho t} \left\{ \lambda_2(t) - \lambda_1(t) - \lambda_3(t) \right\} \\
- \ddot{u}_r(t) \\
- \frac{1}{k_N} e^{\rho t} \left\{ \lambda_2(t) - \lambda_3(t) \right\} \\
- \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \ddot{x}_3
\]

Substituting equation (10) into the above equation yield:

\[
\frac{d}{dt} X_3(t) = \left( \frac{1}{k_N} + \frac{1}{k_r} \right) e^{\rho t} \left\{ \lambda_3(t) - \lambda_2(t) \right\} \\
+ \frac{1}{k_T} e^{\rho t} \left\{ \lambda_1(t) + \lambda_3(t) \right\} + \frac{1}{k_N} e^{\rho t} \lambda_1(t) \\
- \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \left\{ X_3(t) - \dot{x}_3 \right\} \\
- \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \frac{d}{dt} X_3(t) \tag{37}
\]

From equation (37) we have:

\[
\frac{1}{k_N} + \frac{1}{k_T} e^{\rho t} \left\{ \lambda_3(t) - \lambda_2(t) \right\} \\
= \frac{d}{dt} X_3(t) - \frac{1}{k_T} e^{\rho t} \left\{ \lambda_1(t) + \lambda_3(t) \right\} - \frac{1}{k_N} e^{\rho t} \lambda_1(t) \\
+ \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \left\{ X_3(t) - \dot{x}_3 \right\} \tag{38}
\]

Substitute equations (26) through (28) in the second derivative of the equation (37), we get:

\[
\frac{d^2}{dt^2} X_3(t) = \left( \frac{1}{k_N} + \frac{1}{k_r} \right) \rho e^{\rho t} \left\{ \lambda_3(t) + \lambda_2(t) \right\} \\
+ \frac{1}{k_N} + \frac{1}{k_r} \left\{ h_3(X_3(t) - \dot{x}_3) + \lambda_3(t) e^{\rho t} \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \\
- h_2(X_2(t) - \dot{x}_2) - \lambda_2(t) e^{\rho t} \left\{ \frac{1}{\Gamma(a,t)} t^{a-1} \exp(-t) \right\} \right\} \\
+ \frac{1}{k_T} \rho e^{\rho t} \lambda_1(t) \\
+ \frac{1}{k_N} \left\{ h_1[X_1(t) - \dot{x}_1] + \lambda_1(t) e^{\rho t} \left\{ \frac{a t}{a + 1} + \frac{(1 - e) t}{2} \right\} \right\} \\
- \lambda_1(t) e^{\rho t} \left( \frac{a t}{a + 1} + \frac{(1 - e) t}{2} \right) \\
- \left( \frac{2z}{z + 1} - \frac{2z}{2z + 1} \right) \frac{d}{dt} X_3(t) \tag{39}
\]

Finally, substituting the equation (38) into equation (39) to obtain:
By using MatLab, we find the solution of the system:}

![Graph showing inventory levels](image)

The Figure (4) and Table (1) are shown the optimal inventory levels in the three stores are converging to their goals for two parameter values of the Kumaraswamy distribution.

### Table (1)

<table>
<thead>
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<th>x₂</th>
<th>x₃</th>
<th>x₁</th>
<th>x₂</th>
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<td>10</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
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<td>19.8636</td>
</tr>
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<td>29.9682</td>
<td>19.9409</td>
<td>40.129</td>
<td>29.9756</td>
<td>19.9558</td>
</tr>
</tbody>
</table>

### 4. Numerical Solution and Sensitivity Analysis

#### 4.1 Numerical solution

In this subsection, we present and illustrate the solutions of optimal control of manufacturing/re-manufacturing-inventory model with time-varying demand numerically. Consider an inventory system with the following parameter values in proper units:

\[ T = 9; \rho = 0.001; k = 3; h₁ = 1; h₂ = 2; h₃ = 3; k₁ = 2; k₂ = 3; k₃ = 4; α = 3; α = 6; \tau = 0.4; \epsilon = 0.3; \bar{xe}_1 = 40; \bar{xe}_2 = 30; \bar{xe}_3 = 20; x₁^0 = 30; x₂^0 = 20; x₃^0 = 10 \]

The numerical solution of the system is discussed for three different types of demand rates which are:

1. An increasing function \( D(t) = 30 + 5t \).
2. A decreasing function \( D(t) = 50 - 2t \).
3. A fluctuating function \( D(t) = 10[3 + \cos(e^{0.5t})] \)
From Figures (5, 6&7), we deduce the optimal total manufacturing, net manufacturing and re-manufacturing rates are converging to their goals for different kinds of the demand. In addition to the convergence for both net manufacturing and re-manufacturing rates are better than the total manufacturing rate in the beginning of the planning period.

4.2 Sensitivity Analysis

In this subsection, we show the effect of the Kumaraswamy parameter value on the rates of total manufacturing, net manufacturing, re-manufacturing and disposal.

From Table (2), we deduce the increasing in the Kumaraswamy parameter value by 100% leading to:
1. Increasing at the total manufacturing rate by 2.34% at the end of the planning period.
2. Increasing at the net manufacturing rate by 2.6% at the end of the planning period.
3. Increasing at the disposal rate by 11.8% and decreasing in the re-manufacturing rate by the same percentage.

According to the results, the model reached to its goals from the beginning of the planning period so that the inventory levels of three stores reached to their goals. The model so efficient for different kinds of demand rate and there are controlled on the rates of manufacturing and re-manufacturing to hedge demand and provide the safety stock. Kumaraswamy parameter value has an effect on the disposal rate and thus the re-manufacturing rate is affected because there is an inverse relation between the rates of disposal and re-manufacturing. However, the total disposal and re-manufacturing items equal to defective items in all cases.

V. CONCLUSION

We studied an optimal manufacturing/re-manufacturing-inventory control model with defective, deterioration and disposal items and derive the explicit solution of the model using the Pontryagin maximum principle. The simulation and sensitivity analysis results are illustrated numerically for the optimal control model with different demand patterns. According to those results, the optimal manufacturing and disposal rates increase with increasing on the value of Kumaraswamy. In contrast, the re-manufacturing rate decrease for the same reason. It can be recommended using this model in the industry that includes a high percentage of defective items and needs a large quantity of safety stock. The model can be discussed by other probability distributions addition to other parameter values and demand rates.
REFERENCES

The Effects of Relationship Marketing on Firm Performance: Small and Medium Enterprises (SMEs) in Bangladesh

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Abstract - Today’s entrepreneurial global economy, it is essential to acquisition and retention of customers for the survival of SMEs. Relationship Marketing (RM) is among the best marketing strategy that the SMEs should adopt since customer buying decisions do not solely based on the quality and price, but also depending on their relationship with the firm. This study aimed to empirically investigate the effects of RM on the SME Performance. A self-administered questionnaire with 22 measuring items was used in data collection. The respondents were selected randomly from the list of active SMEs in Bangladesh. A total of 384 completed and usable questionnaires were received. The study employed the IBM-SPSS-AMOS package 21.0 to analyze data and test the underlying hypothesis. The study found RM has positive and significant effects on SME Performance. Consequently, the findings suggested that there is a dire need for SMEs to concentrate on RM strategy to boost their financial performance, and hence their long term survival.

Keywords - Relationship marketing (RM), small and medium enterprises (SMEs), analysis of moment structure (AMOS)

I. INTRODUCTION

SMEs are one of the crucial ways to economic self-reliance of many countries [1] and the major role of SMEs are: employment generation, embarking on innovation, immense to alleviate the poverty of the countries, social stability and economic welfare of the countries [2],[3],[4],[5],[6]. Consequently, SME sector is an eventual part of an economy and measured as a dynamic application of economic growth of Bangladesh. The government of Bangladesh has acknowledged the SMEs as a priority sector to achieve prompt economic growth and also to reinforce the process of industrialization. As a result, SMEs have come to the lead of Bangladeshi economic activities, though Bangladeshi SMEs have been facing multifarious problems related to resources and finance, marketing strategy, transportation, environment, and technical & technological know-how [7]. Hence, adopting relationship marketing as an underpinning of strategic marketing is necessary to minimize economic problems by acquisition and retention of customers and to cope up with rapidly evolving environments of competition all over the entrepreneurial world economy. So, to explore the upshot or effect of relationship marketing on firm performance of SMEs in Bangladesh is the objective of the study.

II. BACKGROUND OF THE STUDY

In fact, SMEs, which can act as the engine of growth shortly of Bangladesh, becomes more challenging due to lack of proper marketing, and appropriate entrepreneurial behavior in the arena of Globalization [8]. Consequently, RM is vital for a firm’s better performance [9],[10],[11],[12] and enduring success in the current extremely competitive business environment according to an anecdotal observation of the researcher. Hence, the adoption of the RM concept is essential for the survival of SMEs in the competitive environment, which is argued by the several researchers [13],[14].

Despite the importance of RM in the entrepreneurial world economy, the need for investigation of RM’s effect on firm’s performance is still ignored by researchers in the developing countries. As far as this researcher is aware very few exertions have been taken to work on the effect of RM on SME’s performance comprehensively in a developing country. Since Bangladesh has been chosen for the study among the developing countries, the literature analysis indicates that very limited research has been attempted in Bangladesh to see the effect of relationship marketing concept leads to better firm’s performance of SMEs or not to date.

III. LITERATURE REVIEW

Relationship Marketing (RM) - Many researchers describe the idea of relationship marketing over different concepts and variables. Still, they do not provide a standard definition of RM. There are some similarities in their definition however they are expressed it in unique ways from one academic to another. The RM concept, for the first time was shared in an American literature in berry article, 1983 [9]. According to Berry [9], RM indicates building and continuing a relationship with the client through charismatic activities. Berry’s definition [9] acted as a foundation for many scholars who accomplished their research in this approach. In fact, the definitions are given by Gronroos; Morgan; Sheth&Parvatiyar; Gummesson; Wilson; are all inspired by Berry’s definition of RM. These definitions highlighted the fact that exchange relationship should be successfully performed to gain better business performance. Moreover, according to Sheth&Parvatiyar, [15] & Ivens [16] the relationship marketing ought to generate value for both
connected groups or individuals through the exchange. However, some academics concentrated on the point that the relationship is not restricted to the relationship between the company and the client, but also concern the company and all its stakeholders [11], [14], [17], [18], and according to Gronroos [17], Morgan [11], Perrien [19], Wilson [20], Benamour [18], Sin [21], RM is keen to consolidate the network of relationships on an ongoing process where the objectives achieved.

In this study, empathy trust, communication, bonding, shared value, and reciprocity, these six are taken into consideration as dimensions of relationship marketing based on Sin [21]. Trust indicates the level of prospect of long-term survival of the relationship between buyer and seller [21]. Commitment indicates determination and intention to sustain relation with other side [22]. Communication directs completely formal and informal contacts which precede to exchange of meaningful and pertinent information among buyers and sellers [11]. Empathy is an essential stipulation to foster an optimistic relationship between buyer and sellers [21]. Shared value is defined as the degree to which partners have mutual views about policies, behaviors, and goals are suitable or unsuitable, right or wrong and significant or insignificant [11]. And reciprocity is the element of a business relationship which causes either side to provide supports for the other in return for similar supports or favors at a later date [23].

Firm’s Performance (FP)- Firm performance refers to the firm’s valuable results in terms of efficiency of investment, market share, growth and returns produced by taking a complex series of actions that integrate skills and knowledge. So it might also be defined as the capability of the firm in generating admirable profit. According to Trkman [24], irrespective of the small or large firm, FP assessment is extremely important to supervise the achievement of the firm so as to take appropriate steps to confirm competitive advantage. Through analyzing FP, a firm can recognize its position in terms of strong as well as weak points. The aim of FP assessment is to improve the result in relations of pursuing new opportunities internally or externally, redesigning better strategies or action plans, obtaining overall firm’s performance and capabilities improvements, and gaining justifiable growth in the long run.

Instruments for determining FP have always been contentious among studies as there is a lack of universal tools for measuring it. Several researchers used growth of the firm to assess FP [25], [26]. They claimed that determining FP through the growth of the firm’s growth is more reasonable and exact than any other accounting or financial measurement. Wiklund [27] mentioned that FP involves in determining the growth and profit of the firm. As a result, counting only one measurement approach is insufficient for FP measurement. Hence, there is a prerequisite for non-monetary performance measurements [28], [29]. This research applied growth and profitability both for measurement of firm performance.

The relationship between SMEs Performance and Relationship marketing has been researched exhaustively, and previous researches presented above leads to the formation of the following hypothesis:

Hypothesis H1: There will be a significant effect of RM on FP.

IV. CONCEPTUAL MODEL

On the proposed model, trust, bonding, shared value, empathy and reciprocity which are six dimensions of relationship marketing and RM used as independent variables or as exogenous Construct in this research. On the right side of the model firm’s performance is placed as dependent variables or used as endogenous Construct.

Fig. 1: Proposed framework

V. METHODOLOGY

In order to ensure adequate and relevant data to facilitate for effective research work, data related to this research work was primarily sourced. Random sample is used of actively performing SMEs in Bangladesh. Krejcie & Morgan endorsed that the anticipated samples for this research should be 384 samples considering the population of 6 million active SMEs in Bangladesh.

The study employed Structural Equation Modeling (SEM) using IBM-SPSS-AMOS 21.0 Software for data analysis. Prior to field study, the Pilot Study data were collected from 100 respondents and the Exploratory Factor Analysis (EFA) procedure was conducted to assess the items and their respective dimensions [30]. The EFA is important to assess the internal reliability of the instruments prior to data collection in field study [30],
VI. MEASURES OF FIRM PERFORMANCE

The study adapted and customized the items for measuring Firm’s Performance based on profitability and growth. The items were adapted from the work of Santos and Brito [34] and implement four (4) modified and customized items grouped into two (2) dimensions namely Profitability and Growth. This study employed an interval scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). The interval scale was used in order to meet the stringent requirement for employing parametric statistical analysis [33].

VII. MEASURES OF RELATIONSHIP MARKETING

This study adopted and customized the Relationship Marketing items from the work of Sin [21]. This study customized the existing items accordingly to suit the characteristics of SMEs. On the basis of that, this study has employed a total of 18 items to measure RM as a construct. The Relationship Marketing (RM) construct consist of six dimensions namely, Trust, Bonding, Communication, Shared Value, Empathy, and Reciprocity. The RM construct, its components and their respective measuring items is shown in Figure 2. This study also applied an interval scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) in order to suit the scale requirement for employing the parametric statistical analysis.

VIII. RELIABILITY AND VALIDITY OF THE STUDY

In this study, the reliability and validity assessment were used to validate the measurement model of latent constructs. Unidimensionality is achieved when the factor loading of the items are positive and achieved the minimum value of 0.60 [32]. When the Cronbach’s Alpha for both constructs, namely Relationship Marketing and Firm Performance is achieved the minimum value of 0.70, then the internal reliability is achieved.

Construct Validity is accessed using the fitness indexes, Convergent Validity is assessed using Average Variance Extracted, (AVE) and Discriminant Validity is assessed using Discriminant Validity Index Summary [32]. The Construct Reliability is assessed through computing the Average Variance Extracted (AVE>0.5) and Composite Reliability (CR>0.6) [32]. There are three categories of model fit where the fitness indexes of a measurement model need to achieve namely, Absolute Fit, Incremental Fit and Parsimonious Fit [31], [32], [33].

IX. RESULTS OF FACTOR ANALYSIS

Measurement Model - The measurement model, comprises the factor loading of each item with R² for every construct of the model. Figure 2 shows the fitness indexes of the measurement model of this study.

![Fig. 2: Measurement Model with Fitness Indexes](image)

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<tr>
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<td>Re3</td>
</tr>
<tr>
<td>FP</td>
<td>G1</td>
</tr>
<tr>
<td></td>
<td>G2</td>
</tr>
<tr>
<td></td>
<td>P1</td>
</tr>
<tr>
<td></td>
<td>P2</td>
</tr>
</tbody>
</table>
Table I indicates that the items and factor loading of two constructs that comprise of both Relationship Marketing and Firm’s Performance in Figure 2. Table I also shows that all the items are having factor loading value above the cut-off point of 0.60. Hence, this study achieved the unidimensionality for the construct and can proceed for further analysis [32], [33].

### TABLE II
**ACHIEVED FITNESS INDEXES OF THE STUDY**

<table>
<thead>
<tr>
<th>Category Name</th>
<th>Index Name</th>
<th>Index Value</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute fit</td>
<td>RMSEA</td>
<td>0.077</td>
<td>Fitness Level</td>
</tr>
<tr>
<td>Incremental fit</td>
<td>CFI</td>
<td>0.917</td>
<td>Fitness Level</td>
</tr>
<tr>
<td>Parsimonious fit</td>
<td>Chisq/Df</td>
<td>3.277</td>
<td>Fitness Level</td>
</tr>
</tbody>
</table>

Table II shows the fitness indexes of the measurement model. All Fitness Indexes (RMSEA = 0.077, CFI = 0.917, TLI = 0.904, IFI = 0.917 and Chisq/df = 3.277) of the measurement model signifies a satisfactory fit to the data and result of all indexes was good. Hence, this study achieved the construct validity [32], [33].

### TABLE III
**CFA RESULT**

<table>
<thead>
<tr>
<th>Construct &amp; Component</th>
<th>Items</th>
<th>Item Factor Loading</th>
<th>CR (above 0.6)</th>
<th>AVE (above 0.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship Marketing</td>
<td>Bonding</td>
<td>.73</td>
<td>.901</td>
<td>.606</td>
</tr>
<tr>
<td></td>
<td>Trust</td>
<td>.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shared Value</td>
<td>.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication</td>
<td>.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reciprocity</td>
<td>.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonding</td>
<td>B1</td>
<td>.72</td>
<td>.896</td>
<td>.743</td>
</tr>
<tr>
<td></td>
<td>B2</td>
<td>.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B3</td>
<td>.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>T1</td>
<td>.85</td>
<td>.923</td>
<td>.800</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared Value</td>
<td>SV1</td>
<td>.65</td>
<td>.754</td>
<td>.507</td>
</tr>
<tr>
<td></td>
<td>SV2</td>
<td>.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SV3</td>
<td>.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>C1</td>
<td>.64</td>
<td>.860</td>
<td>.677</td>
</tr>
<tr>
<td></td>
<td>C2</td>
<td>.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C3</td>
<td>.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empathy</td>
<td>Em1</td>
<td>.72</td>
<td>.764</td>
<td>.521</td>
</tr>
<tr>
<td></td>
<td>Em2</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Em3</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reciprocity</td>
<td>Re1</td>
<td>.71</td>
<td>.837</td>
<td>.633</td>
</tr>
<tr>
<td></td>
<td>Re2</td>
<td>.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Re3</td>
<td>.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm’s Performance</td>
<td>Growth</td>
<td>.95</td>
<td>.959</td>
<td>.922</td>
</tr>
<tr>
<td></td>
<td>Profit</td>
<td>.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth</td>
<td>G1</td>
<td>.84</td>
<td>.701</td>
<td>.545</td>
</tr>
<tr>
<td></td>
<td>G2</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P1</td>
<td>.72</td>
<td>.758</td>
<td>.612</td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>.84</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table III displays that CR and AVE for the constructs are achieved since their values are above the threshold of 0.6 and 0.5 respectively. Hence, this study achieved the convergent validity and reliability and can proceed for further analysis as the measurement model is valid and fit [32], [33].

### X. STRUCTURAL EQUATION MODELING (SEM)

#### TABLE IV
**SQUARED MULTIPLE CORRELATIONS (R²)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate (R²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Performance (FP)</td>
<td>0.531</td>
</tr>
</tbody>
</table>

The above Table IV indicates that the predictor of firm’s performance explains 53.1% of its variance. In other arguments, the error variance of firm’s performance is about 46.9% of the variance of firm’s performance.

#### TABLE V
**STANDARDIZED REGRESSION WEIGHTS OF RM ON FP**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Path</th>
<th>Variable</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP</td>
<td>←</td>
<td>RM</td>
<td>0.729</td>
</tr>
</tbody>
</table>

Table V shows that the influence of relationship marketing on firm’s performance was 72.9% while 27.1% does not influence firm’s performance.

---

Fig. 3: Regression Path Coefficient
The regression weight indicates the estimate of the beta coefficient that measures the effects of the exogenous construct on the endogenous construct.

**TABLE VI**

<table>
<thead>
<tr>
<th>Variable</th>
<th>RP</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP</td>
<td>RM</td>
<td>1.337</td>
<td>0.140</td>
<td>9.548</td>
<td>***</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Note: *** P<0.01

The hypothesis of this study was spelt out as: RP has a positive and significant effect on FP for SMEs in Bangladesh. The result in Table VI shows that the level of significance for regression weight indicates that the probability of getting a CR as large as 9.548 in absolute value is 0.001. In other words, the effect of RM on FP of the SMEs is highly significant. Consequently, the beta coefficient for the effect of RM on FP was 1.337, which means that for each unit increase in Relationship Marketing, Firm’s Performance increases by 1.337. Therefore, the hypothesis was supported. Hence, this research suggested that there is a straightforward need for entrepreneurs to implement relationship marketing strategy in their business for better firm’s performance and to help in the national GDP of Bangladesh through consistent growth by implementing RM strategy.

XI. CONCLUSION

This study scrutinizes how RM can influence the FP of SMEs in Bangladesh. The momentous conclusion from this study is that RM has a positive and highly significant effect on FP. Hence, it can be resolute that RM can upshot the success and survival of the SMEs. Further, study on RM strategy implementation could provide information as to what type of marketing strategy implementation is desired to enhance and to maintain firm performances of Bangladesh. Although this study confirmed the role RM as an important aspect of organizational strategy, additional research is desired to refine the understanding of this critical dimension. To determine other measures of SMEs performance and integrate them into RM model, other research is also required. Scholars can conduct more research from other facets of RM as to see how firms can make a more suitable strategy in winning the rivalry with other business in the entrepreneurial world economy.

REFERENCES


A Practical Study on implementing Green Supply Chain in Printing Industry

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Abstract - The observed study which based on primary and secondary data represents the different channels of supply chain in printing industry of Bangladesh and how Green Supply Chain can be implemented in printing industry. Since last decade Supply Chain Management (SCM) has become a critical factor in maintaining one of the major competitive advantages of an organization. This research represents the supply chain model of the printing industry and the demonstration of Green Supply Chain (GSC) strategies. This paper, which was based on the interview research technique, also presents comparisons between practiced supply chain model with the view to understand better how developing countries can focus on more eco-friendly way. Consequently, the authors defined some recommendations that would create further dimensions for policy makers of the printing industry. The study addresses the SCM model of one of the best Newspapers in Bangladesh named Prothom Alo. The specific objectives of the study are to: i) determine the strategies followed during process of printing, ii) identify different distribution channels and communication process in printing industry, and iii) determine the relation between sales and supply chain of printing industry. The study reveals that how wastages can be minimized and how green supply chain can be introduced.

Keywords - Supply chain, printing industry, green supply chain, distribution and communication channel in printing industry

I. INTRODUCTION

This paper analyzes how printing industry process the production and distribute the final product along different channels of supply chain and demonstrates how the GSC can be introduced in existing supply chain and estimated some useful information about GSC to policy makers for formulating policies related to the concerned newspaper production and distribution. The supply chain traditionally defined as a one-way, integrated manufacturing process wherein raw materials are converted into final products, then delivered to customers (Benita M. Beamon[1]). But gradually it changes its dimensions. A supply chain is a network of facilities and distribution entities (Suppliers, manufacturers, distributor, retailers) that performs the function of procurement of raw materials, transformation of raw materials into intermediate and finished products and distribution of finished products to customers (Habib, Md. Mamun [2]). All stages involved, directly or indirectly, in fulfilling a customer request includes manufacturers, suppliers, transporters, warehouses, retailers, and customers for Manufacturing Industries. The main purpose of the supply chain is to maximize overall value generated. SCM engages the management of flows between and among stages in a supply chain to minimize total cost (Habib, Mamun [9]).

GSC impact at different dimension of supply and chain to make it environmentally sustainable, in this paper we will be focusing on that component of a sustainable supply chain those are have to be maintained during production and distribution process.

II. METHODOLOGY

The analysis of this research is based on primary data, i.e. interview, and secondary data, including online databases, digital libraries, books, journals, Conference papers, etc. Extensive SCM, GSCM research papers of academicians and practitioners are evolved from renowned international journals namely PROQUEST, EMERALD, EBSCO, IEEE, ACM, JSTOR, Science Direct, etc.

III. RESULTS

A. Basic Operation of Newspaper

SCM is a concept whose primary objective is to integrate and manage the sourcing, flow and control of materials using a total systems perspective across multiple functions and multiple tiers of suppliers (Monczka Robert, Robert Trent, Robert Handfield[3]).

Newspaper basically consists of two things; news and advertisements. News is the life of newspaper whereas advertisement is the main source of revenue. The demand of newspaper has been generated by Circulation Sales Department. After the news & advertisement are extracted from various sources, these have been pasted at selected & systematic order to make PDF file and send to CTP. The rest of the operation has been considered as Supply chain of newspaper which goes through following stages.

First stage is Supply Chain planning. This stage includes demand analysis, PPIC, MRP, Logistic planning, SRM & CRM and financial analysis.

Second stage is procuring process. This stage undertakes the following process; Newsprint, Newspaper, chemicals solvents, and other accessories.

After procuring process it goes through press operation stage. Press operation undertakes the following
processes. Plate making, newspaper loading, print operation, quality operation, housekeeping, and EH&S operations.

After press operation it goes to package operation. In this stage it goes to processes like, handling, inserting, counting, binding, package design and storage.

Last stage is the distribution operation. At this stage, transport mode, Timing, location and handling are looked after.

B. SCM Organogram of ProthomAlo

Supply chain department of ProthomAlo consists of 3 major departments, one is Sourcing and other 2 is Production & Distribution.

Sourcing has been done centrally from H/O in Dhaka to procure different RM in collaboration of Accounts & Finance department. ProthomAlo has 3 different production facilities; Dhaka, Bogra and Chittagong from where newspaper has been distributed to the whole country.

The Production department has been divided into 4 different sections; Security, Quality, Administration & Production. The major role of security section is to secure the whole press operation from inner & outer threat. The major role of Quality section is to ensure the quality of the product. The major role of Administration section is to establish organization norm and control the discipline & punctuality of the employees. The major role of Production section is to control whole operation of transformation.

The distribution department is categorized further process; Inventory & Transportation. The major role of inventory section is to ensure the quantity of newspaper that has been distributed according to the demand. The Major role of Transportation section is to ensure the delivery of newspaper to a particular place at a specific time.
C. SCM Process Step of ProthomAlo

Procurement operation:
Procurement operation consists of 7 different tasks; Planning, Supplier scoring & assessment, Supplier selection, Supplier negotiation, Design collaboration, Purchasing & Sourcing planning. The procurement operation is linked with Accounts & Finance department. The planning of procurement has been done according to the yearly forecasting of Circulation Sales department. Then it converts to the aggregate planning. As warehouse operation is under the Accounts & Finance department, so according to the demand the material requisition has been sent to the warehouse and from warehouse the entire RM has been sent to the production floor.

Press and packaging operation:
The Press operation is started with receiving PDF file from news room through CTP. Then it converts to the positive and adjusts with the web machine. Before going to the production, the machine parameter has been checked to reduce the machine break down time. The production planning & control decide the quantity of production of each web machine according to the demand and also monitor the overall production process. The quality team checks the quality of the product until the production has been finished. Without passed of Quality team, any single product cannot be distributed. After approved by Quality team, the product goes to the counting & binding section to bind the product according to the label & Challan. Then it is subjected to the dispatch section. The dispatch section stick the label with the bundle and load in transport vehicle according to the challan.

Distribution and transportation operation:
This operation is started with dispatch section. After binding, the bundle it is subjected to the dispatch section. The dispatch section sticks the label with the bundle and load in approved transport vehicle according to the challan. There are 81 routes for distribution and each transport vehicle has been dedicated for each route to deliver the product in right place at a right time.

D. Green Supply Chain:

GSCM (Green Supply Chain Management) recently emerged as an effective management tool and philosophy for proactive manufacturing organizations. Main philosophy of GSCM is to reduce environmental risks while improving ecological efficiency of the organization. It is important for creating environment friendly world and get optimum scale of resource utilization. In printing industry we use chemicals, papers and other different items which can contaminate the environment. Application of GSCM in the printing industry will give an environment friendly working process. This paper will focus on that.

We can ensure green supply chain in printing media industry by following ways:

- Raw Material Collection should be done from environment friendly companies. Purchase paper from those companies which are good at recycling and ensures that the numbers of trees cut down for paper producing as same as their tree plantation.
- Not to use any material which are not earth consumable.
- When chemicals are stored it has to make sure that chemicals are not expose to outside environment and water.
- The wastage are distributed in environment friendly way.
- Manufacturing facility should be designed as a way which is maximum production and energy efficient.
- A non-Freon air conditioning system efficiently cools the facility.
- Trees surrounding the facility naturally lower internal heat by as much as 10%.
- All wasted products should be recycled
- Alcohol solvents or harsh chemicals should not be used in the manufacturing process.
- Cleaning facility with environmentally friendly bio-cleansers and enzymes instead of chemicals.
- Environmental burden can be reduced at the distribution stage of products in addition to manufacturing stages.
- During distribution CO2 emissions should be reduced by using efficient transportation and to reduce waste through using less packaging materials.
- For distribution the product low-pollution, high-efficiency, eco-friendly vehicles can be used.

By ensuring GSC in printing media, we not only increase financial benefit through enhancing productivity, improving quality, reducing waste & decreasing handling expense but also achieve corporate environmental goals and improve public
image that not only essential but also inevitable for business sustainability.

E. Conceptual Model:

Figure-7: Conceptual Model using GSC
Green Procurement is defined as a set of supply side practices utilized by an organization to effectively select suppliers based on their environmental competence, technical & eco-design capability, environmental performance, ability to develop environmental friendly goods and ability to support focal company’s environmental objectives. Furthermore, the 3Rs’: Reuse, Recycle & Reduce in the process of green procurement in terms of paper and parts container, place purchasing order by email (paperless), use eco labeling of products and ensure supplier’s environmental certification [4].

Green manufacturing is a production process which converts input into output by reducing hazardous substances, increasing energy efficiency in lighting and heating, practicing 3RS and minimizing wastage[4], [5], [6].

Green distribution consists of green packaging with the aims to use green packing materials, promote recycling & reuse program, minimize material uses & time to unpack, use recyclable pallet system and save energy in warehouse[4], [5], [6], [7].

Green Logistics is about delivering goods directly to the user site, using alternative fuel vehicles and planning for short way of vehicles route[4].

F. Recommendations
- Analyze the environmental impact of printing plant- Air, water, soil & noise
- Evaluate the carbon footprint of printing plant
- Measure the environmental efficiency of plant through eKPIs
- Identify to reduce environmental impact

IV. DISCUSSION

By analyzing environmental impact, green procurement has been introduced in ProthomAlol in order to enhance the environmental sustainability and sustainable forest management which contributes positively to tackling societal challenges such as climate change, poverty alleviation, water management issues & biodiversity loss.

Carbon footprint has been reduced in ProthomAlol by using, new & efficient transportation. To reduce the emission of carbon, the routes of transportation has been changed and to reduce waste through using less packaging materials. This not only adds value to the influence economic performance but also helps environmental and social sustainability.

We can measure environmental efficiency of plant based on wastage generation. The less the wastage generation, the less the operational cost and the environmental efficiency will be high. Environmental efficiency has been improved in ProthomAlol by:
- Reduce the consumption of energy by improving the operation efficiency, introducing energy saving lights, seal all the energy leakages and practicing 3Rs.
- Increasing the paper efficiency by reducing the paper wastage through implementing standard organogram of the department and different SOP, QSP, SPC etc.
- Reduce the ink, developer, washing solvent, dampening solution, water, PE & liquid waste consumption by reducing bad printing wastage, unusual wastage, over printing wastage.

V. CONCLUSION

Based on the literature review, undoubtedly, GSCM and sustainability performance are two inextricably related SCM concepts and ProthomAlol do follow that not only for its business sustainability but also for its societal and environmental commitment. In view of this matter, environmental collaboration has been considered as a moderator of the link between GSCM practices and sustainability performance in this paper. It is also seen that how green supply chain can reduce the operational cost by reducing the waste, reuse and recycle. In conclusion, the model[8] may be helpful to some extent; especially ProthomAlol is financially benefited by applying the model in its Supply chain operation.

REFERENCES


Factors Affecting the Adaptation of Online Shopping: A Study on Young Consumers in Dhaka City.

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Abstract - The Internet is considered as global communication medium which is progressively being used internationally as the most essential tool for every business. At the beginning of 2016, Internet users in Bangladesh reached approx. 62 million. Nevertheless, online shopping in Bangladesh is not extensively practiced but organizations are investing in B2C online shopping, so the prerequisite is to understand the factors that move Bangladeshi consumers’ online buying behavior. This research cultivates a theoretical research model as a framework to identify the key resulting issues influencing Bangladeshi consumers' to shop or not to shop online. A self-administered questionnaire was used to collect information from 149 respondents in Dhaka, Bangladesh. The experiential analysis identifies significant decision factors such as: Price, Service quality & Responsiveness, Consumer resource, Perceive risk, Trialability & Generation gap, Website factor, Payment Process, Demographic. All of these decision factors impact on Bangladeshi consumers' adoption of online shopping. Additionally, decision-making suggestions and recommendations are also described here.

Keywords - Online shopping, online buying behavior, theoretical research model, experiential analysis identifies decision factors, decision-making suggestions and recommendations.

I. INTRODUCTION

Online shopping has started getting popular in Bangladesh as the number of internet subscriber is increasing day by day. According to [3], the total number of Internet Subscribers has reached 61.288 million at the end of March, 2016. However, there is a huge gap between the developed and developing country’s consumer behavior on online shopping as in developing country, the availability of internet and other resource in less than developed country. Many previous researchers have also discussed that the importance of positive attitudes toward accepting new technology plays a vital role and this motivate them to transfer to the new shopping environments which is online shopping, and the experiential results have shown that such attitudes influence consumers’ decisions that are they going to adapt it or not. Another key element in acceptance of online shopping in the environment of new technology is personality, because individual differences affect the decisions customers make at the time of purchase[6]. A recent survey which is conducted by The Daily Star in Bangladesh, shows that 70 percent of users spend more than an hour on social networking sites, which indicates that people are more into internet now-a-days so there is a possibility for the enhancement in the growth of e-commerce industry.

The major role of this study is to provide an enhanced understanding of the decision-making factors that influence online shopping adoption in Dhaka, which is rapidly expanding e-commerce industry. It will also help to find out the lacking where the online shoppers should focus to develop this. The information on the decision factors and their relative importance obtained from the comprehensive empirical analysis will also be beneficial for the future researchers who study consumer behavior in the e-commerce industry.

In today’s world, the Internet is also an important media for commercial transactions. Internet commerce includes the sales and purchases of products and services over the Internet. This new type of shopping mode has been labelled online shopping, e-shopping, Internet shopping, electronic shopping and web based shopping. The Internet make this form of shopping easier, simpler, economical and more available for consumers to interact and conduct commercial transactions electronically. The Internet is shifting the nature of customer shopping behavior and it also has many advantages over traditional shopping. The Internet is also observed as a foremost threat to traditional shopping outlets [7]. Though online shopping is spreading day by day in Bangladesh, as it is time saving, convenience, ease to purchase but it is still not that popular in Bangladesh, there are some factors which demotivating customers to buy from online.

II. E-COMMERCE IN BANGLADESH

With current progress of Internet usage as 3G roll-out in 2013, the dynamic marketing and sales of smartphones, e-commerce usage endures at a rapid speed. Businesses have realized that Bangladeshis are quite passionate about technology and at the same time enthusiastic shoppers, especially during festivals. Though, with the several obstacles to urban life in Dhaka city, citizens have progressively resorted to online shopping, with an increasing supply of virtual businesses to match. Motivated by convenience, competitive pricing, range of products, dedicated service, improving payment security...
and flexibility and demand from buyers and sellers, e-commerce has witnessed a rapidly increasing of the online shopping websites, particularly in the B2C and C2C category.

**In Bangladesh, there are many categories of E-Commerce such as:**

1) Business to Business (B2B)- organizations selling goods & services to other organizations. B2B websites that feature business directories, trade deals and information about suppliers such as BangladeshBusinessGuide, Addressbazaar and Biz Bangladesh

2) Business to Consumer (B2C)- organizations selling goods & services directly to consumers. B2C websites have also become very popular as evidenced by the growth and commercial success of online-based home delivery of food, such as HungryNaki and FoodPanda.

3) Consumer to Consumer (C2C)- consumers selling goods & services (used or new) to other potential consumers. The leading companies in this category include Bikroy, Ekhanei, and ClickBd.

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**III. PROBLEM STATEMENT**

**Background:** The Internet has grown explosively in the last ten years as it has become more widely available and used. As we know, 61.288 million people are using internet for these reason, till date, many entrepreneurs, small startups and corporate enterprises have used it as the ideal business platform to grow a worldwide business. Buyers are also very attractive toward online shopping as it is time saving. The largest market is now exiting in online. But in Bangladesh, the scenario is different. Online market is not too popular; people still prefer physical shopping. On the other hand, people who were interested about buying and selling over online, now they are also not too interested now a day.

**The specific purposes of this research are:**

- To identify the factors that influence Bangladeshi consumers' decisions to accept online shopping.
- To determine the factors that can impact on Bangladeshi consumers' choices of online shopping over physical shopping.

**Statement of Research Question:** Worldwide online shopping is becoming the most popular shopping method. Over the last few years, many companies also trying to establish Online Shopping in Bangladesh. But in Bangladesh, despite having many online shopping websites, online shopping is not as popular as other countries. Many factors are behind this issue. So, our research problem is:

*Why online shopping is not adopted by the majority of the people of Bangladesh?*

**Components:** Components are divided into 2 categories: 

**Dependent and Independent. Consumer Online Shopping Behavior** is the only dependent variable of this research and independent variables are: **Price, Service quality & Responsiveness, Consumer resource Perceive risk, Trialability & Generation gap, Website factor and Payment Process.**

---

**IV. COMPONENT ANALYSIS AND LITERATURE REVIEW**

**Price:**

Price was a critical factor for customer on online shopping [2]. Price has operated as major determinant of buyer choice. Low pricing observed in online stores acts as an influencer to shop from the online store [7]. As an important factor of shopping online can be defined price and recommendations of other consumers. Consumer expects the prices of products and services on the Internet to be lower than in traditional stores. Empirical results have shown that consumers expect the similar prices in all online shops but do not compare prices in online and traditional stores. It can be assumed that another important factor of shopping online is similar prices in online shops. Price as an important phenomenon of online shopping also has been analyzed by Lo et al whose findings show that consumers perceive online retailers' overhead costs as lower than store-based retailers' overhead costs [6].

**H1:** There is a negative relationship between prices charged by online retailers and consumer online shopping behavior.

**Service quality & Responsiveness:**

Online consumers demanded that e-retailers should provide an unconditional refund policy if the online consumer were not satisfied with the product. E-retailers should have refund policies to convince online consumers that they easily return products and get refunds if they are not satisfied, or exchange products for free within a reasonable timeframe [2]. Customer service includes answers to frequently asked questions, credit, return, and payment policies [7]. need to provide the greatest delivered value so customers may see it as advantage and stay loyal to them. Companies can measure this value by looking at customer satisfaction, and factors that affect this satisfaction are: customer need, value and cost [7].

The following are the variables which are grouped under component three or factor three and are concerned with the product being sold online on the websites:

- Variety of products offered
- Quality of the products offered (Sen, 2014)

The simplest way to sale the goods electronically is just to assure about “Money Back Guarantee”. It is the way which ensure consumers if they are not satisfied with the product, they can back their products at any time without any hesitation [2].

**Hb:** There is positive relationship between Service quality & Responsiveness and consumer buying decision through online.
Consumer resource:
Web stores have responded to the call for customer control by providing various site features like internal search engines and recommender systems to enable consumers to easily find what they need, learn more about it, and quickly purchase it. There have been very few attempts to create a framework or typology of Web-based customer decision-support systems but it does not influence online buying behavior because a person has a computer machine automatically aware of online. One of the most important antecedents of flow is the level of skills of the individual[7]. The technology available for implementing machine interactivity in online shopping environments has the potential to provide consumers with unparalleled opportunities to locate and compare product offerings. Such capabilities are particularly valuable given that online stores cannot offer physical contact with products, do not allow face-to-face interaction with a salesperson, and may offer a very large number of alternatives because of their virtually “shelves,” i.e., the lack of physical constraints with respect to product display. Interactive decision aids that may not always be of use to consumers who wish to shop online include a wide variety of software tools, ranging from general-purpose search engines to sophisticated agent-mediated electronic commerce. So customers do not necessarily have heavy tools and machine for influencing online shopping [7].

He: There is a positive relationship between consumer resource and online shopping behaviour.

Perceived risk:
According to reference [7], perceived risk is one of the major key components of online shopping decision making process. They have to perceived different types of risk like quality, security and so on. Besides, from customers’ point of view e-commerce customer have to face greater risk than the purchase made at brick-and-mortar stores [7]. According to reference [4], managers can improve business prospects and strategies through understanding the consumer risk and their reaction about risk associates. Reference[6]note that consumers who can perceived less risks or who are aware about online shopping make more purchase than more risk perceive. According to reference [4], perceived risk can be the reason for anticipating negative consequences among consumer purchasing behavior. In an electronic shopping context, risks are differentiated through different element. According to reference [8], there are five sub dimensions of perceived risk. They are economic, social, performance, personal and privacy. According to reference [11], in Bangladesh consumer perceived risk of online shopping by Delivery systems faults, online payment systems, personal privacy and personal customer services. Besides he identified high delivery cost also a perceived risk for Bangladeshi online shoppers. These studies show that there are many specific risk behind online shopping, which make bad impact on online shopping intention. According to our survey result and empirical study, it is identified that risk associates make a significance negative influence on the attitudes toward online shopping. According to reference [1], consumers are more likely to shop at online store with sound security and privacy features. Thus, the following hypothesis is proposed:

Hd. There is a negative relationship between perceived risk and online shopping adoption.

Trialability & Generation Gap:
According to reference [10], three dimension: complexity, compatibility and trialability. In modern world, another dimension comes to attach this idea. Which is x generation and y generation or generation gap. Trialability is the degree to which an innovation may be experimented with on a limited basis. It is found that it is positively related with adaptation, if consumer get chance to trail [8]. According to our empirical study, we found that form 149 respondents, X generation people are more trialability oriented and y generation people are not trail oriented. That is why around 90 percent and above Y generation people from our respondents go for online shopping, while only 1 percent people of generation X go for online shopping.

He. There is a negative relationship between trialability & Generation gap and online shopping adoption.

Website Factors:
Websites are fundamentally store houses of information that can help customers when they search for information. B2C websites are sites that enable consumers to make purchases through the World Wide Web (Ranganathan and Ganapathy, 2002). The design characteristics of a web page may also impact on consumers online buying decisions [1].

Reference [9] classify four characteristics of B2C websites: information content, design, security, and privacy. Similarly, reference [5] find that there are five websites factors: ease of use, product information, entertainment, trust, and currency affecting consumers’ attitudes toward retail websites. The content and design of a website are important considerations when online retailers design high quality websites [10]. Content refers to the information, features or services offered in a website, whereas design is the technique in which the contents are presented to consumers [4]. Reference [12] note that in the context of electronic commerce, a successful website should attract customers and make them feel the site is trustworthy, dependable, and reliable. Reference [1] find that a poor website design is the major reason for consumers not to make purchases online.

Hf: There is a positive relationship between well designed web site factors and online shopping adoption.
Payment Process:
Online payment is when the customer or buyer makes his payment transactions for the goods or services purchased with the use of the Internet – to be online. This type of payment lowers the costs for businesses as the more payments made electronically (online or offline) the less they spend for paper and postage. Also, it helps on improving customer retention as he is more likely to return to the same e-commerce site where his or her information has already been entered and stored[7]. Payment security and personal information privacy is the most important one, because customers worry about their credit card security and their personal information.

So far as payment options are concerned, online shopping offers different payment options like, cash on delivery or payment through internet banking or payment by debit card or credit card etc. But the majority of the buyers preferred cash on delivery facility[3]. Payment of online shopping is made mainly using credit card through paypal.com. Data collected from customer service of online stores suggests that the customers who have PayPal account can do online shopping using credit card. There is alternate arrangement of payment such as advance cash payment and bank account payment. The arrangement can be done after negotiation with the customer service over telephone[12].

Hg: There is a negative relationship between poor payment process and online shopping adoption.

Mathematical Model:
Online Shopping Behavior = α + β₁ * Price + β₂ * Quality and Responsiveness + β₃ * Consumer Resource + β₄ * Perceive Risk + β₅ * Triability and Generation Gap + β₆ * Website Factor + β₇ * Payment Process + ei

Online Shopping Behavior
= 0.957 + 0.360 * Price + 0.320 + (-0.079) * Consumer Resource + (-0.065) * Perceive Risk + 0.091 + Triability and Generation Gap + 0.193 * Website Factor + (-0.123) * Payment Process

IV. METHODOLOGY

Questioner development:
Due to the lack of published research in Bangladesh concerning online shopping, it was compulsory to collect primary data to test the hypotheses and satisfy the research objectives of the study. The structure of the questionnaire was constructed on a thorough review of the literature and feedback from in-depth interview. The review of the literature and the in-depth interviews was held in Dhaka, assisted to categorize the factors that may affect customers’ decisions toward online shopping. The information acquired from the in-depth interview was also used to assist in emerging the most suitable, timely, and applicable survey questions.

We use various measures, including nominal scales, Likert scales, and interval scales were used in the questionnaire. In the 2nd Segment, the statements were measured using a five-point Likert scale ranging from strongly agree (1) to strongly disagree (5). It increases the reliability of the response. The questionnaire was reviewed by one marketing experts. A pre-test of the questionnaire was also conducted on a random sample of 10 Bangladeshi consumers who were aged 21 years or over outside of one university in Dhaka. Response from the 10 consumers was attained to clarify the questions and statements and to evaluate the reliability and validity of the questionnaire (Cooper and Schindler, 2006). Some minor wording modifications in the questionnaire were made for procedure.

Sample and Data Collection
For our convenience, we have chosen “Google Form” to approach to respondents and conduct the survey. We have able to find sample of 149 respondents. We have used 5 Likert scale for the convenience of our analysis and also respondent’s ease.

Sample Demography
In our survey, of the total respondents 47% were male and 53% were female.

Table I

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>70</td>
<td>47.0</td>
</tr>
<tr>
<td>Female</td>
<td>79</td>
<td>53.0</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Within 149 respondents, 74.5% respondent’s age was between 18-24, 23.5% respondent’s age was between 25-34, 1.3% respondent’s age was between 35-44, 0.7% respondent’s age was between 45-54.

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>111</td>
<td>74.5</td>
</tr>
<tr>
<td>25-34</td>
<td>35</td>
<td>23.5</td>
</tr>
<tr>
<td>35-44</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>45-54</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In terms of education out of total respondents, 1.3% were in class X, 3.4% were in class XII, 77.9% were post graduate student, 17.4% were graduated.

<table>
<thead>
<tr>
<th>Education</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>XII</td>
<td>5</td>
<td>3.4</td>
</tr>
<tr>
<td>Post Graduate</td>
<td>116</td>
<td>77.9</td>
</tr>
<tr>
<td>Graduate</td>
<td>26</td>
<td>17.4</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table below we also can see out of 149 respondents 73.2% respondent’s income is Less than 5 lakhs, 9.4% respondent’s income is 5 to 10 lakhs, 2% respondent’s income is 10.1 to 15 lakhs, 2% respondent’s income is 15.1 lakhs to 20 lakhs, 10.1% respondent’s income is 20.1 lakhs to 25 lakhs, 2% respondent’s income is 25.1 lakhs to 30 lakhs and 1.3% respondent’s income is More than 30 lakhs.

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 lakhs</td>
<td>109</td>
<td>73.2</td>
</tr>
<tr>
<td>5 to 10 lakhs</td>
<td>14</td>
<td>9.4</td>
</tr>
<tr>
<td>10.1 to 15 lakhs</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>15.1 lakhs to 20 lakhs</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>20.1 lakhs to 25 lakhs</td>
<td>15</td>
<td>10.1</td>
</tr>
<tr>
<td>25.1 lakhs to 30 lakhs</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>More than 30 lakhs</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table II
AGE PERCENTAGE

Table III
PERCENTAGE REPRESENTS EDUCATION BACKGROUND

Table IV
PERCENTAGE REPRESENT ANNUAL INCOME

Analysis and Results
To find out the overall strength of the model we have calculated R Square. We also so calculated coefficient of the variables and considered level of significance of 5% to calculate the “Linear Multiple Regression Analysis”. All of this calculation were done by “IBM SPSS Statistic 23” software.

We have already mentioned that, in IBM SPSS we have calculated R Square to know the overall strength of our research model and the result is shown in the table below.

### Table V
RESULT OF R SQUARE

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>.677</td>
<td>.458</td>
</tr>
</tbody>
</table>

So, watching the table we can say that our R Square is 0.458. Which means strength of our research model is close to moderate as it is close to 0.5 but as it is less than 0.5 so strength of our research model is weak.

Our main tool to analyses the hypothesis was “Linear Multiple Regression Analysis”. To analyze it we have considers level of significance of 5%.

Coefficients are used to test the hypotheses. To make it easier to understand, table is given below:

Table VI
COEFFICIENTS & RESULT OF MODEL SUPPORT

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Standardized beta coefficient</th>
<th>p-value (significant at p &lt; 0.05)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha There is a negative relationship between prices charged by online retailers and consumer online shopping behavior</td>
<td>-.360</td>
<td>.000</td>
<td>Supported</td>
</tr>
<tr>
<td>Hb There is Positive relationship between Service quality &amp; Responsiveness and consumer buying decision through online.</td>
<td>.320</td>
<td>.001</td>
<td>Supported</td>
</tr>
<tr>
<td>Hc There is a positive relationship between consumer resource and online shopping behaviour.</td>
<td>-.079</td>
<td>.233</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hd There is a negative relationship between perceived risk and online shopping adoption.</td>
<td>-.065</td>
<td>.485</td>
<td>Not supported</td>
</tr>
<tr>
<td>He There is a negative relationship between trialability &amp; Generation gap and online shopping adoption.</td>
<td>.091</td>
<td>.151</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hf There is a positive relationship between well designed web site factors and online shopping adoption.</td>
<td>.193</td>
<td>.037</td>
<td>Supported</td>
</tr>
<tr>
<td>Hg There is a negative relationship between well designed</td>
<td>-.123</td>
<td>.075</td>
<td></td>
</tr>
</tbody>
</table>

ISBN978-984-34-2360-3
The Internet is a global communication medium that is progressively being used worldwide as a resourceful tool for marketing goods and services. However, online shopping in Bangladesh is not widely experienced and organizations investing in B2C online shopping need to understand the factors that affect Bangladeshi consumers’ online buying behavior [11]. A self-administered questionnaire was used to gather information from 150 respondents. The experiential analysis identifies and ranks some important decision factors: price, perceived risk, consumer resources, service quality and responsiveness, triability and generation gap, website factors, payment process [11]. All of these decisional factors influence on Bangladeshi consumers’ adoption of online shopping. Furthermore, managerial implications and recommendations are also existing here. The major objective of this research was to investigate the possible factors influencing adoption of online dealings among consumers. Based on the results of the data analysis, it may be possible to conclude that elements in the model jointly have some predictive influence. The model we created, after the analysis of the results of the model, we could interpret that the overall strength of the model is close to moderate. This means that all the independent variables (price, perceived risk, consumer resources, service quality and responsiveness, triability and generation gap, website factors, payment process) have a close to moderate relationship with the dependent variable (online shopping behavior). Among these, according to our research, Price has the highest impact on online shopping behavior and Payment Process has the least impact on online shopping behavior. This means that if prices of products of online shops increases or decreases, it has high impact on online shopping behaviors of consumers. On the other hand, if there are any changes in the payment procedure of the online shops, that will not affect the online shopping behaviors of consumers very much. Consumers’ attitudes (such as belief about price, service quality and responsiveness and website factors) towards online products significantly influence the adoption of online transactions. It is interesting to note how consumers’ attitude towards online product influences their decision to approve online transactions. In Contrast, consumers’ attitude towards the transaction process such as consumer resource, perceived risk, triability and generation gap, payment process did not prove to have a significant influence on the adoption of online transactions. The findings recommend that people have a positive attitude towards price during online shopping because almost all the online shops have similar prices so they feel more reliable. Ensuring refund polices when the consumers are not satisfied and allowing them to choose from a variety of products, this is how service quality and responsiveness made a positive attitude towards online shopping adoption in consumers. Moreover, when the consumers find expediently whatever information they are looking for in the websites, if they find these, it will make them happy as a result, websites factors are creating positive attitude in consumers in the adoption of online shopping behavior. On the other hand, even though consumers are given a huge range of products online, still they often do not feel like buying

<table>
<thead>
<tr>
<th>relationship between poor payment process and online shopping adoption.</th>
<th>Not supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>R²= 0.458</td>
<td></td>
</tr>
</tbody>
</table>
from online because they cannot physically touch them before buying and trail them. Especially in Bangladesh, consumers like to physically touch the products because the online shops, they often show high quality products in pictures but in reality, they deliver poor quality products. That is why even though after having necessary resource for buying products online, people still prefer physical stores. So, Consumer Resource does not really create positive impact on the adoption of online shopping behavior of consumers as there is lack of resources in Bangladesh. Besides, consumers feel like they are taking greater risk in terms of product quality and security of personal information [7]. In Bangladesh, people does not really feel safe while sharing their credit card information online because there are lots of cases of frauds. Also, we have found out that older generations are more averse to innovation. And at last people are very concerned about the privacy of their personal information and cannot trust enough the online stores with their personal information while paying with credit cards. Future research should therefore, investigate further these findings from all over the Bangladesh. As our survey is based on Dhaka, so we don’t know the consumer behavior of all over the Bangladesh.

In this study, we have perceived some issues affecting on online shopping behavior of consumers. A conceptual model was used in order to assess the effects of variables on each other using regression analysis. Results of hypotheses testing indicated that consumer resource, perceived risk, Triability and generation gap and payment process has negative effect on attitude toward online shopping behavior. That is why managers of online business should improve their product quality. The pictures that they show in the websites, should match with the products that they deliver only then people will be able to trust on them. Also, they should keep the personal information of their customers safe whenever customers pay with credit cards or any other card that contains personal information of the customers. They should have a safe and secure payment process for the customers. If they improve the product quality, the willingness of people buying products online will increase without even touching them because a trust will be build. Also from our results we found out that only 1% of our respondents of X generation goes for online shopping. So, mangers have to keep this in mind and plan their strategies accordingly so that they can target the X generation also along with Y generation which will increase their sales and flourish their business. Besides, they are creating loyal customer if they provide after sell service for required product. For Bangladeshi people, online shopping is a new trend. So, it will take time for Adaptation, though it is moving faster than expectation.

VI. LIMITATIONS AND FURTHER RESEARCH

While conducting our research, we have found some limitations associated with the research. Those are given below:

- For a standard research, we require no less than 530 study information however we have gather just 149 individuals’ conclusion in regards to this issue.
- Market Statistical surveying that is completed just measures what has happened in the past and does not more often than not assess what will happen later on. This implies a business can't take a gander at measurements did on them and know for beyond any doubt what will transpire. Whatever they can do is perceive how they have enhanced, on the off chance that they have, from the past to the present.
- Customer is the vital point in showcasing research. In any case, his purchasing intentions are hard to judge decisively and precisely. This brings some kind of instability in the conclusions drawn from the exploration action. The discoveries of the examination work (especially on account of shopper research) may not end up being precise.
- The greatest confinement of surveying is that there is an exceptionally in the unwavering quality of the information. The genuine estimation of how the exploration will help them relies on upon how exact the information really is.

Despite the fact that having these constraints this study has given pertinent and fascinating experiences to the comprehension of consumers' online shopping.

In addition, there are may have demographic factors such as gender, age, income level which influence the consumer behaviour for online shopping or not go for online shopping, that we didn’t analyse. So, further research should investigate this from the perspective of Dhaka, Bangladesh.

REFERENCES


Investigating the Impact of Valuing Intangible Assets on Valuation Multiples

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Abstract - Using the valuation methods proposed by [1], we value the internally generated intangible assets of the listed companies in DS30 index by capitalizing relevant portions of R&D, advertising and training expenses. After adjusting for the changes in book value and earnings, we show that companies experience substantial change in operating income, net income, book value of equity and return on equity (ROE). The results of the study also indicate that while companies that experience an increase in operating income and book value of equity trade at higher price to earnings (PE) multiples, companies that experience an increase in net income and ROE trade at lower PE multiples.

Keywords – intangible assets, amortization, capitalization, Dhaka Stock Exchange, intangible asset valuation

I. INTRODUCTION

In a technology driven world of today, one cannot overestimate the importance of intangible assets in generating value for firms. However, prior research has shown that while Bangladeshi listed companies report purchased intangible assets (e.g. software, goodwill), they do not report internally created intangible assets [2], despite the growing consensus of their value generating ability.

The objective of this paper is to value the intangible assets of companies by capitalizing expenses that can be capitalized as operating expenses. One of the distinctions accountants make in terms of categorizing capital and operating expenses is that capital expenses generate benefit over many years, while the latter only generates benefit in the current year. Regardless, some expenses are categorized as operating expenses even though there exists sufficient evidence to support that they help build firm value. For example, if a pharmaceuticals company invests significantly in its R&D to discover a new drug sold commercially, then it makes sense to treat the R&D expenditures as capital expenses instead of operating expenses. However, conventional accounting principles will treat them as operating expenses regardless of the outcome.

The reason for this is that BAS39 stipulates that intangible assets are measured at cost even if the asset is internally generated. Furthermore, the probability of future economic benefits must be based on reasonable and supportable assumptions about conditions that will exist over the life of the asset. If these conditions are not met, then the expenditure on the item is recorded as an expense [IAS 38.22, 38.33, 38.68]. Therefore, constrained by accounting principles, some expenses cannot be capitalized when in reality they serve the same purpose as capital expenses. The most significant impact of not capitalizing these expenses is that the assets created by the expenses do not show up in the balance sheet. However, even though the value of the intangible assets is not reflected in the balance sheets, their effect is found on the income statement and cash flow statement through higher revenues. This potentially has significant impact on the valuation multiples too.

Through this study, we examine whether companies with higher internally created intangible assets trade at different valuation multiples than other companies. The implicit assumption behind this is that companies with greater investment in advertising, R&D and training should theoretically have augmented balance sheets and income statements. The idea is to determine whether these changes are implicitly adjusted for by investors when they make investment decisions. If this is indeed true, then companies with higher internally created intangible assets should consistently trade at significantly different trading multiples than companies with comparatively less internally created intangible assets.

The results of the study show that (i) companies that experience positive change in operating income and book value trade at higher PE ratios and (ii) companies that experience an increase in net income and ROE trade at lower PE multiples.

The rest of the paper is organized as follows: the next section discusses our methodology in detail. The one after discusses the results while the last section concludes.

II. METHODOLOGY

For this paper, we use a methodology devised by [2] to value the internally generated intangible assets of the DS30 index component companies. We capitalize all expenses that create benefit over the years. Therefore, even expenses that include uncertainty about future yields are capitalized. This includes expenses like research and development, marketing expenses and training expenses. However, capitalizing these expenses require us to standardize a set of uniform assumptions, the details of which are discussed below.
The first assumption we make is regarding the length of time it takes for the expense to be converted into end products ready to be sold commercially. While this time period will vary for different product-types, companies and industries, we simplify the study by assuming that it is uniform across all the R&D expenses we amortize. The second assumption we make is about the portion of the expenses we capitalize. Because of the uncertainty of the expenses in actually generating value for the company, we do not fully capitalize the expenses. As an example, we are uncertain whether all the R&D expenses by a pharmaceuticals company will eventually yield anything positive. Also, we are uncertain whether the marketing and promotion expenses will, with almost certainty, elevate the company’s brand image and overall likability. To account for this uncertainty, we do not fully capitalize the R&D expenses and other related expenses.

Once the amortization period and portion are estimated, the next step is to collect data on the R&D expenses incurred by the company over its amortizable life. If, for example, the amortizable life is 5 years, we collect data for the past five years prior to the present years. However, since in some cases, the present year data (2016) is not yet publicly available, we exclude the present year expenses for all companies. Also, for simplicity, we assume that the amortization is uniform over the total length of the amortization period.

The following is the estimate of the residual value of the research asset.

\[
\text{Value of Research Asset} = \sum_{t=0}^{n-1} R&D \text{ Expenses} \frac{t}{n} 
\]

To explain the method further, for research expenditures over a 3-year period, 1/3 of the value of the R&D expenditure from two years ago and 2/3 of the expenses from a year ago are cumulated to arrive at the value of the research asset. This asset increases the value of the assets and consequently the book value of equity, of the firm.

The adjusted total asset and book value of equity are calculated by the formula below:

- Adjusted Book Value of Equity = Book Value of Equity + Value of Research Asset
- Adjusted Total Asset = Adjusted Book Value of Equity + Total Liabilities

In addition to the book value of equity, the operating income of the firm is adjusted to reflect the capitalization of the expenses, the calculation for which is given below:

Adjusted Operating Income = Operating Income and R&D Expenses – Amortization of Research Asset.

Consequently, the net income of the firm will also be affected:

Adjusted Net Income = Net Income + R&D expenses – Amortization of Research Asset

We find that all the R&D expenses by firms in our sample are by pharmaceutical companies. While the majority of the drugs sold in Bangladesh are generic drugs, we see a growing trend in R&D expenses overall. However, the research carried out in general is not very rigorous and the drug approval process is not lengthy. Therefore, the amortizable life is conservatively estimated to be 5 years.

While R&D expenses constitute a major portion of amortizable expenses, other operating expenses also exist that can be treated as capital expenses. For example, a fast-moving consumer goods (FMCG) firm will spend a substantial portion of its operating expenses in advertising, marketing and other promotional activities. Many of the companies in our sample are widely known firms that spend on advertising, and one could legitimately argue that part of the expenditures is directed towards building brand value. Therefore, a portion of these expenses can be treated as capital expenses because they eventually help in building the brand value and image of the firm. The same case could be made for selling, general and administrative (SG&A) expenses since they help to augment brand image and attract long term customers. Therefore, we assume that 1/3 (one-third) of the total SG&A expenses, ½ (half) of the marketing and promotional expenses are used to build brand name.

The amortizable life of these expenses is also assumed to be five years. To calculate the value of the asset (brand value) generated by these expenses, we use the same formula as (1), and replace the R&D expenses by marketing and promotion expenses.

Similarly, a large segment of our sample companies is banks and non-banking financial institutions (NBFIs). While these firms do not invest significantly on R&D and marketing, they do rely on training. The recruitment process of banks is often outsourced, so the cost of recruiting new batches of employees may possibly be significant. Training is very crucial to bank employees, especially to keep abreast of the changes in stringent regulations that exist in the financial system. Prior research has shown that bank employees found training to be helpful and it contributed to their job satisfaction [3]. These expenses by the banks eventually help it become more efficient and therefore the decision to capitalize them. To calculate the value of the asset (human capital) produced, we use the same formula as (1) and simply replace the R&D expenses by training and recruitment expenses.

In the next section, we discuss the results and implications of our study.

III. RESULTS

Our results show that when R&D, SG&A, marketing and advertising and training expenses are capitalized, there are significant changes in a firm’s overall asset and income position. The table below shows the descriptive statistics of the overall changes due to operating expense capitalization.

<table>
<thead>
<tr>
<th>TABLE I</th>
<th>DESCRIPTIVE STATISTICS OF POST ADJUSTMENT RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
</tbody>
</table>

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The table above presents the results of the changes in accounting items we carried out. The results show that on average, all the accounting items experienced a positive shift, with the change being highest in book value of equity (6.14%) and lowest in ROE (1.91%). The numbers in the parenthesis denote the standard deviation, which was also highest for book value of equity and lowest for ROE. Sector-wise, the biggest change in operating income, net income and book value of equity was seen at the pharmaceuticals sector (1.12%), while the highest change in ROE was seen at the miscellaneous sector\(^1\). This should not come as a surprise because once we capitalize items that were normally categorized as expenses, then we will see an increase in equity. Also, we expected to see a subsequent increase in income (both operating and net) once we capitalize expenditures. The results simply reconfirm our initial hypothesis.

For the next part of the study, we examine whether companies that experience the highest change in income (operating and net), book value of equity and ROE trade at considerably different PE ratio than other companies. We have already mentioned that while the internally created intangible assets do not show up on the balance sheets, their effect is felt on the income statements. Therefore, if the expenditure of these companies in intangible generating assets do in fact place these companies ahead of their peers, then it is fair to assume that they will trade at different valuation multiples than their peers. Because we asserted that such expenditures generate value for the company, we expect that companies that experience the greatest change in income and ROE (as a result of more amortized expenses) will trade at higher multiples than the rest.

To test this conjecture, we compare the adjusted incomes, book value of equity and ROE of the companies with their PE. Prior research has demonstrated that significant abnormal returns sustain for 3 days (-1, 0 and 1 day after the earnings disclosure) [4]. So, we take the average 3-day PE ratio of each company after earnings release and compare it to the adjusted earnings, book value of equity and ROE. The resulting figures (fig. 1, fig. 2, fig. 3, and fig. 4) show the correlation graph of each item and the 3-day average PE ratio.

As can be observed from the graphs below, the average 3-day PE ratio has a negative relationship with the change in operating income, net income and book value of equity. The relationship between the PE ratio and change in ROE is also negative, although not to the degree as the rest.

For the next part of study, we run a regression to examine the impact of the changing income, ROE and book value on the PE ratio. We use the following model:

\[
\gamma_i = \beta_0 + \beta_1 X_i + \epsilon_i
\]

Here,

\(\gamma\) = PE Ratio
\(\beta_1\) = Change in operating income (Ch_OPIN)
\(\beta_2\) = Change in net income (Ch_NETIN)
\(\beta_3\) = Change in book value in equity (Ch_BE)
\(\beta_4\) = Change in ROE (Ch_ROE)
\(\beta_5\) = Banking sector dummy
\(\beta_6\) = Pharmaceuticals sector dummy
\(\beta_6\) = Fuel and oil sector dummy

The table below represents the results of regression we ran.

<table>
<thead>
<tr>
<th>Item</th>
<th>Coefficient (t-stat)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.37 (8.18)</td>
<td>0.00</td>
</tr>
<tr>
<td>Ch_OPIN</td>
<td>0.58 (0.44)</td>
<td>0.67</td>
</tr>
<tr>
<td>Ch_NETIN</td>
<td>-5.45 (-0.94)</td>
<td>0.36</td>
</tr>
<tr>
<td>Ch_BE</td>
<td>4.70 (0.76)</td>
<td>0.46</td>
</tr>
<tr>
<td>Ch_ROE</td>
<td>-6.00 (-0.87)</td>
<td>0.39</td>
</tr>
</tbody>
</table>

The R squared of the above model is 0.46 (adjusted R-squared 0.28), demonstrating that approximately 46% of the variation in the dependent variable (PE ratio) is explained by the variation in the dependent variables.

The results also show that the change in ROE is most sensitive to the PE Ratio – a 1 unit change in ROE results in a 6.00 unit change of PE ratio in the opposite direction. The second most sensitive item is the change in net income - a 1 unit change causes a 4.70 unit change in PE in the opposite direction. The other two variables - change in operating income and book value of equity – are positively related.

\(^1\) The Miscellaneous sector denoted here does not represent the same companies as the Miscellaneous sector as classified by Dhaka Stock Exchange (DSE). Here, miscellaneous includes all companies except those in the banking, pharmaceuticals and oil and energy sector.
The results of the regression demonstrate that only the operating income and book value of equity change have positive relationships with PE ratio, indicating that companies that experience increase in operating income and book value of equity also trade at higher PE ratios. However, combined with the previously obtained results from the correlation tests, we could only partially confirm our initial hypothesis that companies that spend more on intangible asset generating expenses trade at higher multiples. While the results do not show a completely contrasting picture, we found two variables (change in net income and ROE) to be negatively correlated with PE ratio, indicating that companies which experience a positive change in these items trade at lower PE multiples. Therefore, the companies that do not invest as much as the rest (as expenditure correlates with an increase in book value and income) trade at higher multiples.

One reason for this behavior may be that investors may be short-term oriented and view these “investments” by the company as expenses. This might help explain why the change in net income and ROE has a negative relationship with PE ratio. The size of the change in net income is proportional to the amount of capitalized expenses, meaning the companies which have the highest expenditure in “intangible asset” creating expenses have the highest positive change in net income. Therefore, these companies may also be the companies with the lowest ROA or ROE (because they have higher expenditures). As a result, they may be the companies with lower PE ratios.

However, this argument does not seem tenable when we see that the PE ratio is positively related to both operating and book value of equity. The increase in income were also the result of capitalizing expenses, so companies with more expenses had the biggest change in the income category - the same case as the book value of equity. If investors were indeed more concerned about expenses, then the coefficients of the regression model would also have been negative. However, as we saw earlier, that is not the case.

IV. CONCLUSION

Intangible assets are becoming more important in a knowledge driven economy today. With this, it has become increasingly important to acknowledge the role intangibles have in generating value for a firm. Part of the acknowledgment requires more uniform and transparent valuation techniques for intangible assets. This paper has been a step toward that direction. The goal of this paper is to examine whether companies with greater internally created intangible assets trade at different valuation multiples than other firms. The results demonstrate that while companies that experience positive change in operating income and book value of equity trade at higher PE multiples, companies that experience a positive change in net income and ROE trade at lower PE multiples.

One should, however, be careful about overwhelmingly capitalizing such operating expenses though. Because of the inherent ambiguities of the likelihood of these expenses eventually benefitting the firm, we may risk overestimating the amortizable portion. This will eventually result in an inflated income and ROE and give the impression of something that is not.
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Big Data Analytic Applications in Tourism: A Bibliometric study

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Abstract - This study is Bibliometric of big data studies in tourism and hospitality industry. Tourism is a green engine in current economy and provided with various functions and scopes. On the other hand, the size of data in current world have been increased and analysis those large size of data called big data analysis have been transformed to get the opportunity to re-structure and expand data its use, in the same time, set up a new method for development, growth, innovation, and enhancement of the number of customers. So we evaluate bibliometric studies in tourism, depicts emerging themes, and offers critical discussions for theory development and future research. For the result, what we get first is there is limited number of research on Tourism and Hospitality industry with big data analysis. Moreover, we found that some researches use big data but no use big data analysis method to mine more effective information. Furthermore, the feedback shows that some researches study in Tourism and Hospitality industry apply with big data analysis have the model significance and current frameworks are not integrated for study more about Tourism and Hospitality industry with big data analysis yet. Therefore, we build a foundational framework for study Tourism and Hospitality industry with big data analysis, meanwhile, potential research questions are discussed and suitable research methods are identified. Finally, we suggest that use big data analysis in Tourism and Hospitality industry studies for development, growth, innovation, and enhancement of the quality of prosperity.

Keywords - Big data analysis, literature review, Bibliometric, Tourism

I. INTRODUCTION

1.1. Background of the study

The rapid development of economy from the 21st century, the great time makes tourism, which more and more become an important part of people's life. The tourism industry has become the fastest growing in the world, one of the largest service industry. According to the world tourism organization predicted that the global number of international tourism in will reach 1.6 billion in 2020, and the profits will be more than $2 trillion. If we come back into 1999, it was only 0.664 billion tourists and 450 billion profits, respectively [1]. The progress of science and technology always lead to the development of many industries, tourism industry is no exception [2][3]. Since the Internet and Artificial Intelligence fall into the life of every single person, the information transactions and information mining become an important part for Tourism industry [4][5][6]. Especially in recent 10 years, cloud computing, Internet of things, the Internet and the rapid development of information technology, such as mobile intelligent terminals, tourist information further upgrade, at the same time also let the traditional management mode, marketing mode, tourist demand and consumption patterns changed overturn type. The efficiency of information and communication technologies have revolutionized tourism organization drive mode and tourists, tourism market and tourism organization way of interacting parties [7][8]. In recent years, the rapid development of a new generation of information and communication technology has also led to data shows explosive growth. It means that a lots data in the world have been boomed, meanwhile to analyzing the amount of data, as we called big data, is a revolution of strategies, to ensure that innovation and sustainable development for tourism industry [9]. So what is big data? The big data is not only big size or big quantity, and the key idea of big data mainly pay close attention to data analysis and data storage, moreover it is represented by “3V”, Volume, Velocity and Variety [10]. Haider and Gandimi define the “3V” [11]is the most basic character of big data, and point out that the traditional data management and analysis cannot fully play its important role, the development of technology of big data analysis, was inspired by big data which is the real-time intelligence and accurate predictions. Tourism as the current hot service, its data also has all the features of big data is an important source of big data. By the way, the current big data in the application of the tourism industry lags far behind other industries, such as biological medicine, space science and technology, electronic commerce, etc. There are a variety of reasons. Such as tourism industry started relatively late, the travel industry related application less widely in the emerging information technology. The current tourism industry influence people's life and social development level is low relative to other industry. Levels of the government's emphasis on tourism industry data and related economic and technological investment less and so on. Thus, there is a great opportunity for both businessmen and academics who are interested in tourism industry analyzing by big data.
1.2. Research Problem and Research Question

This paper conducted to explore current “Tourism and Hospitality industry” research, which are related with big data analysis method, in academic databases. This paper evaluates bibliometric studies in tourism. As a precondition to tackle this research problem, a research question is specifically developed as below:

(1) In what area of Tourism and Hospitality industry is big data analysis being applied?
(2) At what level of analytics is big data analysis use in Tourism and Hospitality industry?
(3) What type of big data analysis models and techniques are used in Tourism and Hospitality industry?

1.3. Contribution of the Study

This article summarizes and analyzes academic papers recently, which are using big data analysis in tourism and hospitality industry, and point out the main domain of big data analysis method in tourism and hospitality industry. Most importantly, this paper Discuss the potential research questions and identify the suitable research methods.

II. METHODOLOGY

2.1. Determine the main objectives

In order to get the information from comprehensive academic papers on the tourism and hospitality industry, which employ big data analysis. We use Bibliometric methodology to identify, analyze and summarize the relevant literatures. And the process and phases will be followed by Figure 2.1.1.

2.2. Defining the conceptual boundaries

The search for bibliometric study literatures were operated in early of 2017 by the academic group using well-known databases including Emerald, Springer Link, Science Direct, Scopus and EBSCO Host.

2.3. Making the inclusion criteria

2.3.1. Search boundaries

there are three main boundaries:

- Subject areas should be tourism, hospitality or travel
- Big data analysis method should be employed
- Data must comply with all the characteristics of big data.

2.3.2. Keywords of search

Search strings were constructed using the following terms: (Big data) or (Big data analysis) or (Big data and tourism) or (Big data and hospitality) or (Big data and travel) or (Big data analysis and tourism) or (Big data analysis and hospitality) or (Big data analysis and travel).

2.3.3 Cover period

The big data analysis method that was used in tourism and hospitality industry study, is started around 2012, it is not a long time from now, so we set the cover period of searching start at 2012, end on Mar. 2017.

2.4. Apply the exclusion criteria

- Remove all articles outside the cover period
- Remove grey literatures (Conference papers, Books, White paper, etc.) and material not peer reviewed.
- Remove articles published in all other languages except English.
- Remove duplicate studies using Endnote.
- Remove articles that are not related to the domain of the tourism, hospitality or travel.
- Remove the articles that do not use big data analysis method and is not data sourcing from big data.

And finally identified as a related field of academic articles a total of 34 were selected. In addition, to avoid the loss of information and find information easily, all the academic articles that we chose have been downloaded, at the same time, Microsoft Excel database was employed for information management. In that Excel table, each row contained all reference information including source title, publish year, Author(s), country of publication, subject areas, topics, be cited times, methods, data type and keywords.

2.5. Descriptive analysis

Fig.2.5.1. indicates that the number of papers published in this field have continuously increased over the last five years, and especially rocketed since 2014. It shows that the application of big data analysis on the Tourism and Hospitality industry arena is a fast-growing and fruitful research field, being promoted by several special issue calls.

The selected 34 papers’ researchers are from 17 different countries in which only 8 countries published more than two papers. Fig.2.5.2. shows the Geographic distribution of researchers. It points out researchers of various countries have tried to apply the methods of big data analysis to tourism and hospitality industries, especially in China and the United States, where the big data analysis technology started early and developed rapidly.

The selected 34 papers are from 17 different journals in which only 4 published more than one paper. Fig. 2.5.3 illustrates the distribution of the reference papers in these 4 journals. It suggests that the topic is covered in a great variety of journals. Furthermore, the research topic has attracted real interest from highly regarded academics as most of these papers are published by journals with high impact factors.
post-travel phases, like “Booking” and “Feedback”. In order to develop and assess marketing strategies and to improve banding among tourism and marketing organizations, it is highlighted the usefulness of big data analysis to support strategic management via social medial online images.

Tourist behavior analysis is currently receiving research interest, and the application of big data analysis theories and tools on this topic is at a relatively mature stage. Start from Leung et al., and to Su et al., Big data analysis enables the analysis of tourists’ behavior from numbers to visualization, from movement spot to movement pattern.

With regards to the tourism demand estimation and prediction, it is well documented in the literature that are taking advantage of big data analysis. However, the data source is still relatively unitary, such as the GPS-based, have just recently been used a lot. Furthermore, only a few studies address tourism demand forecasting in big data analysis-enabled modeling. The study of how big data analysis can optimize tourism demand, such as order taxis, parking, and hotel booking, is still scarce.

Studies of big data analysis in the tourism supporting area are evenly spread over the three major applications of tourism marketing, tourist satisfaction measurement, and other tourist supporting. Big data analysis has been widely adopted to facilitate the tourist destination selection process and recent efforts have been made to integrate this activity with hotel management problems and to reduce operation costs. In terms of tourism marketing, two studies have only exploited the benefit of big data analysis in accurately supporting tourism and hospitality based on a sizable database, while only one study create a big data base knowledge system framework on improving the tourism organizations working efficiency.
3.2. At what level of analytics is big data analysis used in Tourism and Hospitality industry?

There are three levels of analytics: descriptive, predictive and prescriptive analytics. The reason for using this taxonomy is to examine the extent to which big data analysis is being used to support decision-making processes, as well as understanding what types of tourism and hospitality industry problems are being solved.

To reveal more insights from this taxonomy of big data analysis, we further investigate how each level of analytics has been studied in each specific tourism and hospitality industry domain. Table 3.2.1 presents the result. Overall, prescriptive analytics is the most discussed type in the examined literature, taking up 47.06% of publications (16 out of 34 papers), while descriptive analytics is just behind with 14 papers (41.18%), with predictive analytics taking up the least coverage (3 papers, 8.82%). In particular, the result found that destination management (9 papers) is those areas which have mainly contributed to the prominence of prescriptive analytics, thanks to the increasing development of big data analysis and data analysis programs. Meanwhile, predictive analytics is common type used in tourism demand estimation & prediction (2 papers) and destination management (1 paper). It should be noted that prescriptive applications of big data analysis in other areas are seldom studied, such as tourist behavior and tourism marketing.

The results show that prescriptive analytics is the most common area in the big data analysis driven study in tourism and hospitality industry, which is closely followed by descriptive analytics, while predictive analytics is receiving less consideration. To be more specific, destination is the major contributor of prescriptive analytics. On the other hand, predictive analytics is still the primary actor, while prescriptive analytics is still rarely discussed in other areas.

### Table 3.2.1

<table>
<thead>
<tr>
<th>Level of analytics</th>
<th>Destination management</th>
<th>Tourist behavior</th>
<th>Tourism demand estimation &amp; prediction</th>
<th>Tourism marking</th>
<th>Satisfaction measurement</th>
<th>HR management</th>
<th>Tourism transportation</th>
<th>Smart tourism</th>
<th>Paper review</th>
<th>Total papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Predictive</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Prescriptive</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>Total papers</td>
<td>14</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>34</td>
</tr>
</tbody>
</table>

3.3. What type of big data analysis models are used in Tourism and Hospitality industry?

The result of the literature review based on BDA models is summarized in Table 3.3.1. As discussed in Section 3.2, since the majority of reviewed papers focus on the prescriptive applications of big data analysis, the adoption of visualization and mixed modelling to support decision making seems to be natural. Mixed modelling is adopted in 8 papers (Table 3.1), but surprisingly enough, visualization is only applied in 5 papers. Destination management (5 papers) have mainly contributed to the dominance of mixed modelling, whereas in contrast, there are 3 papers found in the examined literature that uses visualization in this area. For the predictive level of analytics, forecasting is the most used big data analysis model in Tourism demand estimation & prediction context. At the descriptive level of big data analysis, association is the most used approach (3 out of 14 papers), which refers to the discovery of...
recurring and strong relationships among items in large scale datasets.

Finally, a number of papers are classified into optimization and semantic analysis models (6 papers, 17.6% of publications). Those papers fall into five tourism and hospitality areas, namely Destination management, tourism transportation, tourist behavior and satisfaction measurement, as seen in Table 3.3.1.

IV. DISCUSSION

The findings discussed above suggest some future directions to capitalize the research development of big data analysis applications in the tourism and hospitality industry.

4.1. Three levels of analytics should be equally examined.

As afore mentioned, current research focuses more on prescriptive analytics than descriptive and predictive analytics. Nonetheless, the application of big data analysis in any subject, not just tourism and hospitality industry, is always a linear-like process. In this process, the performance of prescriptive analytics would heavily rely on those of descriptive and predictive analytics as they dictate the value of critical parameters in prescriptive models. To catalyze the rapid progression of big data analysis application in tourism and hospitality industry, future research should balance the focus across all three levels of analytics.

4.2. Combining different data analytic techniques to develop more advanced and adaptive big data analysis models for tourism and hospitality industry.

The literature review has identified a number of big data analysis models commonly used in tourism and hospitality applications as well as popular and versatile big data analysis techniques to build those models. Dynamic optimization and simulation modelling should be further investigated in the context of big data analysis as they are baseline approaches for prescriptive analytics. Moreover, although the literature has extensively adopted visualization techniques as supplement techniques to predictive and prescriptive models, little attention has been paid on improving data visualization techniques. Future research should call for this gap because visualizing complex big data would expedite decision making.

4.3. Big data driven business models in tourism and hospitality industry.

Big data revolutionizes tourism and hospitality business models. On the one hand, it shortens the virtual distance between tourist and destination. On the other hand, it expands revenues from existing products to servitization, and creates new revenue from entirely new data-based products. Nevertheless, the ecosystem that supports new business models is underdeveloped; the enablers and obstacles of new business models remain unclear.

This leads to the research questions that we propose for future study: (1) what are the big data strategies in tourism and hospitality industry? (2) How to increase the value of big data, the most important ‘V’ in tourism and hospitality industry? (3) how various participants contribute to adding value of big data and what is the revenue sharing mechanism among the participants in tourism and hospitality industry; (4) what are the tipping points that transfer a conventional business model to big data driven business model.

V. CONCLUSION

Based on the content analysis methodology, this literature review examined 34 journal papers to provide a full picture of where and how big data analysis has been applied within the tourism and hospitality industry. In particular, we developed a classification framework based on four research questions: (1) In what area of Tourism and Hospitality industry is big data analysis being applied? (2) At what level of analytics is big data analysis use in Tourism and Hospitality industry? (3) What type of big data analysis models are used in Tourism and Hospitality industry? Addressing these questions, the discussion has highlighted a number of research gaps and future directions for big data analysis applications to catalyze the research development of the topic.

One of the limitations of this paper is that the categorization in the classification framework remains interpretative, as this could lead to concern on subjective bias.

ACKNOWLEDGMENT

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Promoting Pedagogical Approaches in Business Education

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Abstract—With the emergence of global reformation and the advancement of human and cultural dimensions, it is of an essential call for developing an improved and more effective pedagogical content for business education in the tertiary level. Very few endeavors have been observed so far in redrawing methodologies suitable for today’s business students to respond to global challenges. This paper aims to analyze the teaching pedagogy for business teachers based on primary data collected from students of a private university and furthermore, highlight the strength of teaching effectively. The paper also aims to explore learning which is capable of addressing the industry needs and can of twenty first century competencies and quality learning.

Keywords—Business Teaching, Learning Models, Pedagogical Approaches, University Education

I. INTRODUCTION

Learning results in positive change in behavior by adapting different experiences, processing available information and aspiring to many motivations. Learning aids in capabilities and adds skills to an individual. Business is the engine of a nation’s development and hence, business education plays the optimum decisive factor in positive contribution of human capital in a country’s economy. Therefore, the learning of a particular student should not only relate to the knowledge imparted by the instructor but with their attitudes and the approach that is chosen by them for the particular subject (Kshetra, 2013). It is often a challenge for a learner to adapt to the teaching methodologies if real pictures of business are not simulated. The 21st century skills are essential to embed in learning business. Enhancing teaching business aimed to give students enough knowledge about business from a practical sphere (Allison, 1976).

Though pedagogy is widely used mainly on the art and science of teaching children, in recent years it has been used to refer to, not just children, but to the teaching of both children and adults or as the art of profession of teaching. (Henschke, 2008)

II. LITERATURE REVIEW

The business educators must stay update to the developments in the business world. The world of business is facing dynamism in a constant up-gradation of need and differentiated solutions. The constant need for educators to avail themselves with lecture moderation with real life examples are an added pressure with already existing teaching loads and research needs. ‘… business educators are faced with the mammoth challenge of remaining up-to-date with the burgeoning quantity of potentially relevant information, whilst evaluating the quality of the new data against an increasingly complex web of known facts’.. (McKenzie and Swords 2000:275) Eminent scholar and Professor Emeritus Syed Saad Andaleeb analyzed seven issues crucial for effectively fostering higher education in Bangladesh—teaching quality, method, content, peer quality, direct facilities, indirect facilities and political climate. (2003)

a. Bloom’s Taxonomy

Bloom’s Taxonomy was created in 1956 under the leadership of educational psychologist Dr. Benjamin Bloom in order to promote higher forms of thinking in education rather than just remembering facts. There are three domains of educational activities or learning.

- Cognitive: mental skills or knowledge
- Affective: growth in feelings or emotional areas—attitude or self
- Psychomotor: manual or physical skills

More active form of thinking has been reflected in further research and Bloom’s student Lorin Anderson (2000) revised the taxonomy with a standardized domain involving—

- Creating
- Evaluating
- Analyzing
- Applying
- Understanding
- Remembering

b. Dale’s Cone of Learning

Edgar Dale was a prominent educator and scholar in the use of medium of instruction in teaching. He had a vast career at the Ohio State University. In 1946 Dale published the first three of his influential text ‘Audio Visual Methods in Teaching’. The purpose of the text was to delineate:

The use of audio-visual materials in teaching—materials that do not depend primarily upon reading to convey their meaning. It is based
The 1946 edition included the debut of his Cone of Experience. The cone was Dale’s attempt to organize various types of experience according to their levels of experience according to their levels of abstractness, being the at least abstract or most concrete end of the continuum, and Verbal Symbols, the most abstract, at the other. As technologies emerged, so did his method inclusions and the level rose above few more stairs.

In Dale’s words, the cone serves as a “visual metaphor of learning experiences” and that “you will make a dangerous mistake, however, if you regard the bands on the cones as rigid, inflexible division” (1954, p42). In balancing the learning instruction, he cited Dewey (1916) where direct experiences are important to learning they are also, but their very nature, limiting: learning about a geographic region in sensory stimulating manner i.e., being there) would indeed be a valuable experience. However, that experience would be restrict in terms of developing an understanding of geography, its multiple components, and numerous regions (better learning from a map) although it is likely a good beginning. Dale obviously recognized the importance of having a variety of learning experiences and the complementary nature of those experiences.

c. Andragogy and Adult Learning

Adult learners have specific needs that have to be considered during the instructional design. Andragogy has been used as a code word for identifying the education and learning of adults. The basic principle is to designate strategies and methods that are used in helping adults learn.

Malcom Knowles

During 1990 Knowles had begun building a comprehensive theory of adult learning that targets to influence the characteristics of an adult. Beginning with the concepts researched by other classical education researchers, he developed the andragogical model based on several assumptions –

i. They need to know (why do they need to learn)
ii. The learners’ self-concept (Consciousness of how others should see them )
iii. The role of the learner’s experience (How different it is to adapt to the quality and intensity of learning materials)
iv. Readiness to Learn ()
v. Orientation to learning
vi. Motivation

III. OBJECTIVES

The write-up aimed to figure out most appropriate teaching techniques that teachers can adopt that is based on students’ feedback and current teaching practice evaluation. The discussion shall aid in qualitative business course teachers to:

✓ Plan content instruction
✓ Understand the value of better teaching in business
✓ Differentiate teaching techniques for qualitative and quantitative business courses
✓ Develop awareness of differentiated instruction
✓ Understand and operate in a climate that includes education and the business world as partners in career preparation

IV. METHODOLOGY

Twenty Five business students responded to a Google questionnaire from a private university on effective business teaching techniques. The study is qualitative of nature. A set of structured and unstructured questionnaire was designed and shared in Google drive for responded to respond online. The limitation of this study is the informal nature of the study and the analysis of the responses from open ended questions. Only one set of data collection method was used which may put the validity of data in question.

V. RESULTS

The majority of the respondents were from an age group of 21-24 as the research was conducted through a business school’s social media page where the majority of the followers were from under graduation level. It can also be inferred that this particular age group were more inclined to respond and they hoped for better education methodologies as the title of research paper was shared. The gender balances of the respondents are near balanced, 44-56 to females. The majority of the respondents were
students in their final year and doing internship i.e., the ones who have had significant self learning assessment and have done teachers’ evaluation on business courses. When asked about on the desired “quality of a good teacher”, majority of the students chose ‘one who teaches with real perspectives’ out of several other options. Similarly the majority chose ‘fails to describe effectively’ as a mediocre quality of a teacher. When asked about the best learned courses of business the top three choices were Marketing, Basic Business and Management respectively. 76% of the respondents chose ‘friendly yet learning’ environment in class, while the other chosen options were- interactive sessions, local context learning and case studies and audio-video aided lectures. These responses reflected on the next question where the respondents shared ideas on their own teaching strategy if they were to become teachers for a day. On a rather sensitive query on their worst learning experience interesting findings were recorded- boring or monotonous lectures, unethical teaching practices, bad communication, too strict, not giving feedback were among them. These responses aided significantly in devising the teaching methodology for this paper.

**Case Study: MGT 401 Business Strategies, Spring 2017 vs. Summer 2017, BRAC Business School, BRAC University**

Business Strategy or Strategic Management is a core course that is mandatory for all business students. As the final assignment of the course students were required to take an entrepreneurial project of selling in make shift stalls for three hours with an investment of one thousand taka; it carried twenty percent of final marks for the course. . The students realized that they have experienced everything that the syllabus of the course had- naming the company, mission, vision, objectives, analyzing external and internal environment, marketing and financial decision making, and overall strategy implementation.

Whereas, in Summer 2017 semester, the selling project was not arranged due to Ramadan. Rather the students were asked to give a group presentation on an imaginary product addressing a real need. The students’ enthusiasm was not as visible as it was in the selling project of the previous semester where students felt that they actually participated in successful learning through the course. Many students who took the course in Summer were clearly disappointed as they chose the course taken by the same faculty with the expectation to participate in a challenging project like the one they saw in the previous semester.

**VI. DISCUSSION**

...after two weeks we remember only 10% of what we read, but we remember 90% of what we do...

“Educational simulations will be in widespread use by leading instructors within 5 years and will eventually change education as much as textbooks and motion pictures.”- Clark Alrich, author of “Simulation and the Learning Revolution”

As technology continues to evolve, teachers will have many options for including audio-visual materials in instruction. These will include the use of computer technology to allow students to engage in simulation, a form of discovery learning, which has shown some initial promise. (Shaffer, Squire, Halverson, & Gee, 2005).

a) Case Study

Students can learn significantly from case studies that are relevant to the lectures which give a clear knowledge of the tactics and techniques of business that are required when a student enters a business environment. Case simulation is essential in helping students to engage in essential writing skills and also problem solving skills.

b) Projects

Learning activities based on conducting research on any projects provide the opportunities to students to work on the problems that are faced in the real business world. The teachers who are efficient make the project that is relevant to the world outside a classroom and help the students in understanding the link between activities that are conducted in the classrooms and a practical environment (Mohammad 2015)

 c) Industry Visits

Students learn from the experiences they encounter in educational field visits. The visits must be planned according to the curriculum and the students should be seeking answers to queries resulting from gap in class lectures and practical findings.

d) Seminars

Seminars and workshops bring the best in undergraduates as the spokes person engage them in thoughtful mind games that are essential in current business world. Job fair, subject specific discussions, master classes etc have proven to increase the participants’ interest in business and entrepreneurial engagements.

**VII. RECOMMENDATION**

- ‘Pendagogy’ approaches [a mix of pedagogy and andragogy] can be the teaching innovation that not only addresses the necessity of content knowledge of the faculty but also students’ motivation of learning.
• Teachers’ motivation to teach better should be identified and be practiced accordingly. Some teaches better for personal satisfaction, some for career growth either way the reason must address the learning need of the students ability to address the real world challenges
• Parents’ involvement must not limit on just paying for the tuition fees. An interactive system can be practiced by course coordination team where the parents are well aware of the progress of the students and where their children’s learning is what the institutions claim to offer
• University Authority must address the need of continuous development of training and pedagogical approaches practices and creative teaching training to teachers that teach qualitative courses. Professional development is a new phenomenon in private university set-up and the governing body is required to champion the concept.

VIII. CONCLUSION
Teaching is regarded as the noblest profession as it is the process of setting a child fit for the world’s challenges. An attempt has been made to address a casual approach of teaching in private university set-up business teaching to take thinks forward in twenty-first century learners’ standard. Correct pedagogy will help build teachers’ confidence in managing the classes and contribute toward career growth. Students shall be job ready and be the positive source of goodwill for the institution. It’s a win-win deal in the end.

REFERENCES

The use of RFID in an Academic Library: a case study of BRAC University

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Abstract - BRAC University (BRACU) Library is the pioneer in implementing Radio Frequency Identification (RFID) System among university libraries in Bangladesh. The purpose of this paper is to explain how RFID system was introduced at BRAC University Library (BRACUL). The data for this study were gathered from unstructured interviews with concerned Library staff members and from the author’s practical experiences and from secondary sources. The implementation of the RFID system was planned to be carried out in two phases (Phase 1 and Phase 2). This paper explains how phase 1 was implemented, the challenges of implementing RFID in a library and the practical experience gained through implementation of RFID. This paper would encourage library professionals in developing countries to implement RFID in their libraries.

Keywords: Academic Library, BRAC University, Case Study, RFID

I. INTRODUCTION

BRAC University (estd. 2001) is one of the leading private universities of Bangladesh. The vision of BRAC University’s Ayesha Abed Library is to develop a world-class Knowledge Resource Centre and provide innovative new services and collections to the teaching, learning and research communities, using latest technological developments of 21st century. The library employs the latest technologies to improve services and to provide fast and easy access to information. The Library meets its goals by integrating appropriate technologies with a broadly educated and experienced staff committed to customer service[1]. It has implemented a number of projects towards its vision to meet the increasing demands for digital access to an array of contents.

BRACUL planned to implement Radio Frequency Identification (RFID) in the year 2011. The main objectives of RFID implementation are to improve the quality of service and for improving the efficiency of operations. The specific objectives are to:

- Introduce RFID enabled vigilance system to avoid theft of library items.
- Launch a RFID enabled shelf management reader to rectify the arrangement of documents on the shelf and to identify the misplaced documents.
- Improve of library staff interfaces with users by enabling them (staff) to spend more time in other value added services rather than in tasks that can easily be automated and accurately performed using RFID.

The implementation of the RFID system was planned to be carried out in two phases (Phase 1 and Phase 2). Phase 1 has already been implemented. Phase 2 would be implemented at BRACU new campus in Dhaka city. The tasks carried out under Phase 1: Security/ Theft Control and Inventory Control. Phase 2 would introduce Self check-in/ Check-out System. The current paper describes phase 1. Inventory control is yet to be operational. There were only a handful of vendors who knew or implemented RFID in Bangladesh. This study would help to understand how BRACU library implemented RFID project and to overcome the challenges.

II. LITERATURE REVIEW

RFID stands for radio frequency identification. RFID is a technology that spans systems engineering, software development, circuit theory, antenna theory, radio propagation, microwave techniques, receiver design, integrated circuit design, encryption, materials technology, mechanical design, and network engineering, to mention a few [2]. The OED (Oxford English Dictionary) defines RFID as: ‘radio-frequency identification, a method for tracking objects, animals, etc., by means of an attached or embedded device which transmits a radio signal [3]’.RFID technology is one of the emerging technologies that are being used by organizations such as manufacturers, retailers, logistics providers, hospitals, and libraries[4].Radio Frequency Identification is a location determination technology that has been receiving a lot of commercial attention.
in recent times, especially in the areas of asset tracking and supply chain management [5]. During circulation-based activities, radio frequency readers are used to collect this data for transmission to the library management system in a process analogous to, although considerably faster than, scanning and transmitting a barcode [6]. RFID is a wireless non-contact system which uses radio-frequency waves to transfer data from a tag which is attached to an object, for automatic identification and tracking[7]. The first challenge was to integrate RFID tagging system with the Library Management System (LMS), which used barcode system. Before the RFID subsystems could work with the LMS, it is necessary to establish the same communicate protocol between the LMS and the subsystems. In order to establish this, system engineers from both parties have to work together to synchronize the communication system [8]. Libraries began using RFID as a substitute for the electro-magnetic and barcode systems in the late 1990s (Ayre, 2005). Since then, RFID has been utilized to play an imperative role in redefining the library process to simplify tasks for users and library staff. It makes available a platform from which to library process to simplify tasks for users and library staff. It makes available a platform from which to automate the majority of processes executed by the staff. It makes available a platform from which to automate the majority of processes executed by the staff.

When BRACUL started searching for RFID vendor, there were few local vendors in Bangladesh. Out of them BRACU selected one vendor to introduce the first-ever RFID System (Phase 1) at Ayesha Abed Library in November 2011[13]. It was working well till 2016. After that it stopped working due to technical problems. The supplier and other technical experts could not fix it and suggested to replace the RFID gate and Staff Work Station with a new one. BRACUL explored different RFID Management Systems that are available in Bangladesh. It was found that 3M is the world renowned company and their service/agency is available in Bangladesh. After discussion and approval, BRACUL installed 3M RFID Detection System (Gate) and Staff Work Station with USD reader in February 2017.

After installation, 3M RFID passive tags were converted by the in-house BRACUL staff members during the semester break. The remaining conversions were done by during roster operation and the tags were converted instantly after returning books every day during working hour.

The model for implementation of RFID at BRACU as follows:

**III. METHODOLOGY**

Data for this study were gathered from primary and secondary sources. Interviews, archival data and observation techniques were used to collect data for this study. Technical and background information were gathered from unstructured interviewswith concerned two library staff members (Assistant System Programmer and Senior Assistant Librarian) who were closely involved in the implementation of this project. The other sources of data include internal documentation, memorandum, etc.

**IV. MODEL DEVELOPMENT**

BRACU implemented a complete Integrated Library System (ILS) using Koha and international standard format MARC 21, Z39.50 in 2009. This ILS supports RFID and mobile SMS Technology[1]. Koha ILS was ranked the most complete FOSS (Free and Open-Source Software) ILS because: routing periodicals, inventory control, authorities, generation of notices to customers, order tracking etc.[11]. When the cost of labour is taken into consideration for tasks such as checkout, check-in, inventory holds, lists, mis-shelved items, etc. RFID can prove to be very effective[12].

<table>
<thead>
<tr>
<th>Milestone of RFID (Phase 1) at BRACUL (April 2011-February 2017):</th>
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<tr>
<td>April 2011</td>
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<td>April 2011</td>
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<tr>
<td>May 2011</td>
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<tr>
<td>July 2011</td>
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<tr>
<td>August 2011</td>
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<tr>
<td>November 2011</td>
</tr>
<tr>
<td>August 2016</td>
</tr>
<tr>
<td>August 2016</td>
</tr>
<tr>
<td>August 2016</td>
</tr>
</tbody>
</table>
August 2016 : Approval of 3M RFID Detection System (Gate)
August 2016 : RFQ to Litme Enterprise
September 2016 : Work Order to Litme Enterprise
February 2017 : Successful implementation of 3M RFID Detection System (Gate)

The following screenshots shows different RFID activities at BRACUL:

Fig 1: Tag Conversion window

Fig 2: Tag converted

Fig 3: Koha Circulation Interface

Fig 4: Patron’s Check out interface

Fig 5: Checked out list

Fig 6: Checked in list

Learning Outcomes and Challenges:

a) Cost: The most difficult challenge of implementing RFID is the cost. Hence BRACUL divided the entire RFID project into two parts, Phase 1 and Phase 2. After successful implementation and operation of phase 1 as a pilot project, the plan for Phase 2 would be initiated.

b) Lack of RFID suppliers: There are only a few suppliers in Bangladesh.

c) Lack of Technology Expert: During the installation BRACUL faced problems in connectivity. Any expert of RFID was not found in Bangladesh. The vendor contacted an expert of 3M overseas Branch Office to resolve it.

d) Installation of RFID: Surrounding metallic objects of the RFID gate panels affect the sensors detecting ability. BRACUL solved it by removing all metal and electronic devices around 36 inches from the Sensor of both panels to work properly. Connection via USB cable was unsuccessful, Ethernet cable was to connect to gate software. Interface using IP and gateway provided in the setup manual.

e) Koha integration: Koha, ILS is compatible with RFID. No customization was needed in Koha for this integration.
f) Tech Savvy users: The users who know the function of RFID tag, they can remove and deface the tag and may take away the library books without check out from the circulation counter.

g) Moisture: Moisture can be harmful for RFID tags which may not work well in RFID gate. The books containing tags may be taken away without charging.

h) Training of RFID operations to library staff: Library staff should be trained properly on how to operate this new technology.

i) Koha and RFID tag: The RFID tag reader reads the 10 digit barcode from the book and sends the value to Koha. The librarian has to turn on the tag reader software and keep the mouse pointer on the required services i.e. check-in, check-out, etc. As per test, tag reading time is less than one second. The RFID reader pad (medium-range-reader) can read up to 3 tags at a time depending on the thickness of the books and distance for the reader. The highest distance from RFID tag is appropriately 8 inches. Though RFID tag reader pad can read 3 tags at a time, Koha supports only single input. There is no plug-in to support multiple inputs in Koha. Further research is needed to validate the author’s findings and resolve this aspect, if it prevails.

j) As per manual the distance between the two panels is 36 inches. According to 3M RFID provider this is the best possible detection zone for human health concern as per international law. In the middle there is a null zone which is a security threat.

k) RFID Gate: The glass panel is very delicate and is required to be cleaned with dry micro fiber cloth. The use of wet cloth for cleaning must be avoided.

V. CONCLUSION

RFID is growing and useful technology to provide quick and quality services to the users of an academic library. The findings from this study are significant control on theft of library materials by using RFID implementation (Phase 1), lack of experts and insufficient RFID suppliers in Bangladesh. The author also finds no plug-in to support multiple inputs in Koha (version: 16.11.06.000). After successful implementation of phase 2, BRACU would be facilitated comprehensively like identification and tracking, stock management, etc. in a quick, accurate and timely manner and enabling the library staff to spend more time in other value added services rather than in tasks that can easily be automated and accurately performed using RFID. Presently BRACU has a single-corridor RFID gate which is not sufficient. Considering the number of library users, BRACU should have three panels RFID gate with separate entry and exit point in the new campus. The big challenge is the cost of RFID systems which may be minimized through purchasing via consortium or split the projects in several phases in line with financial capacity.

ACKNOWLEDGMENT

The author would like to thank Mr. Sakib Ahmed, Assistant System Programmer and Mr. Ahmad Parvez, Senior Assistant Librarian for their valuable information. The author also acknowledges the encouragement of Ms. Hasina Afroz, University Librarian for doing this study.

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Considering Pros and Cons of Initial Public Offering (IPO): An Empirical Study on the IPOs of Dhaka Stock Exchange

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Abstract - To arrange capital for high profitable projects, many companies tend to go public. Making an Initial Public Offering (IPO) has both advantages and disadvantages and thus, before going public, the weight of costs and benefits of IPO must be taken into account. This research was done by conducting empirical studies. Secondary sources have been used to look further into the issue. An analysis is done on IPOs of Dhaka Stock Exchange (DSE) in order to see whether all companies’ IPO decision is successful or not. The goal of this study is to investigate both advantages and disadvantages of IPO in detail. This study will help the companies going public for the first time by showing analysis of both pros and cons and researchers and market analysts will get benefitted as well. It is noteworthy that a company may make IPO only if disadvantages of IPO do not exceed its advantages.

Keywords- IPO, Capital, Advantages, Disadvantages

I. INTRODUCTION

One of the benefits of going public is that it gives the company the opportunity to raise fund from the capital market [17]. Companies with business prospects, large current investment and future investment will find going public appealing and will be willing to use the opportunity to raise funds for capital investment. IPO provides an immediate influx of capital that can be used for expansion and diversification of operations. The decision to go public requires considerable planning and analysis from both legal and business perspectives. The planning and analysis processes involve: weighing the costs and benefits. The company needs to think carefully about whether it is right for them and whether they can achieve an acceptable valuation when making decision to go public. Despite the cost and challenges facing companies that are going public, some companies still prefer to do so as alternative way to raise fund for valuable projects. This raises the question of why some companies choose to use public equity markets and some do not.

II. THE PROS AND CONS OF IPO

A. The Pros of IPO

A business may have a number of reasons for choosing to go public. These motives have no order of importance, but rather it depends on the circumstances that the business is in which ultimately decides why it will delve into this market. Some of these reasons are discussed below.

• Access to capital: Going public permits a company the prospect of raising equity finance both during initial listing and further down the road when more capital is required. Indeed, being floated in the active capital market like AIM can enable Good Energy to raise equity capital significantly [4].

• Market for company’s stock: Having shares in the market is always a good thing as it increases the shareholder base, encourage new prospects to be a part of the company through while also allowing the existing shareholders to leave at a later date if they choose to do so. Moreover, it kindles liquidity in the shares and gives shareholders the opportunity to realize the value of their holdings [12].

• Employee commitment: Having shares in the public market is a blessing in disguise for the employees. This is because employees who are rewarded with ownership schemes rather than bonus schemes have access to a tangible value and market for trading. This encourages the employees to actively participate in the ownership of the company which in-turn benefits them as well. This results in increased long-term commitment between the business and employees and in turn helps the company to attract top-notch professionals [12].

• Greater acquisition prospects: AIM listing has fewer regulations where there are no minimum limits on capitalisation or on the amount of shares in public hands. Thus access to increased capital will in turn increase the
likelihood of procurement of private or other public companies.

- **Prestige of running a public company:** The listing on a public market without a doubt means increase in exposure, prestige, and public image for the business. As it receives more extensive press, thus, widening the awareness of the company and its products. This heightened profile in turn can help to sustain demand for and liquidity in the shares [12].

**B. The Cons of IPO**

There are always drawbacks to taking a certain decision, and becoming a public company is the same. Some of these drawbacks are seen only once either at the inception or during the flotation process, while having to do deals with issues like reporting, etc. has to be taken care of always. Some of these problems are analysed below:

- **Exposure to market swings:** Market conditions those are beyond the scope of a company’s control play a major part in affecting the price and liquidity of the share in the market. Shares may suffer from liquidity, or price may see an adverse turn of events, etc. This is especially dangerous to smaller companies as they struggle to keep up with the big-guns and the private companies who are more immune to such market swings.

- **Probable loss of control:** Sale of shares in the public market means handing over a large chunk of the administrative control to the outside shareholders, whose views must be taken into account. Since most shareholders typically look towards the short-term goals of seeing continual rise in the company’s price of stocks. Thus, there is tremendous pressure to satisfy shareholders’ demand for steady increase in earnings thus leading to a conflict between short-term performance rather than long-term strategic goals [10].

- **Reporting:** Turning the company private requires a high level disclosure and reporting. This means the company requires another large investment in various departments like the management information system in order to fulfill the various requirements of the complying with the rules and regulations [12].

- **Accountability:** Since there is a greater answerability in a public company, the director and others involved in the operations of the company will lose their privacy and they enjoyed by having to answer to the outside shareholders.

- **Expensive process:** A considerable large amount of finance is required to cover the cost listing. Furthermore, huge amounts of executive time are also required. The costs include the likes of flotation cost, the cost of raising additional funds (capital) and the other fragmentary costs that are involved to maintain the listing is quite substantial, especially to comparatively smaller companies [12].

As discussed here, there are several pros and cons of being floated in the stock market. Generally, going public decision is a very important strategic decision which requires a careful consideration of several factors and a firm should go public only when the benefits of doing so exceed the costs.

**III. STOCK PRICE ANALYSIS OF DIFFERENT INDUSTRIES OF BANGLADESH**

Some of the leading industries of Bangladesh have been selected to conduct an empirical study such as, Engineering, Pharmaceuticals and Chemicals, Fuel and Energy, IT Sector and Textile. Under each of these five industries 2 to 3 companies, that have made IPO two or three years ago, have been selected to do an analysis on. Main focus is on the closing price of these companies for last few years starting from their first day of going public to 2017. Ups and downs of stock price help to know whether making IPO is always a good decision or not. Decision of going public is not always fruitful because sometimes market situation and other factors decrease the price of the shares. Many companies’ current share price is lower than their initial share price, with which they turned from private to public company. Following are the tables and graphs of quarterly closing price of the sector wise companies. The closing prices below represent the prices of the last transactional day of a quarter’s last month. All the data collected from Dhaka Stock Exchange (DSE) Ltd’s website dsebd.org.

**A. Engineering**

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Bangladesh Steel Re-Rolling Mills Ltd</th>
<th>IFAD Autos Ltd</th>
<th>Olympic Accessories Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face Value</td>
<td>35</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>Jun 2015</td>
<td>73.7</td>
<td>110.6</td>
<td>58.9</td>
</tr>
<tr>
<td>Sep 2015</td>
<td>131.3</td>
<td>110.6</td>
<td>51.5</td>
</tr>
<tr>
<td>Dec 2015</td>
<td>131.6</td>
<td>92.2</td>
<td>33.1</td>
</tr>
<tr>
<td>Mar 2016</td>
<td>194.7</td>
<td>88</td>
<td>33.3</td>
</tr>
<tr>
<td>Jun 2016</td>
<td>147.8</td>
<td>84.3</td>
<td>26.3</td>
</tr>
</tbody>
</table>
Engineering sector is an important industry in Bangladesh. Demand for machineries is also increasing. Bangladesh Steel Re-Rolling Mills Ltd, IFAD Autos Ltd and Olympic Accessories Ltd are the companies that fall under engineering industry of Bangladesh. These three companies first offered share to public in 2015 and became public limited companies. Bangladesh Steel Re-Rolling Mills and IFAD Autos are progressing from the price they started with. IFAD had very lower price in 2016 than that of June 2015 but higher than its initial price; however, the price rose again in the 1st quarter of 2017. On the other hand, Olympic Accessories’ current share price is very low and in the graph it shows that it has a decreasing trend. It indicates that the volatility of the abovementioned companies’ share price is intense and fluctuation in share price leads to an uncertain outcome. In this case, IPO may or may not be a fruitful decision in the long run for these three companies; especially for Olympic.

B. Pharmaceuticals and Chemicals

**TABLE II**

<table>
<thead>
<tr>
<th>Company Name</th>
<th>ACME Laboratories Ltd</th>
<th>Far Chemical Industries Ltd</th>
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<tr>
<td>ACME Laboratories Ltd</td>
<td></td>
<td></td>
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<tr>
<td>Far Chemical Industries Ltd</td>
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</table>

Pharmaceuticals and Chemicals industry is doing very good in Bangladesh and one of the most powerful and dynamic sector which has its contribution to GDP growth [3]. ACME Laboratories first offered share to public in 2016 and Far Chemical Industries did in 2014. Both of the companies started with the face value of Tk. 10. ACME and Far Chemical both have fluctuation in share price; however, the volatility of the latter’s share price is intense and it shows uncertainty of their performance. Price may fall in future depending on many factors. Thus, it can be said that IPO is not always a good choice for every company.

C. Fuel and Power
Table IV
CLOSING PRICES OF THE SELECTED COMPANIES OF IT INDUSTRY

<table>
<thead>
<tr>
<th>Company Name</th>
<th>IT Consultants Ltd</th>
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<tr>
<td>Face Value</td>
<td>10</td>
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</tbody>
</table>

Table V
CLOSING PRICES OF THE SELECTED COMPANIES OF TEXTILE INDUSTRY

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Dragon Sweater and Spinning Ltd</th>
<th>Evince Textiles Ltd</th>
<th>C&amp;A Textiles Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face Value</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Jun 2015</td>
<td>-</td>
<td>-</td>
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<td>Sep 2015</td>
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<td>Dec 2015</td>
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<td>Mar 2016</td>
<td>19.1</td>
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<td>Sep 2016</td>
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<td>18.1</td>
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<td>Dec 2016</td>
<td>18</td>
<td>18.9</td>
<td>11.2</td>
</tr>
<tr>
<td>Mar 2017</td>
<td>20.4</td>
<td>23</td>
<td>11.7</td>
</tr>
</tbody>
</table>

Fuel and Power industry also has its contribution to the development of the country. Doreen first offered share to public in 2016 and United did in 2015. Doreen’s share price has an increasing trend and growing steadily. Nonetheless, United’s share price is fluctuating and it indicates the volatility of its share price is rigorous. This analysis states that United’s decision to go public is not very profitable but for Doreen, IPO is quite a good chance to enhance its capital.

D. Information Technology (IT) Sector

Fig. 3. Closing price graph of the selected companies of Fuel and Power industry

Recently, IT sector is progressing very quickly in Bangladesh. IT Consultants Ltd offered share to public in 2016 with a face value of Tk. 10. Stock price of IT Consultants has been fluctuating ever since they went public and thus, instability of its share price is severe in this case. In the long run, IPO may not seem a good decision for IT Consultant Ltd.

E. Textile

Fig. 4. Closing price graph of the selected companies of IT industry
Textile industry has huge importance in economic growth of Bangladesh. It is one of the most important sectors which essentiality is noteworthy. Dragon Sweater and Spinning Ltd, and Evince Textile Ltd became public limited company in 2016 and C&A Textiles Ltd became public in 2015. Dragon Sweater and Spinning’s share price has been going up and down and during 3rd quarter of 2016 the share price almost got down to its face value which indicates the volatility of the share price to be very severe. On the other hand, Evince Textile’ share price is increasing very slowly and there is a possibility of its decision to make IPO, to be successful in future. Even though C&A Textile started with an increasing share price but during 2016 and end of 2015 its share price went lower than its face value which shows an unsuccessful decision to go public. Selling share below face value means instability of its share price. Therefore, not all companies can increase their capital by making IPO.

IV. CONCLUSION

IPO is a great way of enhancing capital; especially for those companies which do not have market evaluation. It is also a chance for a company to become public limited company and get known as listed company. Entering into the market has both advantages and disadvantages. It can help gather extra capital needed for company but disadvantages may bring a company to an end. Thus, before taking the decision to go public, a company needs to analyze whether the advantages of it overrun its disadvantages or not [7].

Going public helps increase capital, employee commitment, increasing public reputation and etc. However, after going public, a company becomes liable to its shareholders. Moreover, it is time consuming and not an easy process. Market swing is also associated with IPO.

Analysis on IPOs of DSE shows that some of the companies are successful in making IPO but some of them even selling below their face value. The share price volatility gets severe when company share price fluctuates often. Therefore, before going public, a company needs to consider both pros and cons of IPO and reach a decision keeping in mind that advantages should be more than its disadvantages.

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Deficit Financing Leads to Crowding Out: Bangladesh Perspective

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ABSTRACT

The crowding out effect is an economic theory stipulating that rises in public sector spending drive down or even eliminate private sector spending. Though the economy of our country is getting better day by day. Still we lack the funds we need to make our economy more strong as a result the government relies on deficit financing. My opinion towards deficit financing in Bangladesh is that the government takes loans from many sources but it puts an impact on many business industries, banks as well as the economy of country. As the budget deficit has increased during the last few years but the government finances the deficit money from both internal and external sources for the development of the country we can also see its impact on the economy of our country.

Keywords: Debt and Deficit over time, Debt to GDP Ratio, Deficit Financing, Government Spending to GDP, Inflation Rate, Public Debt and Crowding Out Effect.

Methodology: The information are based on secondary sources. The information are taken from Bangladesh Bank official website, Ministry of Finance Budget report, Bangladesh Bureau of Statistics, The Daily Star and The Financial Express newspaper.

Introduction

Deficit Financing: Deficit financing occurs when a government spends more money than it receives as revenue. The difference is being made up by borrowing or minting new funds. High public debt can be detrimental for a country in many ways. It will decrease the investment in securities such as bonds, stocks, treasury bills etc. Investors will look for short term debt finance with more interest rate as the interest rate of deposit or finance decreases. People will consume more than they can save as the GDP will decrease as the public debt increases. Also the European Central Bank in their working paper published in 2010 the writers argued that high public debt is very dangerous for economic growth, in addition public debt and economic growth have a negative relationship. For example, we can look in our country’s debt to GDP statistics for over 10 years (Bangladesh Bank, 2016).

Fig. 01. Bangladesh Government Debt to GDP Ratio

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>13.86</td>
</tr>
<tr>
<td>2011-12</td>
<td>14.2</td>
</tr>
<tr>
<td>2012-13</td>
<td>15.28</td>
</tr>
<tr>
<td>2013-14</td>
<td>15.79</td>
</tr>
<tr>
<td>2014-15</td>
<td>16.01</td>
</tr>
<tr>
<td>2015-16</td>
<td>16.6</td>
</tr>
</tbody>
</table>

Fig. 02. Bangladesh Government Public Debt in Billions

<table>
<thead>
<tr>
<th>Year</th>
<th>Public Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>91</td>
</tr>
<tr>
<td>2007</td>
<td>141</td>
</tr>
<tr>
<td>2008</td>
<td>142</td>
</tr>
<tr>
<td>2009</td>
<td>173</td>
</tr>
<tr>
<td>2010</td>
<td>248</td>
</tr>
<tr>
<td>2011</td>
<td>345</td>
</tr>
<tr>
<td>2012</td>
<td>325</td>
</tr>
<tr>
<td>2013</td>
<td>410</td>
</tr>
<tr>
<td>2014</td>
<td>433</td>
</tr>
</tbody>
</table>

From the above Fig. 01 and 02, we can see that in recent time the Debt to GDP ratio has decreased but on the other hand due to budget deficit the public debt of our country has increased rapidly over these 9 years. The government now has taken more loans from banks and other financial institutions especially from the banks also the spending amount is increasing for the development of the country and its people. In addition, due to not thinking about the interest rate from external sources is the reason we can see for high public debt. It has put an impact on the economy of our country. In short we can say that higher public debt can be detrimental for a country (Bangladesh Bank, 2016).
1. **Budget Deficit and Economic Growth of Bangladesh:**

There are many reasons that are responsible for budget deficit and they are given below –

1.1 **Dependency on VAT:** As we can during the few years budget that the government is more dependent on VAT than Tax from income and profit. From the year 2014 to 2017 budget VAT has added 36.7%, 36.5%, 35.8% of all total NBR revenue during these 3 years of budget. So we can say that the revenue collection is mainly dependent on VAT rather than Tax from income and profit. It is also due to less people are paying tax that the government has to depend on VAT (Budget in brief 2016-17 EN. 2015).

1.2 **Reluctance in paying Tax:** People are reluctant to pay tax as taxation procedure and documentation are not so efficient in our country. Also many people do not want to pay tax. Tax is direct income for the government but we are getting less direct income than indirect income (VAT). As the tax rate is high on income people try to avoid paying tax (Showeb, 2014).

1.3 **Taking money from banks, financial institutions and external sources:** During the years of 2014, 2015 and 2016 the government taking loans banks and financial institutions and external sources can be seen from the below graphical presentation-

   ![Loans Taken by the Government](image)

   **Fig.03. Loans Taken By the Government**

From the above Fig. - 03 we can see that as budget deficit increases during these 3 years, the required amount of money needed by the government is financed by these 3 types of loans (Budget in brief 2016-17 EN. 2015).

1.4 **Government Spending To GDP:** Even though GDP has recorded of 7.05 but when we see the statistics of budget expenditure to GDP we see another picture.

   ![Government Spending to GDP](image)

   **Fig.04. Government Spending to GDP**

In the above Fig. – 04, we can see that the spending has recorded 16.6 percent in 2015 only in 2007 it was the lowest 12.16 percent from 2008 it is rising but it is expected to slightly decrease at the end of 2016 it is 15.96 percent (Budget in brief 2016-17 EN. 2015).

1.5 **Inflation Rate:** Budget deficit also affects the inflation rate of our country. From the below graph we can get a better picture of it.

   ![Inflation Rate](image)

   **Fig.05. Bangladesh Inflation Rate**

It was forecasted that the inflation rate will be 5.3 percent but the actual rate was 5.92 percent. Even for the next 4 years it is expected the inflation rate will be 5.5 to 4.8 percent (Inflation, 2016).

Even the picture we get in Fig. 01 and 02 it is due to Budget Deficit and it will always be in the way of economic growth of Bangladesh or any country.
Crowding Out Effect: The crowding out effect describes the idea that large volumes of government borrowing push up the real interest rate, making it difficult or close to impossible for individuals and small companies to obtain loans. Also the changes in supply and demand of loans due to change in interest rate. From the graph below we can see the picture.

![Crowding Out Effect Graph](image)

From the year 2014 to 2016 government demand for loans has increased so does the supply for it. It is because of increase in deposit rate even though the central bank has ranged it up to 5 percent.

**Discussion**

1. Government finances budget deficit by issuing bonds, T-bills, loans from banks, financial institutions and external sources by external sources we mean, World Bank, IDB, ADB, IMF. No matter what the interest is government takes loans from these institutions or banks to meet up the deficit. As we know government is the largest borrower according to Loanable Theory and the demand and supply relationship is inelastic.

2. The graphical presentation of increase in debt and deficit over time is given below –

![Debt and Deficit over Time](image)

3. Sources of Deficit financing are given below –
   - Banks
   - Financial institutions
   - External Sources like, World Bank, IDB, ADB and IMF etc.

4. The impact of debt financing on Middle income group is quiet large in our country. As most of the people are categorized in middle income group they are the worst sufferer. Even though the standard of living for middle class group has increased according to BCG. Middle class group income has increased so their purchase power. In their research they found that average income of this class is USD $5,000 on annual. Their purchase power on credit payment, affordable loans and higher purchase form of payments has increased. Mostly the middle income class group deposits more money as a result they are the sufferer if there is a decrease in deposit rate they save less money and use it for consumption. Even we can see most of them buy securities from the capital market as there is higher interest rate of return (Hashim, 2015).

5. Government deficits does not crowd out consumer and investment spending because most of the money that are supplied comes from consumer and investment spending. Government has to classify in which sector they have to spend more money or allocates certain amount of money for all the sectors in the budget. Also consumers are the highest supplier of money for the government via banks.
capital markets, financial institutions etc.in our country.

Conclusion

In short, we can say that deficit financing is not very good for any country or the government. It creates an obstacle for the economic and social development of a country. Even so deficit financing is needed for the remaining amount of money a government needs for the development of the country. From Bangladesh perspective we have seen that even the inflation rate is low but the GDP is 7.05 percent which is the highest GDP in our country. Also for the economic development government finance deficit both from internal and external sources.

References


Mutual Fund Valuation: Fair Value Pricing Practice in the Context of Bangladesh

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Abstract - Mutual Fund (MF) is an investment vehicle that is made up of a pool of funds collected from many investors for the purpose of investing in securities such as stocks, bonds etc. This study is fully based on primary data about MF and the five point Likert Continuous Scale assuming 3.0 as a standard yardstick has been used. Fair value practice in mutual fund valuation is examined on estimation of fair value, role of fair value method and functions, duties and role of board of directors. And I tried to examine the benefits of practices of fair value in Bangladesh. I found that score of fairness of estimation and effective role of fair value method recorded 4.12 and 3.92 respectively and the third variable scored 3.97. 80.78 percent respondents agreed to offer right to the advisory committee for monitoring significant events. Item wise score also shows satisfactory position. From these recorded scores, I conclude that mutual fund needs to apply fair value method in their fund valuation. It is also found that the score of fair value practices in Bangladesh at mutual fund valuation recorded 3.92 and one item scored the highest position (4.59) among 26 items. This item emphasises on fair value pricing for all mutual fund companies in Bangladesh. An interesting thing is that there was a similarity in percentage in using of Net Asset Value (NAV) method with periodical valuation as 78.85 percent respondents think that NAV method is now being used in Bangladesh. Recently GAAP has increasingly called for use of fair value measurements for certain industries such as brokerage houses and mutual funds.

Keywords - Fair value, mutual fund, net asset value (NAV)

I. INTRODUCTION

A mutual fund is a specialized collective investment scheme. It invests a pool of money which is collected from the investors with the purpose of investing in various securities like stocks, bonds, money market instruments and other similar assets. It is professionally managed investment schemes. This ensures a diversified portfolio for the investors at much less efforts than through purchasing individual stocks and bonds. Mutual funds really captured the public’s attention in the 1980s and ‘90s when mutual fund investment hit record highs and investors saw incredible returns. We look at the evolution of this investment vehicle, from its beginnings in the Netherlands in the 18th century to its present status as a growing, international industry with fund holdings accounting for trillions of dollars in the United States alone. Historians are uncertain of the origins of investment funds; some cite the closed-end investment companies launched in the Netherlands in 1822 by King William I as the first mutual funds, while others point to a Dutch merchant named Adriaan van Ketwich whose investment trust created in 1774 may have given the king the idea Ketwich probably theorized. The name of Ketwich's fund, Eendragt Maakt Magt, translates to “unity creates strength”. The next wave of near-mutual funds included an investment trust launched in Switzerland in 1849, followed by similar vehicles created in Scotland in the 1880s. The Boston Personal Property Trust, formed in 1893, was the first closed-end fund in the U.S. The creation of the Alexander Fund in Philadelphia in 1907 was an important step in the evolution toward what we know as the modern mutual fund. A momentous year in the history of the mutual fund, 1928 also saw the launch of the Wellington Fund, which was the first mutual fund to include stocks and bonds, as opposed to direct merchant bank style of investments in business and trade.

II. LITERATURE REVIEW

At the global level, valuable studies are available on mutual fund and related sectors on various aspects. But such studies are not many in Bangladesh especially in the aspect of mutual fund valuation with special reference to fair value. In such a context a brief review on some selected studies are made below with reference to aspect of mutual fund performance and associated risk and comparison of performance between public – private mutual fund. Soderlind et al. (2000) evaluated the relationship between mutual funds performance and size of funds in the Swedish market. They used regression model as a research tool. They stated that there was a survivorship bias in this relationship and due to this bias performance evaluation showed mixed results, means better performance was achieved when we purchased equity funds which were smaller in size. Bangash (2012) attempted to analyze the performance of European mutual funds and impact of fees and other expenses on this performance. After screening, out of 296 open-ended mutual funds Sample of 122 equity mutual funds was taken for the period of June 1990 December 2009. Ali et al (2012) attempted to evaluate the performance of mutual funds in Pakistan with an aim to investigate the rate of returns of mutual funds and effectiveness of regulating bodies to minimize the risk involved in these funds. Sharp and Treynor ratios were used as research tool. Results suggested that selected mutual funds were not performing well as compared to market returns (market portfolio) and
it might be due to the time limitation as data was taken for only five years.

Panwar & Madhumati (2006) identified the performance of 6 public sectors, 7 private sectors Indian sponsored & 5 private sectors foreign sponsored mutual funds of different net assets for the span of may 2002 to may 2005. They concluded that public & private (both Indian & Foreign) mutual funds vary statistically in terms of standard deviation, average variance & average COV. S. Poongavanam (2011) evaluated the performance of public & private sector mutual funds. 340 schemes were covered for the period of 2003-07 relating to debt, money market, equity & balanced category to measure the risk & return. While conducting hypothesis testing she found that returns of public equity funds are less than private equity funds. The returns of private debt funds are the lowest. Public balanced funds have lowest risk return per unit return ratio & public debt category has the highest.

Khorana (1996) has shown that in the mutual fund industry, effective fund governance can be facilitated by “internal” (board) or “external” (fund inflows) sources. (Wellman and Zhou 2005) indicate that board quality is the most important factor to explain mutual funds’ performance among all possible fund governance factors. Gomes (2000) says there are both costs and benefits associated with controlling shareholders leading to a potential conflict of interest with minority owners for two principal reasons. First, regulations do not effectively protect the rights of minority shareholders. Second, the governance structure in many countries potentially makes controlling shareholders. From the above review, we seems that, most of study haven been done on measurement of mutual fund performance and associated risk, comparison of performance between public – private mutual funds, and also some study done on corporate governance of mutual funds. But extensive research work is not done on valuation procedure of mutual fund and methods of estimating value of mutual fund. But, those are very necessary for fund managers, potential investors and related stakeholders to take their respective decision. In this paper, we try to examine and evaluate the effectiveness of valuation procedure and methods of valuation of mutual fund and effective role of fund manager activities.

III. OBJECTIVES OF THE STUDY

The present study has been designed to examine the mutual fund valuation, especially fair value practice in Bangladesh. In such a context the following were taken as the major objectives:

- To examine the role of fair value practice in mutual fund valuation.
- To evaluate the effectiveness of functions, duties and role of board of directors for fair value application on mutual fund valuation.
- To identify the effectiveness of fair value estimation.
- To understand the implementation of fair value practice in Bangladesh.

IV. METHODOLOGY

The present study is fully based on primary data. A self structured questionnaire has been designed as titled “Mutual Fund Valuation: Aspect with Special Reference to Fair Value and Bangladesh Context” containing 26 items to be scored on the five point rating scale as: Strongly Agree (SA) = 5, Agree (A) = 4, Neutral (NT) = 3, Disagree (DA) = 2, and Strongly Disagree (SD) = 1 used to collect data. 104 respondents were selected as sample for the study. Data are collected from president, vice – president, and senior executives of various brokerage houses and asset management company in the Bangladesh and chartered accountants of various auditfirms.

There were four variables such as estimation of fair value, role of fair value method & functions, duties, role of board of directors and fair value method practices in Bangladesh and those 26items have been sub – grouped under above variables. Data were analyzed using five point Likert Continuous Scale and using mean (x) scores and percentage. A criterion mean of 3.00 was set for the study. In this case a mean score of 3.00 agree and a mean score below 3.00 was regarded as disagree.

V. IMPORTANCE AN BENEFITS OF MUTUAL FUND AND ROLE OF FAIR VALUE ON MUTUAL FUND VALUATION

Among all investment options, mutual funds are one of the best alternatives for the people lacking professional knowledge and time to invest in stock, bonds and other directly. Investors can choose from large number of schemes offered by mutual funds. It improves the risk return profile of the portfolio by reducing capital depreciation and poor dividends.

Inaccurate valuation of a fund’s underlying portfolio securities and other assets can give rise to some serious issues. If portfolio securities are not valued appropriately, one group of shareholders (either sellers of fund shares or buyers of the shares) will gain a windfall at the expense of the other group. A robust and consistent valuation process can help ensure that all fund shareholders are treated equitably and is critical for effective portfolio management. Valuation is one of the most significant areas
of potential risks for funds, particularly those that hold complex or thinly traded securities that must be “fair valued”.

### TABLE 1: FINDING FROM AN EMPIRICAL STUDY ON ROLE OF FAIR VALUE METHOD AND ANALYSIS

<table>
<thead>
<tr>
<th>Sl.</th>
<th>Items of comments</th>
<th>SA</th>
<th>A</th>
<th>NT</th>
<th>DA</th>
<th>SDA</th>
<th>N</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>NAV statistics can help directors to identify the issues with valuing securities.</td>
<td>30</td>
<td>46</td>
<td>24</td>
<td>0</td>
<td>4</td>
<td>104</td>
<td>4.25</td>
</tr>
<tr>
<td>02</td>
<td>Directors can monitor the change in the number of fair value valuation by fair value trend analysis.</td>
<td>16</td>
<td>38</td>
<td>36</td>
<td>14</td>
<td>0</td>
<td>104</td>
<td>3.82</td>
</tr>
<tr>
<td>03</td>
<td>The advisor and board need to understand the vendor’s pricing process before using of matrix pricing.</td>
<td>24</td>
<td>46</td>
<td>22</td>
<td>10</td>
<td>2</td>
<td>104</td>
<td>3.98</td>
</tr>
<tr>
<td>04</td>
<td>The concerned authority need to understand and assess the shortcoming of matrix pricing.</td>
<td>12</td>
<td>34</td>
<td>40</td>
<td>14</td>
<td>4</td>
<td>104</td>
<td>3.56</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>410</td>
<td>656</td>
<td>366</td>
<td>76</td>
<td>10</td>
<td>104</td>
<td>3.92</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td></td>
<td>27.00</td>
<td>43.21</td>
<td>24.11</td>
<td>05.00</td>
<td>0.66</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A designing, efficiency and fairness of Fair Value pricing in general were evaluated with reference to 3 main variables on the faces of perspective of respondents taken on 5 point Likert Continuous Scale. The 3 (three) main variable were: Estimation of Fair Value, Role of Fair Value Method, and Functions, Duties, Role of concerned authority.

Effective and efficient role of fair value method was evaluated with reference to 4 sub – variables. Taking all score recorded on these variables the average score computed at 3.91. This reveals that effectiveness and efficiency of fair value pricing method is also good. Table also shows that, on the average 24.11 percent of respondents remain neutral in giving opinion i.e. they responded not positively or negatively and that 27.00 percent respondents consider the role of fair value method as very good, 43.21 percent consider it good, 05.00 percent doesn’t agree with effectiveness and 0.66 percent strongly disagree as to efficiency as to method used in estimation as fair.

Further, one analysis of sub – variables reveals that average score of sub – variables showing to quite satisfactory position are: NAV statistics can help directors to identify the issues with valuing securities, the advisor and board need to understand the vendor’s pricing process before using of matrix pricing. In these two cases the average score recorded as 4.25 and 3.98 respectively. On the other hand, the concerned authority need to understand and assess the shortcoming of matrix pricing as opined as to some extend satisfactory as the score recorded as 3.56, which is the lowest among 04 sub – variables. Further, directors can monitor the change in the number of fair value valuation by fair valued trend analysis reveal to be good as the score relevant to this variable recorded at 3.82 on the average.

### VI. METHODS OF MUTUAL FUND VALUATION AND FUNCTION, DUTIES AND ROLE OF BOARD OF DIRECTORS

A. **Valuation Method**

There are two methods of mutual fund valuation:

1. **Net Asset Value (NAV)**

   The easiest way to find out the price of a mutual fund is to look at its net asset value (NAV). NAV is the total value of a mutual fund's assets, less all of its liabilities. When you buy and sell mutual funds, you typically do so at the NAV.

   For most mutual funds, the NAV is calculated daily since a mutual fund's portfolio consists of many different stocks. As each one of these stocks may be changing in price frequently throughout the day, an exact value of a mutual fund is difficult to determine.

2. **Fair Value (FV) Method**

   Fair value pricing (FVP) is a daily adjustment made to the net asset value of mutual funds, when prices of the underlying securities have gone stale. FVP is required by the SEC for all mutual fund companies. Funds must report the “fair value” of their assets, as defined in ASC 820, in each annual and semi-annual report and must include information intended to show the levels of objectivity and transparency of the information used to determine that value.

   Fair value is defined in the International Standards on Auditing (ISAs) as “the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an parties in an arm’s length transaction”.

   The framework established by ASC 820 and IFRS 13 not only defies fair value as an exit price but also explicitly requires a market-based price where available rather than an entity-specific price. This implies that the fair value principles are applied uniformly and universally, regardless of the nature of the owner. Fair value is therefore a market-based measure. Recently GAAP has increasingly called for use of fair value measurements in the financial statements. This is often referred to as the fair value principle. Fair value information may be more useful than historical cost for certain types of assets and liabilities and in certain industries. For example, companies report many financial instruments, including derivatives, at fair value. Certain industries, such as brokerage houses and mutual funds, prepare their basic financial statements on a fair value basis.
B. Responsibility of Board

Fund directors have a statutory obligation to determine the fair value of securities for which market quotations are not readily available; however, boards can and do delegate the day-to-day responsibility for determining the valuation of particular securities to the fund’s adviser. Although directors themselves are rarely the subject of enforcement actions by the SEC, directors do have the ultimate responsibility for valuation. The SEC has held directors responsible for failing to monitor the liquidity of a fund’s portfolio securities, failing to adjust a fair value when an issuer’s financial condition and liquidity were deteriorating; and failing to correct the mispricing of securities in a fund’s portfolio. Because of the importance of valuation coupled with the general lack of day-to-day participation, boards strive to find the appropriate balance between delegation and participation in the valuation process. As in ASR 113, the SEC again emphasized that: (i) the data and information considered by the directors in their fair valuation analysis should be retained and available for inspection by the auditors; (ii) directors have a responsibility to “continuously” review the appropriateness of any valuation method used; and (iii) the directors may appoint persons to assist them in their fair value determinations and to make the actual calculations.

### TABLE – II: FINDING FROM AN EMPIRICAL STUDY ON FUNCTION, DUTIES AND ROLE OF BOARD OF DIRECTORS AND ANALYSIS

There are five (5) sub-variable for evaluating the effectiveness of functions, duties and role of board of directors in mutual fund valuation has been sub – divided into three categories, which are follows:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items of comments</th>
<th>SA</th>
<th>TA</th>
<th>DA</th>
<th>SDA</th>
<th>N</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Fair value look – back allows directors to compare the price of a security that was previously fair valued against a subsequent market price and it can help directors evaluate the quality of an adviser’s valuation process.</td>
<td>14</td>
<td>46</td>
<td>38</td>
<td>2</td>
<td>4</td>
<td>104</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>70</td>
<td>184</td>
<td>114</td>
<td>04</td>
<td>04</td>
<td>376</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td></td>
<td>18.62</td>
<td>48.94</td>
<td>30.32</td>
<td>1.06</td>
<td>1.06</td>
<td>100</td>
</tr>
</tbody>
</table>

The above table shows that, sub – variable showing to quite satisfactory position is: effectiveness of fair value look-back, which helps directors to compare the price of securities and evaluate the quality of an advisor’s valuation process. In this case the average score recorded as 3.97. This reveals that effectiveness and efficiency of board of directors is increased as good level. Table also shows that, on the average 30.32 percent of respondents remain neutral in giving opinion i.e. they responded not positively or negatively and that 18.62 percent respondents consider the effectiveness of board will be as very good, 48.94 percent consider it good, 01.06 percent doesn’t agree with effectiveness and 01.06 percent strongly disagree as to efficiency as to the board of directors.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items of comments</th>
<th>Daily</th>
<th>Periodically</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Mutual fund must need to calculate their Net Asset Value (NAV)</td>
<td>22</td>
<td>82</td>
<td>104</td>
</tr>
<tr>
<td>02</td>
<td>Are the pricing service periodically reviewed by director?</td>
<td>32</td>
<td>72</td>
<td>104</td>
</tr>
<tr>
<td>03</td>
<td>Have adviser right to monitor for significant events that might require securities to be fair valued?</td>
<td>20</td>
<td>84</td>
<td>104</td>
</tr>
<tr>
<td>04</td>
<td>Can mutual fund board delegate the fair value pricing responsibility to other (valuation committee / other) to react quickly to fair valuation events and situations.</td>
<td>104</td>
<td>64</td>
<td>40</td>
</tr>
</tbody>
</table>

### TABLE – III

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items of comments</th>
<th>Yes</th>
<th>No</th>
<th>N</th>
<th>Percentage of</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Are the pricing service periodically reviewed by director?</td>
<td>32</td>
<td>72</td>
<td>104</td>
<td>69.23</td>
</tr>
<tr>
<td>02</td>
<td>Have adviser right to monitor for significant events that might require securities to be fair valued?</td>
<td>20</td>
<td>84</td>
<td>104</td>
<td>80.78</td>
</tr>
<tr>
<td>03</td>
<td>Can mutual fund board delegate the fair value pricing responsibility to other (valuation committee / other) to react quickly to fair valuation events and situations.</td>
<td>40</td>
<td>64</td>
<td>104</td>
<td>61.54</td>
</tr>
</tbody>
</table>

### TABLE – IV

From the table, we say that 78.85 percent respondents are considered NAV now calculate at periodically and 21.15 percent respondents are considered NAV now calculate at daily basis. But NAV need to calculate daily basis, which provide timely actual and approximately accurate information to the investors and concerned parties of the mutual fund.
VII. METHODS OF ESTIMATING FAIR VALUE

The objective of using a valuation technique is to estimate the price at which an orderly transaction to sell the asset or to transfer the liability would take place between market participants and the measurement date under current market conditions. Three widely used valuation techniques are: [IFRS 13:62]

1. Market Approach

The Market Approach includes actual observations of the target securities, the use of “market multiples” based on observations of similar securities, adjusted or unadjusted, and the use of pricing matrices that rely on relationships to a more liquid benchmark. That means under this approach, prices and other relevant information generated by market transactions involving identical or comparable(similar) assets, liabilities, or a group of assets and liabilities. When using multiple valuation techniques that produce a range of valuations, the reporting entity must maximize the use of relevant market data and minimize the use of unobservable inputs to determine the point within the range of valuations that best estimates the exit price in an orderly market based on current market conditions.

2. Income Approach

The Income Approach includes discounted cash flow models and the use of option-pricing models. Under Income Approach, converts future amounts (cash flow or income and expense) to single current (discounted) amount, reflecting current market expectations about those future amounts. For an environment without an efficient capital market the definition of the discount rate is even more problematic than the projection of cash flows.To define the value of equity the discount rate is the expected rate of return on equity which attracts investors.

3. Cost Approach

Under cost approach, reflects the amount that would be required currently to replace the service capacity of an asset (current replacement cost)

The type of valuation model, market approach or income approach used for every class of asset must be disclosed and the means of combining a market approach with an income approach must be disclosed as well.

<table>
<thead>
<tr>
<th>Sl.</th>
<th>Items of comments</th>
<th>SA</th>
<th>A</th>
<th>NT</th>
<th>DA</th>
<th>SA</th>
<th>N</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Description of the methodologies in determining value</td>
<td>36</td>
<td>32</td>
<td>30</td>
<td>6</td>
<td>0</td>
<td>104</td>
<td>4.32</td>
</tr>
<tr>
<td>02</td>
<td>Assumptions underlying model are time farmed on historical data.</td>
<td>10</td>
<td>40</td>
<td>42</td>
<td>12</td>
<td>0</td>
<td>104</td>
<td>3.77</td>
</tr>
<tr>
<td>03</td>
<td>Disclosure of procedure of approving fair value.</td>
<td>24</td>
<td>34</td>
<td>40</td>
<td>6</td>
<td>0</td>
<td>104</td>
<td>4.19</td>
</tr>
<tr>
<td>04</td>
<td>Disclosure of reasons for using pricing service.</td>
<td>40</td>
<td>28</td>
<td>28</td>
<td>6</td>
<td>2</td>
<td>104</td>
<td>4.29</td>
</tr>
<tr>
<td>05</td>
<td>Testing price valuation methodologies as produced</td>
<td>40</td>
<td>24</td>
<td>26</td>
<td>8</td>
<td>6</td>
<td>104</td>
<td>4.08</td>
</tr>
<tr>
<td>06</td>
<td>Review by valuation committee as to valuation methods.</td>
<td>26</td>
<td>40</td>
<td>28</td>
<td>10</td>
<td>0</td>
<td>104</td>
<td>4.08</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>880</td>
<td>792</td>
<td>582</td>
<td>96</td>
<td>8</td>
<td></td>
<td>4.12</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td>37.32</td>
<td>33.59</td>
<td>24.68</td>
<td>4.07</td>
<td>0.34</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fairness of estimation was evaluated with reference to 6 sub – variables. Taking all score recorded on these variables the average score computed at 4.12. This reveals that estimation fairness is good. Table also shows that, on the average 24.68 percent of respondents remain neutral in giving opinion i.e. they responded not positively or negatively and that 37.32 percent respondents consider the estimation method as very good, 33.59% consider it good, 4.07 percent doesn’t agree with fairness and 0.34 percent strongly disagree as to fairness as to method used in estimation as fair.

Further, one analysis of sub – variables reveals that average score of sub – variables showing to quite satisfactory position are: description of methodology used, disclosure of reasoning of using pricing method and disclosure of the procedure of approving fair value price. In these three cases the average score recorded as 4.32, 4.29 and 4.19 respectively. On the other hand, underlying assumptions on historical cost opined as to some extent satisfactory as the score recorded as 3.77, which is the lowest among 6 sub – variables. Further, test of valuation methodologies and reviewed of individual fair values or fair valuation methods by valuation committee reveal to be good as the score relevant to these variables recorded at 4.08 on the average.

VIII. MUTUAL FUND IN THE CONTEXT OF BANGLADESH

Mutual fund (MF) is a useful investment instrument in a capital market. But share market of Bangladesh is fully equity based and there is little scope to introduce any new financial instrument. In, 1980 the Investment Corporation of Bangladesh (ICB) became the pioneer in launching mutual funds in the capital market in the country. It was a
milestone step for investors in our capital market. The then first private organization, AIMS evolved its professional mechanism in, 1999 for organizing mutual funds in Bangladesh. In 2010 also the first ever open end mutual fund was floated in the capital market by the Prime Finance Asset Management Company and after that, various mutual funds came to the market. There are two different type of mutual fund operate in Bangladesh such as:

i. Open ended fund
ii. Close ended fund

Mutual funds have four-tiered structure in Bangladesh, which are following:

a. Sponsors – promoter of the company
b. Trustees – they hold the property of the mutual fund for the benefit of the unit holders
c. AMC’s - Asset Management Companies (AMCs) are authorized to act as issue and portfolio manager of the mutual funds which are issued under SEC (Mutual Fund) Rules.2001.
d. Custodian – who is registered with the SEC, holds the Securities of various schemes of the fund in its custody.

1. Acts and Rules Governing Valuation and Reporting of Mutual Fund:

It is prevalent that the mutual fund industry is still very small in Bangladesh, but it handles pool fund of large sum of money for a large number of investors. Thus corporate governance is very important in order to protect the rights of the shareholders. These mutual fund mainly operated under the BSEC (Mutual Fund) Rules-2001, Trust Act 1882, and Registration Act1908.

<table>
<thead>
<tr>
<th>Sl.</th>
<th>Items of comments</th>
<th>SA</th>
<th>A</th>
<th>NT</th>
<th>DA</th>
<th>SDA</th>
<th>N</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Fair value pricing is necessary for all mutual fund companies in Bangladesh to protect mutual fund shareholders by more accurately reflecting a mutual fund true value of its pricing time.</td>
<td>62</td>
<td>26</td>
<td>12</td>
<td>4</td>
<td>0</td>
<td>104</td>
<td>4.59</td>
</tr>
<tr>
<td>02</td>
<td>Fair value pricing is mandatory for all mutual fund companies in Bangladesh.</td>
<td>34</td>
<td>22</td>
<td>24</td>
<td>24</td>
<td>0</td>
<td>104</td>
<td>3.83</td>
</tr>
<tr>
<td>03</td>
<td>The board receive a periodic report reflecting the result of actual sales prices compare to the most recent price provided by the pricing service.</td>
<td>16</td>
<td>48</td>
<td>26</td>
<td>10</td>
<td>4</td>
<td>104</td>
<td>3.79</td>
</tr>
<tr>
<td>04</td>
<td>The board use a valuation committee or other protocol to react quickly to fair valuation events and situations.</td>
<td>14</td>
<td>50</td>
<td>36</td>
<td>4</td>
<td>0</td>
<td>104</td>
<td>4.09</td>
</tr>
<tr>
<td>05</td>
<td>The valuation committee frequently use review individual fair values or fair valuation methods.</td>
<td>14</td>
<td>30</td>
<td>38</td>
<td>20</td>
<td>2</td>
<td>104</td>
<td>3.52</td>
</tr>
<tr>
<td>06</td>
<td>The valuation committee approves fair value price compare to the next available market quotation or sale.</td>
<td>18</td>
<td>44</td>
<td>32</td>
<td>8</td>
<td>2</td>
<td>104</td>
<td>3.94</td>
</tr>
<tr>
<td>07</td>
<td>The fund managers adopt written valuation policies and procedures identifying all pricing sources and valuation methodologies by type of security.</td>
<td>10</td>
<td>34</td>
<td>36</td>
<td>24</td>
<td>0</td>
<td>104</td>
<td>3.44</td>
</tr>
<tr>
<td>08</td>
<td>The board receive a periodic report for reflecting the results of testing.</td>
<td>20</td>
<td>50</td>
<td>26</td>
<td>8</td>
<td>0</td>
<td>104</td>
<td>4.05</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>940</td>
<td>1216</td>
<td>690</td>
<td>204</td>
<td>8</td>
<td>3.92</td>
<td></td>
</tr>
<tr>
<td>Percentage (%)</td>
<td></td>
<td>30.74</td>
<td>39.76</td>
<td>22.56</td>
<td>6.67</td>
<td>0.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Practice of fair value in Bangladesh was evaluated with reference to 8 sub – variables. Taking all score recorded on these variables the average score computed at 3.92. This reveals that a practice of fair value in Bangladesh will be good. Table also shows that, on the average 22.56 percent of respondents remain neutral in giving opinion i.e. they responded not positively or negatively and that 30.74 percent respondents consider the application of fair value will provide better information to concerned parties as very good, 39.76 percent consider it good for interested users, 6.67 percent doesn’t agree with application benefits and 0.26 percent strongly disagree as to continue of fair value practice.

Further, one analysis of sub – variables reveals that average score of sub – variables showing to quite satisfactory position are: necessities of fair value pricing for all mutual fund in Bangladesh, use of valuation committee or other protocol, the board also receive report for testing result. In these three cases the average score recorded as 4.59, 4.09 and 4.05 respectively. On the other hand, adoption of written valuation policies and procedure and methodologies opined as to some extend satisfactory as the score recoded as 3.44, which is the lowest among 8 sub – variables. Further, mandatory of fair value pricing in Bangladesh, the board receiving a periodic report for comparing most recent price provided by pricing service with actual price, use of review report by valuation.
committee on fair value or fair valuation methods, approval of fair value price by valuation committee reveal to be good as the score relevant to these variables recorded at 3.83, 3.79, 3.52 and 3.94 respectively on the average.

<table>
<thead>
<tr>
<th>Sl. N0.</th>
<th>Items of comments</th>
<th>Yes</th>
<th>No</th>
<th>N</th>
<th>Percentage of</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Are the adviser's uses a secondary pricing service on a periodic basis to test the valuation being received?</td>
<td>58</td>
<td>46</td>
<td>104</td>
<td>55.77</td>
</tr>
<tr>
<td>02</td>
<td>Can portfolio manager participate in the override decision?</td>
<td>54</td>
<td>50</td>
<td>104</td>
<td>51.92</td>
</tr>
</tbody>
</table>

**TABLE VII**

From the above table, we seems that, 55.77 percent respondent agree with use of secondary pricing service to test the valuation by the adviser, but 44.23 percent of respondents disagree with it. And it also shows that, 51.92 percent of respondents think that, portfolio manager need to participate in override decision but 48.08 percent respondents are also disagreed with it.

<table>
<thead>
<tr>
<th>Sl. N0.</th>
<th>Items of comments</th>
<th>NAV</th>
<th>FV</th>
<th>N</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Which pricing method are used in Bangladesh</td>
<td>82</td>
<td>22</td>
<td>104</td>
<td>78.85</td>
</tr>
</tbody>
</table>

**TABLE VIII**

Above table reveal that, 78.85 percent respondent considered that NAV method at now has been used at mutual fund valuation in Bangladesh. But previous analysis part (table-6) shows that, benefits of fair value practice in Bangladesh will be better for concerned parties.

IX. **CONCLUSION**

Mutual fund (MF) is a very useful investment mechanism in a capital market. A developed capital market consists of varieties of investment instruments and mutual fund is one of them. But the share of mutual funds in Bangladesh's capital market is very low. The market is fully equity based and there is little scope to introduce any new financial instrument. But mutual fund can be a good investment alternative in this undiversified market. Mutual funds are operated by money managers, who invest the fund's capital and attempt to produce capital gains and income for the fund's investors. A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus. From the evaluation of findings of the empirical study on mutual fund valuation, it is seem that, all four variables such as role of fair value method, estimation of fair value & functions, duties, role of board of directors and fair value method practices in Bangladesh showing quite satisfactory positions and taking score recorded on these variables the average score computed at 3.92, 4.12, 3.97 and 3.92 respectively. These reveal that effectiveness and efficiency of fair value pricing method is good, estimation fairness of fair value is very good and it's scored (4.12) the highest position among 4 variables, effectiveness and efficiency of board of directors will increase as good level, practices of fair value pricing method in Bangladesh will be good for reflecting a mutual fund true value of its pricing time. Individual item wise evaluation of findings reveals that one item scored the highest position (4.59) among 26 items. This items emphasis on fair value pricing is necessary for all mutual fund companies in Bangladesh to protect mutual fund shareholders. It is also found an interesting thing that there was a similarity in percentage in using of Net Asset Value (NAV) method with periodical valuation as 78.85. Because NAV is calculated at periodically and also 78.85 percent respondents think that NAV method is now being used in Bangladesh. If the board receive a periodical report reflecting the result of actual sales prices compare to most recent price provided by pricing service and valuation committee frequently use review individual fair values or fair valuation methods, then the fair value pricing method will produce true value of the fund. It will be the symbol of confidence of shareholders of mutual fund in the capital market of Bangladesh.
REFERENCES


Knowledge Management in the Hotel Sector: A Review of Knowledge Management Practice in General and in the Hotel Sector Specifically

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Abstract - Over the last two decades, many organizations have used knowledge management (KM) to extract, recycle, harness, share, and leverage knowledge for improved performance and competitive advantage, as in [1][2][3]. As reported in [4], multinational companies like British Petroleum, Chevron, Texaco, Schlumberger, IBM, etc. have used KM for many years, saving hundreds of millions of dollars (USD).

This paper reviews the current understanding of what constitutes KM (in general), and investigates if the hotel sector is using KM and whether it can generate results similar to those of other industries. To gain a full understanding of the evolution of KM and the most up-to-date KM status in the hotel sector (specifically), the paper reviews KM papers with both foci (general and hotel/hospitality sector-specific) in a reverse manner, the most recent research first and then earlier studies. This paper highlights significant opportunities for hotel companies that, by adopting KM, could realize improved profits and leverage competitive advantage.

However, limitations and barriers exist due to the complexity of hotel services. These make it much harder to structure and implement KM programs compared to the more structured (static) processes in, for example, manufacturing. In this regard, we learn from [5] that the hospitality sector has a negative reaction towards KM with [6] suggesting “KM hostility.”

Finally, this paper discusses the questions and research gaps that emerge through the process of reviewing the KM literature (both general and hotel sector-specific) and highlights the latest KM trends and directions in the hotel industry.

Keywords - Hotel companies, hotel management, knowledge management

I. INTRODUCTION

The hotel sector today is a very competitive environment. Changing demographics; guests’ demands for better deals, new and exciting experiences, and tailored service; and hotel company (mega) mergers (takeovers) all complicate the industry. The demand for management tools to simplify this complexity and add value is high. Complementing popular management tools, such as benchmarking, total quality management (TQM), the balanced scorecard (BSC), and supply chain management (SCM), knowledge management (KM) has become an important and highly regarded tool in several industries. However, despite the extensive body of research in the field of KM, much less research has been carried out in the hotel sector-specific KM domain. After omitting studies with a wider scope, for example, tourism and hospitality, over the past 20 years of the literature, only the four papers discussed below were found to have a hotel-specific KM focus. Some papers considered specific aspects of KM (e.g., knowledge sharing), rather than integrated KM systems; see [7][8][9][10][11][12][13]). However, this paper’s author is eager to understand what KM programs (models) are used by multinational hotel companies and the extent of their success. Despite a strong and steady stream of research in the general KM domain, hotel-specific KM research is sparse, not focused and disconnected. Furthermore, past research has not explored KM in multinational hotel companies on a global level in a holistic way. For example, no detailed research has been conducted to determine which KM programs (models) are used, how they have evolved over time, and whether or not hotel companies share and exchange their KM experiences. Filling this gap could greatly benefit hotel companies. According to [14]:

Knowing that major hotel companies generate yearly revenues of about USD 5-10 billion globally and assuming an improvement of 20%, the staggering value at stake is an enhancement of USD 2 billion. That is serious business. Hence, it is understandable that the use of KM in the global hotel industry—as in other industries—could mean hundreds of billions of dollars of improvement in profit.

Unsurprisingly, this view is supported by a case study [15] in which it is reported that the Ritz Carlton already practiced and implemented KM in the early 1990s. Reference is made to the increase in operational effectiveness and the tremendous performance improvement (the 1995 pre-tax return on investment was 5.3%, whereas in 2000 it had increased to 17.6%) [15, p. 27]. This, in itself, was a very significant achievement. Moreover, in relation to benchmarking financial performance against other brands (direct competitors in the luxury segment), it was found that the Ritz Carlton consistently outperformed all other hotel companies. What would be very interesting to know today is their current KM program and whether they have maintained, improved, replaced, integrated, or even dropped KM altogether. This is the juncture at which this paper’s author sees the research gap, and where he feels the insights generated can make a meaningful contribution and add value to the hotel sector.

Against this backdrop, the problem statement, as defined in the next section, is investigated.
A. Problem statement

The core aim of this review is to determine if and how multinational hotel companies use KM as a tool/program for improved performance.

The general objective of the study is to investigate the state of KM in the hotel industry through reviewing the most recent literature. Moreover, keeping the above-mentioned research aim in mind, the specific objectives of the current study are as follows:

a) To review the most recent literature to find out whether certain trends are present in hotel sector-specific KM.

b) To compare the recent hotel sector-specific and general KM literature to analyze whether similarities, patterns or overlaps are evident.

c) To investigate whether research and the hotel industry collaborate and exchange ideas on KM (e.g., findings, results, or experiences).

The remainder of this paper is organized as follows: firstly, the most recent KM literature is reviewed; secondly, the research, models, and procedures used in the reviewed papers are described; thirdly, the prior research is discussed; and, lastly, the implications, limitations, and future research directions are presented.

II. LITERATURE REVIEW

The literature review is organized to initially provide a wider overview of the KM literature in order to understand KM’s general development and evolution. An analysis is then undertaken of the most recent KM research to see where KM is currently standing. The third part involves drawing comparisons and conducting analysis to identify possible gaps, overlaps, and divergence from what constitutes KM’s core.

Fig. 1. Sources of research and insights informing this study.

Peter F. Drucker, one of the very early management experts, forecast that society and the economy would depend more and more on knowledge. From this idea, KM grew in popularity over the next 20–30 years to the present day. Both [16] and [17] referred to a change in society (with implications for the business environment). While [16] suggested that knowledge would become a key resource (for knowledge workers), [17] likewise referred to the fact that knowledge and knowledge assets would have a great impact as, through their use, companies would thus realize economic value. Another author [18] placed the beginnings of KM even earlier. He refers to Fritz Machlup [19] as his work and publications already projected the basic idea of KM, and to Kenneth J. Arrow [20] and [21] who in the 1960s and 1970s published research that had influence on KM in the organizational setting.

A. Complexity and diversity of the KM domain

Knowledge management (KM) relates to and is built based on a wide and complex field of disciplines. According to [22], this includes: organizational science; cognitive science; linguistics and computational linguistics; information technologies (e.g., knowledge-based systems, document and information management, electronic performance support systems, and database technologies); information and library science; technical writing and journalism; anthropology and sociology; education and training; storytelling and communication studies; and collaborative technologies (e.g., computer-supported collaborative work [CSCW], groupware, intranets, extranets, portals, and other web-based technologies).

This extensive list indicates that KM is a management tool with much complexity, scope, and depth. This also makes KM difficult to (fully) understand and hard to (successfully) implement. It is more like a philosophy which, according to the KM hierarchy [23], comprises data; information; knowledge; wisdom; and enlightenment and needs to be learned, practiced, understood, spread, and maintained.

B. What is knowledge?

The term “knowledge” is defined as information, understanding, or skill gained from experience or education, according to [24]. This general usage definition has been interpreted in various ways by different professionals in different cultures.

In addition to the overall understanding, the term “knowledge” has sub-divisions as explained in the four categories below (adapted from [25]):

(a) Codified knowledge (e.g., catalogue [26] or symbolic knowledge [27]) which is concerned with the information made available (by printing or publishing)

(b) Common knowledge (e.g., informal [28] or embedded knowledge [29]) which relates to routines and practices
(c) Social knowledge (e.g., social [26] or encultured knowledge [29]) which refers to relationships and cultural aspects
(d) Embodied knowledge (e.g., embodied knowledge [27][29], know-how [30], or process knowledge [26]) which could also be called “tacit knowledge” (competencies).

C. KM definitions

To gain a better understanding of how KM is defined, a two-step review was applied. Firstly, definitions from 12 highly regarded KM scholars were listed (Table 1), with the definitions then reviewed with the help of a tool.

<table>
<thead>
<tr>
<th>Author/s</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pettrash (1996)</td>
<td>KM is getting the right knowledge to the right people at the right time so they can make the best decision.</td>
</tr>
<tr>
<td>Bassi (1997)</td>
<td>KM is the process of creating, capturing and using knowledge to enhance organizational performance.</td>
</tr>
<tr>
<td>Hibbard (1997)</td>
<td>KM is the process of capturing a company’s collective expertise wherever it resides: in databases, on paper, in people’s heads – and distributing it to wherever it can help produce the biggest payoff.</td>
</tr>
<tr>
<td>Duhon (1998)</td>
<td>KM is ‘a combination of technology supporting a strategy for sharing and using both the brain power resident within an organization’s employees and internal and external information found in ‘information containers’ (primarily documents). The goal of KM is to simultaneously manage data, information, and explicit knowledge while leveraging the information resident in people’s heads (tacit knowledge) through a combination of technology and management practices’ (p. 9).</td>
</tr>
<tr>
<td>Wiig (1997)</td>
<td>The objectives of KM are ‘(a) to make the enterprise act as intelligently as possible to secure its viability and overall success, and (b) to otherwise realize the best value of its knowledge assets’ (p. 1).</td>
</tr>
<tr>
<td>Knapp (1998)</td>
<td>KM is ‘a set of processes for transferring intellectual capital (IC) to value processes such as innovation and knowledge creation, knowledge acquisition, organization, application, sharing, and replenishment’ (p. 3).</td>
</tr>
<tr>
<td>Liebowitz and Wilcox (1997)</td>
<td>KM is the ‘ability of organizations to manage, store, value, and distribute knowledge’ (Preface).</td>
</tr>
<tr>
<td>O’Dell and Grayson (1998)</td>
<td>KM is a conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that strive to improve organizational performance.</td>
</tr>
<tr>
<td>Beckman and Liebowitz (1999)</td>
<td>KM is the formalization of and access to experience, knowledge and expertise that create new capabilities, enable superior performance, encourage innovation and enhance customer value.</td>
</tr>
<tr>
<td>Abel and</td>
<td>The creation and subsequent management of an environment that encourages knowledge to be created, shared, learnt [sic], enhanced, organized and utilized for the benefit of the organization and its customers.</td>
</tr>
<tr>
<td>Gray Southon, Todd, and Seneque (2002)</td>
<td>KM practices are tools and approaches used to improve individuals’ ability to access knowledge that is held by others in an organization’ (p. 10).</td>
</tr>
<tr>
<td>Shelley (2007)</td>
<td>Leveraging, socializing and applying intellectual assets in context to co-create (mutual &amp; sustainable) value, stimulate learning and build capability.</td>
</tr>
</tbody>
</table>

The above definitions were uploaded to Wordclouds.com at <http://www.wordclouds.com>, a word cloud generator tool, to highlight the strongest words. This tool computes text/documents and counts repetitions of words, turning them into a word cloud for better visualization. The words used most frequently are large, while those used less frequently are small. The result in Fig. 2 shows the prominence of the following words: knowledge, information, right (related to time and people), value, organization, people, and performance.

**Fig. 2.** Word cloud application to KM definitions.

Through this visualization, knowledge and information are shown to be the foremost topics in the KM domain. However, the terms “knowledge” and “information” are often used interchangeably (with people often confused about or unaware of their respective meanings). The interchangeable usage is in error as information is organized data; on the other hand, knowledge comprises people’s understanding of how to act on that information. Information is data in context, but data on their own (i.e., no context) are not useful as what they relate to is unclear (e.g., I see the following numbers 0, 5, 6 and 7 but cannot understand their meaning but if I see the same numbers in the context of the exchange rate being 76.50 Bangladeshi taka (BDT) per US$1, the data become clear).

D. What is a knowledge hierarchy (pyramid)?
Three layers (i.e., data, information, and knowledge) were identified by [43] for how organizations manage knowledge. This basic model appears to have persisted to the current time, although it has become more refined over time. From [43]’s quite simple (three-layer) pyramid to [23]’s work, the key concept (data, information, and knowledge) has remained unchanged, although it has been added to by some authors. This model is widely debated and often challenged by KM professionals.

<table>
<thead>
<tr>
<th>TABLE II</th>
<th>KNOWLEDGE (DIMENSIONS) HIERARCHY (PYRAMID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Data</td>
</tr>
<tr>
<td>Information</td>
<td>Information</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Action/Reflection</td>
</tr>
<tr>
<td>Wisdom</td>
<td>Wisdom</td>
</tr>
<tr>
<td>Enlightenment</td>
<td>Enlightenment</td>
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</tbody>
</table>

Based on Table II, organizations need to collect (extract) data, put data into context (make sense of data) and turn data into (usable, i.e., required) knowledge. Although the conversion of information into knowledge is a controversial concept, the effective use of information for decision making requires the application of knowledge. Sustained high performance is the result of applying your knowledge assets to consistently achieve process improvement and competitive advantage which ultimately propel performance to the level of mastery (wisdom/enlightenment) [45].

**E. Evolution of the KM literature**

Citing several scholars, [46] suggests that KM can be segregated into three phases:

**First phase (prior to mid-1990s)**
- Techno-centric view of knowledge processes
- Existence of a priori knowledge in organizations
- Emphasis on “best practices” and “lessons learned”
- Focus on explicit knowledge codification and storage
- A person is recognized as a source of knowledge
- Knowledge-sharing processes are initiated and driven by management
- Search for “true knowledge”

**Second phase (mid-1990s–early 2000s)**
- Importance of human factors and tacit–explicit knowledge conversion
- Accumulation of human and intellectual capital within an organization
- Role of social and cultural aspects in organizational learning
- Focus on bundled knowledge resources of an organization rather than on an individual possessing knowledge
- Search for “applied knowledge”
- Knowledge-sharing processes are initiated and driven by individual employees as part of their daily routine

**Third phase (early 2000s–2013)**
- Strategic perspective
- Reconciliation of human- and techno-centric views on knowledge creation, sharing, and storage
- Identification, development, and support of autonomous, informal, and self-managed social networks
- Increasing importance of cultural and contextual aspects
- Collaborative KM
- Leveraging collective knowledge
- Societal learning, the democratization of knowledge, and citizen involvement
- Ethical social innovation impact on individuals, organizations, and society
- Managing knowledge as a flow
- Focus on value creation

As proposed by [47] and shown in Fig. 3, three eras of KM have been identified. This highlights the evolution in the level of maturity of the thinking around KM through the years, how KM is implemented, and how the benefits it brings have changed as organizations have become better in their KM approach.

Fig. 3 shows how the complexity and disparity in the dimensions of KM have changed over the three KM eras. Broadly speaking, congruence is apparent as both authors have divided KM evolution into three phases (before mid-1990s, mid-1990s–early 2000s, and early 2000s–2013). However, when we look at the dimensions in each phase, divergence becomes evident. Whereas [46] and [47] have some overlap in each era (e.g., in the early phase: lesson learned, best practice, and focused on explicit...
knowledge), significant differences also emerge, such as in the third era where only one aspect is shared. Nonetheless, as with any evolution, the overall development is steadily progressing from simple beginnings to greater complexity and refinement of the concept (process). From a wider perspective, it can be said that the first phase was the discovery that companies began to understand, collect, store, and reuse them.

During the second phase, KM was refined with it then understood that: competencies were needed to identify and leverage tacit knowledge; new tools (communities of practice) were added; and the importance of socialization and culture was recognized and integrated with KM efforts. Surprisingly, in the last phase, [47] seems to have a more novel concept of KM (Web 2.0: address complex issues, create new knowledge), whereas [46] argues for the strategic perspective and dimensions such as a socialization culture. The increase in collaboration is familiar as it was part of the second phase. More recently, the focus of the leading thinking in knowledge disciplines has been on the idea of the co-creation of new knowledge in real time [48].

F. Important KM concepts

Tacit and explicit knowledge

We know more than we can tell [49].

Tacit knowledge, in a very simplistic way, could be described as “hidden or below the surface knowledge.” It is when people find it very hard to explain a process or activity (what/how something is done). It is, in fact, the most common routine (habitual) work which people have the greatest difficulty in explaining. For instance, if you ask a housewife who has just taken a cheesecake from the oven about the precise process and steps for baking the cheesecake, you will most likely find that she will struggle to correctly explain the entire process (ingredients, steps like preheating, sifting, measuring, mixing, baking temperature, timing ... etc.) in sequence. However, this “hidden knowledge” is of great value (potential) to companies, for example, this well-known British Petroleum (BP) case:

A BP exploration geologist located off the coast of Norway discovered a more efficient way of locating oil on the Atlantic seabed in 1999 ... The employee posted a description of the new process on BP’s intranet ... Within 24 hours, another BP engineer working on a well near Trinidad found the posting and emailed the Norwegian employee for additional details ... the Trinidad team successfully saved 5 days of drilling – amounting to US$600,000 [savings] [50].

This exemplifies the potential of tacit knowledge and why companies (leadership) should be very concerned and serious about extracting and making knowledge available for the whole organization. They may even decide to externalize KM (e.g., sharing with a supplier/partner to develop or innovate technology or services).

Communities of practice

In the late 1990s, [51] and [52] coined the term “communities of practice (COP)”, a model of situated learning and engaged (group/community) learning. The term “COP” was explained as follows: “[C]ommunities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.” This concept is based on two observations:

1) that a group of people can draw on more knowledge (brain power) than a single person
2) that an idea can be disused (bounced off) and reflected within the group which usually results in a better solution (outcome)

Like other concepts, the COP concept has become an integral part of KM and its practices. In fact, it is also widely used in non-KM environments where teams (e.g., a company’s development team or a team of university students) seek to generate better outcomes by working (thinking) and solving problems together.

SECI (socialization, externalization, combination, and internalization)

In 1991, [53] created the model of “knowledge creation” known as the SECI (socialization, externalization, combination, and internalization) concept, which describes the ways that knowledge is generated, transferred, and re-created in organizations. The model uses the following steps:

- Two forms of knowledge (tacit and explicit)
- An interaction dynamic (transfer)
- Three levels of social aggregation (individual, group, and context)
- Four “knowledge-creating” processes (socialization, externalization, combination, and internalization)

As the originator of this concept was a Japanese scholar, it was naturally first applied in Japanese factories (automobile) but it later successfully spread to other continents and industry sectors.

KM frameworks

Since the early days of KM, many scholars have attempted to create a framework that would help to improve the structure of and better understand KM activities. The first concept was the widely respected three-pillar model of [54] with this model experiencing evolution and succession through the work of later KM scholars. All models varied in approach, level of integration and complexity (e.g., [31][55][56] [57][58][59][60][61]). Besides the usual evolution from an initial simple concept to a more integrated and complex one, the KM framework incorporated new
(external/additional) factors (e.g., globalization). The most recent and most highly integrated but also most complex framework is [61]’s global knowledge management framework (GKMF). This framework combines and integrates the work of [62][63][64] [65]. Interestingly, in comparing the KM frameworks that emerged in the last 10–15 years, certain patterns and parallels can be noticed. Firstly, more recent concepts have placed KM in the center, similar to being at the center of a galaxy orbited by stars, interstellar gas, dust, and black matter. For example, in [59]’s model, KM (in the center) was encircled by strategy; system and technology; organization learning; and culture. Each sphere had dimensions/extension (e.g., culture with implementation and change management) added to the four core elements. Later, [60]’s model had some similarity to that of [59], with the dimensions, organizational learning, and systems and technology, being very similar to [60]’s information and communications technology (ICT). However, in [60]’s model, human resources management (HRM) and information management were added and clustered around those four circular spheres, indicating the tools and capabilities that would make KM work. Moreover, further integration and evolution pushed the boundaries and resulted in the global KM framework. One important aspect for multinational companies is globalization as it adds the global (cross-cultural) dimension. While this significantly increases the complexity of implementing and maintaining knowledge across sectors, at the same time, opportunities can arise as a result of the diverse knowledge sources and possible divergent views that encourage different (innovative) solutions.

The work of [61] addressed the need to develop an integrated and unified model. These authors understood the necessity of using a high-level approach (i.e., a KM program’s structure and architecture for a global firm is somewhat different to a KM program—or a KM initiative—of a single business unit). However, even with the complexity and wider context of such a model, [61]’s model looks rather static (technocratic), thus making it clumsy and harder to understand.

It can be argued that the layout does not reflect KM’s natural cascading (hierarchy) process. Rearranging the layout in the following manner (top down, as suggested by the current paper’s author) may have merit.

However, as with any paradigm, a mapped process (concept) and actual real-life implementation are not exactly the same. The human factor should not be underestimated. If we compare the GKMF to a car engine, we find that both represent complex systems comprising connected parts that work (move) as a whole and produce an output (for the GKMF, knowledge; for a car engine, power). However, without lubrication, neither system will work. Just as oil lubricates a car engine so it runs smoothly (with the least amount of friction/loss), with KM as the engine, the oil flowing through the (company) system is the soft (human) component that can make the company work well (or, on the other hand, cause friction, making the company work harder and more inefficiently).

III DISCUSSION

A. KM critical success factors (CSFs)

In any concept, a huge gap often exists between theory and actual implementation: with KM a more complex concept, this is even more valid. Over the last few years, this has been identified by many scholars, and various studies have, in particular, investigated critical success factors (CSFs). For example, recently, researchers have utilized the processes, intellectual capital, culture, and strategy (PICS) model of [66], as originally proposed by [67], in an attempt to structure and add more rigor to their KM research.

Interestingly, comparing the PICS components with those in Table III below, what is noticeable is that most dimensions classified by KM scholars as KM CSFs overlap (the classifications in Table III were aligned and aggregated by this paper’s author; for example, culture, national culture, and organizational culture were clustered into one classification, namely, culture). This serves to strengthen the argument that, in KM, the most relevant and important CSFs are the ones identified here. Three of the four factors stand out, namely, process, culture, and strategy, and thus should be considered as high-impact CSFs for KM implementation.

<table>
<thead>
<tr>
<th>Leadership (supported/flanked by infrastructure and stakeholders)</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture</td>
<td>Instruments (human, technological)</td>
</tr>
<tr>
<td>Knowledge (resources/problems)</td>
<td>External processes</td>
</tr>
<tr>
<td></td>
<td>Business processes</td>
</tr>
<tr>
<td></td>
<td>KM processes</td>
</tr>
<tr>
<td></td>
<td>Result/outcome (performance, knowledge)</td>
</tr>
</tbody>
</table>

Fig. 5. Global knowledge management framework (GKMF) [61].

Fig. 4. Proposed KM framework layout (Source, this paper’s author).
TABLE III
CRITICAL SUCCESS FACTORS (CSFs)

<table>
<thead>
<tr>
<th>Critical Success Factors (CSFs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Strategy/ Purpose (KM/ organizational)</td>
</tr>
</tbody>
</table>

In parallel, when looking across to the general field of business management studies, another landmark study called the “Evergreen Project” comes to mind. In a longitudinal study (from 1986–1996) published in Harvard Business Review (2003), [73] investigated 160 companies seeking common management practices that were successful which led to the “What really works 4 + 2 formula.”

Interestingly, here too some overlap of factors was found. The dimensions in Table III and the four primary management practices described in the “Evergreen Project” are the same (strategy, culture, and structure). In terms of the secondary practices, the identification of leadership by the “Evergreen Project” seems to support the suggested importance of the corresponding CSF “leadership/management support/commitment in Table III above.

It is obvious that everything starts (or cascades) from strategy (to be more precise, the prior sequence should be vision → mission → strategy). Firstly, if company strategy prescribes that the company is to use KM that, in turn, should ensure provision for the necessary implementation (e.g., resources, development, know-how, etc.). Secondly, the right (positive) culture will guarantee a conducive environment, and enable the implementation process whereas, on the other hand, a poisonous culture would be a barrier. Thirdly, structure is the guideline or framework that forces the process into a system. This is important for a team to hold on to if the change process becomes unclear or if they are distracted from their aim.

B. How about (general) KM research in recent years?

This literature review consists of four parts: firstly, a review concept (see Fig. 1 above) is depicted to show and explain how this review is organized. Secondly, a KM literature overview and evolution is provided (from early 1990s–early 2000s). Thirdly, publications are reviewed commencing with the most recent (general) KM followed by hotel sector-specific KM.

As KM scholars and practitioners have voiced their concerns about the difficulty experienced in measuring KM, seven papers (see Table IV below) were reviewed, all of which have linkages to performance.

TABLE IV
LINKAGES TO PERFORMANCE

<table>
<thead>
<tr>
<th>Author</th>
<th>Subject</th>
<th>Method</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tseng (2016) [74]</td>
<td>Effect of KM customer knowledge gaps (CKGs) on corporate performance</td>
<td>Quantitative</td>
<td>Investigating and linking KM capability (KMC) and CKG and the impact on company performance. KMC has a significant effect on corporate performance and firms with</td>
</tr>
<tr>
<td>Authors</td>
<td>Title</td>
<td>Methodology</td>
<td>Study Details</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Wu and Chen (2014) [75]</td>
<td>Knowledge management-driven firm performance</td>
<td>Quantitative</td>
<td>Aim to find a model to properly evaluate KM value. They consider operational excellence, product leadership, customer intimacy, and financial achievement as the performance indicators. In their study, superior KMC significantly reduce CKG.</td>
</tr>
<tr>
<td>Kim et al. (2014) [76]</td>
<td>Effect of KM strategies on performance</td>
<td>Quantitative</td>
<td>Drawing on a knowledge-based view, two dimensions are identified: knowledge type and origin. Four measurement approaches are identified: external codification, internal codification, external personalization, and internal personalization. Applying a KM strategy based on a technological organizational environment framework. Result: organizations must consider internal and external factors for the KM strategy to be successful.</td>
</tr>
<tr>
<td>Jayasingam et al. (2013) [77]</td>
<td>KM practices and performance (linkage)</td>
<td>Quantitative</td>
<td>This paper claims that through creating, accumulating, organizing, and utilizing knowledge, organizations can enhance organizational performance. The results show that KM practices can positively affect organizational performance. KM practices and KM project performance were studied in 180 knowledge-based companies in Malaysia with empirical proof of KM practice and KM success. Differences between small and large companies were noted.</td>
</tr>
<tr>
<td>Rašula, Vukišić and Štemberger (2012) [78]</td>
<td>Impact of KM on organizational performance</td>
<td>Quantitative</td>
<td>Findings: HRM and ICT practices have a statistically significant influence on a firm’s financial performance and competitiveness. Their study also indicated that, if coupled with HRM practices, financial performance is improved by ICT practices.</td>
</tr>
<tr>
<td>Andreeva and Kianto (2012) [79]</td>
<td>Linking KM practices, competitiveness and economic performance</td>
<td>Quantitative</td>
<td>Findings: HRM and ICT practices have a statistically significant influence on a firm’s financial performance and competitiveness. Their study also indicated that, if coupled with HRM practices, financial performance is improved by ICT practices.</td>
</tr>
<tr>
<td>López-Nicolás and Meroño-Cerdán (2011) [80]</td>
<td>Strategic KM, innovation and performance</td>
<td>Quantitative</td>
<td>Aim to shed light on the consequences of KM strategies on a firm’s innovation and corporate performance. Their research found that, and explained how, strategic KM improves organizational performance and innovation.</td>
</tr>
</tbody>
</table>
Initially, one would expect that the reviewed papers would follow a similar train of thought as the titles were similar (all had two words in common: knowledge management [KM] and performance).

However, the most recent paper by [74] seems to look at a new direction in KM research. The author explains and differentiates two categories of corporate performance measure: knowledge management capability (KMC) and customer knowledge gap (CKG). The author argues for a strong link between KMC and CKG, with this link suggesting that improved KMC and a reduced CKG will have a significant effect on performance. A similarity in approach is apparent as [75] also came up with a twofold classification: (1) knowledge assets and (2) knowledge process capability. The dimensions within [74]'s knowledge management capability are based on the knowledge cycle (i.e., acquire, transfer, and distribute model), whereas [75] use a four-factor cycle of creation, transfer, integration, and application. However, [76] based their research on knowledge type and origin. Their study defines four KM strategies: external codification, internal codification, external personalization, and internal personalization. These are tied to a contingency framework that identifies technology–organization–environment and key factors. Conversely, [75] consider knowledge resources and process capabilities as important, seeing a critical link between these two dimensions and organizational learning.

Another perspective of KM is introduced by [79] who considered its HRM and ICT aspects. According to [77], a quantitative study of 180 knowledge-based companies in Malaysia found empirical proof for the success of firms with KM practices. Furthermore, [78] based their study on a construct of three critical dimensions: (1) information technology (IT) (the ability of technology to capture knowledge and the usage of information systems [IS]); (2) organization (people, organizational climate, and processes); and (3) knowledge (knowledge accumulation and utilization, sharing practices, and knowledge ownership identification). In another study, [80] investigated KM strategies (considering the aspect of codification and personalization) and linked them to innovation and performance, providing empirical proof that strategic KM improves performance and innovation. It would be worthwhile to integrate the concepts of these papers in an attempt to harmonize and equalize the research approach and methodology, thus enabling KM to be measured in a common and comparable way.

C. How about hotel (hospitality)-specific KM?

Due to the lack of (pure) hotel-specific (KM) research, [81]'s comprehensive (KM) literature review (hospitality/tourism-centric) was used as an auxiliary source and a reference point from which to paint an overall picture of where (hotel) KM stands. In his review, [81] suggests that scholars should improve methodological rigor and use a wider base for their research so the findings (results) will be more reliable. Consequently, KM will become easier for practitioners and policy makers to understand and implement. With that in mind, the most recent KM literature was reviewed and discussed in the current study.

Owing to the lack of hotel sector-specific papers, the review is limited to the following studies:

<table>
<thead>
<tr>
<th>Author</th>
<th>Subject</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salem (2014) [82]</td>
<td>KM in 5-star chain hotels in Egypt</td>
<td>Quantitative (survey)</td>
</tr>
<tr>
<td>Wong, Wickham, and Hall (2013) [83]</td>
<td>Local and international hotels in China</td>
<td>Qualitative (survey and interview)</td>
</tr>
<tr>
<td>Mahapa (2013) [84]</td>
<td>Impact of KM on performance of hotels in Zimbabwe</td>
<td>Qualitative (case study and survey)</td>
</tr>
<tr>
<td>Isa et al. (2008) [85]</td>
<td>Intellectual capital and KM: Malaysian hotels</td>
<td>Qualitative (multiple case study)</td>
</tr>
</tbody>
</table>

Considering the titles and subsequent foci of the above-listed studies, the argument that hotel sector-specific KM is widely dispersed and still in its infancy seems to be supported.

Whereas all four papers on the surface appear to research the same subject (hotel KM), they all bear significant gaps and differences in foci and rigor. Even though [46] reports strong development in (general) KM literature, KM literature with a hotel sector-specific focus (e.g., hotel-centric papers from [82] and [86]) appears to be lacking. It is unclear whether this is a result of the hotel industry being unaware of trends, or due to a lack of researchers interested in investigating hotel sector-specific KM (or even both).

Besides the obvious differences of the above papers in terms of method, geographic location, and size of sample, unifying factors were also found. All four papers convey a very positive view about KM, and all indicate similar benefits (e.g., competitive advantage, more innovation, and better performance). However, in addition to the previously reported lack of published work on research evolution and trends, [46], who researched 108 scientometric studies, had a similar observation about KM’s general body of knowledge. As neither a unified framework nor commonly agreed terminology exist, it is rather difficult to find a good foundation for research.

Firstly, it is encouraging that [82] conducted a quantitative study as most (hotel) KM papers use the qualitative method. His study has weight relevance as the sample size is quite significant. On the other hand, many authors prefer and justify the use of qualitative research (and mostly, the case study approach) as it is research in a specific context: with people responsible for the
application of KM, authors have found that the qualitative method is better suited.

A key concern about all four studies is the geographical restriction (one country only), with even greater concern about the level of the research. Typically, hotel companies strategize and decide actions and direction in the head office. Taking, for example, the research by [83] (and this could also be said of the other studies), a justified concern would be why the participants were chosen from the property level. It could be argued that Parkyard Hotels has a fantastic KM program/framework that is used at headquarters and across its portfolio, but that the researched hotel (as the only one in the group) either missed, or is delayed in, implementing the program. Another important issue would be that size and rating matter. For example, Marriott International [87] (with over 6000 hotels worldwide) and Dusit International [88] with 29 hotels (mostly in South East Asia) operate differently (in terms of processes, resources, structure, financial backing, etc.). Concerning hotel rating, of the above papers, only [82] seems to consider the hotel category (but only 5-star chain hotels) even if no explicit explanation was provided for why they were chosen and not others (e.g., 3-star or 4-star). Among these authors, [84] seems to be least concerned as she selected three hotels (with no mention of brand affiliation or rating) which could cause distortion in the findings.

However, both [82] and [84] understood that using a construct would provide more clarity and structure. Furthermore, [82] (citing [89]) identified four variables, namely, technology, structure, culture, and human resources. Similarly, [84] (citing [66] as proposed in [67]) applied the PICS model (process, intellectual capital, culture, and strategy) These papers indicate that some hotels are interested in implementing elements of KM, but that KM practices are limited and not widespread in the hotel industry. This highlights the possible opportunity to introduce more KM practices across more organizations to enhance organizational performance.

D. Are there more recent trends in hotel KM?

Based on the above review, KM is believed to be very much alive and can be considered as a well-respected management concept. Hotel enterprises (and any business in general) and their leadership use KM as a tool to gain efficiency and competitive advantage. On the other hand, the notion of disparity, absence of uniform terminology and lack of defined focus are supported by the above findings. In addition, this stance is supported by the experience of this paper’s author after being exposed to the hotel industry for over 25 years. With employment in large and small hotel companies, he has observed that only very large multinational hotel companies (e.g., Marriott, InterContinental Hotels Group [IHG], Accor, etc.) use some sort of KM (programs and technology) and implement (enforce) them. Besides the lack of available hotel sector-specific research, the use of KM by hotel companies is clearly indicated. Looking at the soft (human) side of KM, we find some indication that large hotel companies practice KM because they employ people to drive KM initiatives (e.g., IHG employs an Analyst, Knowledge Management and a Knowledge Management & Sharing Culture Champion [90] while Hilton employs a Chief Learning Officer [CLO] [91]). In parallel, on the hard side (technology) of KM, we also have indications of KM implementation as all major hotel companies have an intranet portal (e.g. Marriott’s intranet portal is called Marriott Global Sources [92]; IHG’s portal is called IHG Merlin [93]; Accor’s portal is called MyAccor Hotels [94]; Hilton’s portal is The Lobby [95]) with all having similar features (best practice repository, learning center, news, updates and information, lessons learned, etc.). All the large hotel companies have KM programs but may call it by different names (e.g., operational excellence, global learning, process improvement, etc.).

This shows that hotel companies are committed (in terms of financial and other resources) to KM; however, as previously mentioned, hotel sector-specific KM research is poor in quantity and inconsistent. One reason for less research in this specific field could be the weak link between the hotel industry and research. In addition, very little information can be found on the internet for several reasons:

1) Hotel companies want to protect their competitive advantage and do not want to share (disclose) any information.
2) They practice KM (or elements of it) but they do not call it by this name (are not aware that it is KM).
3) They do not use or know about KM.
4) Their KM looks different (they may call it digital strategy) as they have moved on to the “next generation KM” (e.g., enterprise social media, crowd sourcing, etc.).

Very recently, an article published on Skift [96] announced one of the Marriott’s latest app developments. This app uses machine learning and artificial intelligence (AI) to learn from the guest (user) (by collecting information posted on social media, shared locations, and interaction patterns) in order to make suggestions to the guest (user) about Marriott hotels (offerings and services and to drive engagement). That news and Accor’s plans [97] to transform the company into a digital business are the latest indications of the existence of KM in the hotel sector, demonstrating hotel companies’ keen interest in further evolving technologies and strategies for competitive advantage.

IV CONCLUSION

In summary, this paper has introduced and explained the fundamentals of KM, followed by a review of the general literature, and then the hotel sector-specific literature. It is understood that KM is a widely dispersed
and complex phenomenon; however, to date, KM has no uniform model, terminology, or research focus. This dispersion and lack of focus makes it hard to narrow down and progress the research agenda. However, it is believed that this paper, to some degree, provides a better understanding and, hopefully, renewed interest from academia and industry in the hotel-centric KM field.

In parallel, in the process of completing this paper, it became evident that hotel sector-specific KM still has many unexplored areas which require further investigation, in particular, the current state of affairs with KM, future KM trends, global KM (multinational hotel companies), and the possible differences between small and large hotel companies.

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[81] Cheng, 2010


[86] Bouckenen


[89] Lee and Chaoi, 2003


The Roles of Religiosity, Health Consciousness, Attitude and Subjective Norms in Determining the Intention to Consume Halal Nutraceutical Products

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Abstract - The advancement of food technology allows for the growth of beauty and health products. As the society places more concern on product security, nutraceuticals becomes an option. However, what is considered safe is not necessarily halal. Therefore, the study was conducted to examine the factors that consumers believe are important in determining their intention to consume halal nutraceutical products. A survey was conducted and the results show religiosity, health consciousness, attitude towards halal and subjective norms are playing the determinant roles in predicting the halal consumption intention, with religiosity being the most influential factor. The study highlights on the importance of halal in every aspect of an individual’s life and it is more important when it concerns health. Discussion and future research suggestions are provided.

Keywords - halal, factors to consume halal, halal in Malaysia, nutraceutical products, halal and religiosity

I. INTRODUCTION

Halal is an extensive concept. It does not only focus on food, but it involves all aspects of one’s life. As interest in quality healthcare products such as nutraceutical and pharmaceutical increases, businesses are competing in innovating and presenting health and cosmetic products to consumers. It is estimated that the worldwide value is close to USD1.3 trillion while Malaysia has a market worth at RM3.5 billion. Thus, although nutraceutical is new, it has huge potential in the halal field.

Halal and Muslims are not to be separated. According to Islamic law, halal means permissible or lawful. When used in relation to food in any form in the course of trade or business or as part of a trade description, halal is the certification of lawful products or foods or beverages. As mentioned in the Holy Quran and Sharia, Islamic followers are only permitted to consume lawful, hygienic, safe and good foods, drinks and products as these elements shape one’s behaviour and are related to health concerns. In fact, the basis of halal is hygiene and health [1].

In addition to halal, other word that is related to Islam is religiosity. Worshipping and religious beliefs do shape a person’s behaviour. In order to shape beliefs, knowledge and attitudes, religious commitment plays a significant role. Religious commitments and beliefs will affect feelings and attitudes of people toward consumption or consumer’s behaviour [2].

While previous studies of halal acceptance are abundant, investigations on halal acceptance of nutraceutical health products require more effort. In Malaysia, nutraceutical products are numerous which call for intense competitions. These include Aura White, Qu Puteh, D Herbs, K-Colly, HPA Products, Halagel, Nona Roguy and many more. Even though medicine is considered as an exemption from halal food regulations, various efforts are on-going to research into the area of halal pharmaceuticals and nutraceuticals as consuming the products that are halal certified improves spiritual confidence and is fundamental to religious requirements. Yet, when it comes to beauty and health, mixed results are always found in terms of halal acceptance. Therefore, the study is aimed to examine how religiosity and health consciousness together with subjective norms and attitudes play its role in determining the intention to consume halal nutraceutical products.

II. REVIEW OF LITERATURE

A. Halal and Nutraceutical Products in Malaysia

Muslim consumers’ behaviour is highly influenced by the Quranic philosophy of what is permissible and what is not permissible. These include adultery, gambling, interest on money, liquor, pork, blood of animals as well as the meat of animals sacrificed in the name of other than Allah [3, 4]. People who practice or obey religiosity are concerned with what they eat and consume. As consumers become more aware of the benefits of healthy eating, they are increasingly aware of healthy foods and pay more attention to nutrition [5]. Therefore, health consciousness has also become a concern.

People’s intention and behaviour towards food and products consumption are highly related to the attitudes and subjective norms. A recent study by Khalek and Ismail [6] on halal consumption among gen Y in Malaysia found a significant role of subjective norms in explaining halal consumption. The nutraceutical business sector is growing due to the advancement of the food and healthcare industries. Nutraceutical are products that are believed to promote better healthcare that provide protections against chronic diseases or give physiological
benefits. They can be found in flavonoid antioxidants from various herbs such as lingzhi, tongkat ali, turmeric and beta-carotene from palm oil.

B. Factors That Influence the Intention to Consume Halal Nutraceuticals Products

Religiosity is the extent to which an individual is committed to one’s religious teachings. Believing, worshipping and giving charity are the core of Islam as well as the basis of spiritual presence [7]. Most religions prescribe or prohibit certain acts including consumption behaviour [8]. In Islam, it is clearly stated that non-halal is strictly forbidden for human consumption. As purchasing decision is influenced by religious identity, orientation, knowledge and beliefs, it is predicted that similar behaviour will be performed when a consumer intends to consume halal nutraceutical products. Thus, the following hypothesis is offered:

H1: There is a significant relationship between religiosity and behavioural intention to consume halal nutraceuticals.

Health consciousness reflects a person’s openness and readiness to improve his health. A conscious consumer is aware of what he is buying. Health consciousness predicts a variety of health attitudes and behaviours [9]. Similarly, [10] found health conscious consumers have a preference for healthier alternatives of products. It is predicted they will opt for nutraceutical products for a healthier lifestyle. Therefore, the following hypothesis is offered:

H2: There is a significant relationship between health consciousness and behavioural intention to consume halal nutraceuticals.

Attitude is the evaluation of performing a particular behavior. The relative importance of attitude in the prediction of intention is expected to vary across behavior and situations. According to the expectancy-value model, attitudes toward a behavior is determined by the total set of accessible behavioral beliefs linking the behavior to various outcomes and other attributes [11]. A person who regards halal will have the intention to consume halal products.

H3: There is a significant relationship between halal attitude and behavioural intention to consume halal nutraceuticals.

People’s behaviour and intention are also predicted by subjective norms. If social expectation requires a person to behave in certain behaviours, then the person will be more likely to do so. In this context, if purchasing halal products is assumed to be a socially desirable behaviour, then the person is more likely to make a decision to consume halal nutraceuticals. Equally important is the social behaviour of the Muslim consumers in Malaysia who tend to look at halal logo and certification as a form or halal assurance [6].

H4: There is a significant relationship between social norms and behavioural intention to consume halal nutraceuticals.

The prediction is illustrated in the conceptual model in Figure 1.

![Conceptual Model](image)

III. METHODOLOGY

A. Data Collection

The survey method was employed to collect primary data from the community in Malaysia. Prior to the actual data collection, face and content validity and reliability tests were performed on 30 respondents. The results of the reliability test show the cronbach alphas were above 0.700. Therefore, the internal consistency was assumed. Overall, 200 Muslims aged between 21 to 60 years old took part in the study. The demographic profiles of the respondents are shown in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>74</td>
<td>37.0</td>
</tr>
<tr>
<td>Female</td>
<td>126</td>
<td>63.0</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 - 30 years old</td>
<td>75</td>
<td>37.5</td>
</tr>
<tr>
<td>31 - 40 years old</td>
<td>65</td>
<td>32.5</td>
</tr>
<tr>
<td>41 - 50 years old</td>
<td>38</td>
<td>19.0</td>
</tr>
<tr>
<td>51 - 60 years old</td>
<td>22</td>
<td>11.1</td>
</tr>
<tr>
<td>Profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>27</td>
<td>13.5</td>
</tr>
<tr>
<td>Government servant</td>
<td>121</td>
<td>60.5</td>
</tr>
<tr>
<td>Others</td>
<td>52</td>
<td>26.0</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>57</td>
<td>28.5</td>
</tr>
<tr>
<td>Married</td>
<td>143</td>
<td>71.5</td>
</tr>
</tbody>
</table>

B. Results and Findings

Prior to the bivariate analysis, missing data analysis and non-response bias procedures were performed. The results show there is statistically no significant difference between early and late respondents. Therefore, non-response bias does not present. In addition, a normality
test was conducted to fulfill the underlying assumptions in parametric testing. Based on the skewness and kurtosis results, it was assumed for a normal distribution. Factor analysis with principal component analysis and varimax rotation and internal consistency test were then conducted. The KMO value of 0.748 specifies that the items were interrelated and the Bartlett’s test of Sphericity displays a significant value. It indicates that the significance of correlation matrix and appropriateness for factor analysis. The MSA fell above the acceptable value of .50. Thus, the factorability is assumed. The total variance explained accumulated to 77.490%. The analysis proceeds to the measurement model. Appendix 1 shows the results of the factor loadings, composite reliability and average variance extracted (AVE) to assess the convergent validity.

All item loadings surpassed the required cut-off level of 0.60 as suggested by [12]. The composite reliability values exceeded 0.70 as recommended by [13] and the AVEs were above 0.50 as suggested by [14]. The correlations between all the determinants and halal intention were significant.

The results of the hypotheses testing are shown in Table 2. Based on the results, 28.1% of the variance in intention to consume halal nutraceutical products was determined by the predictors. Religiosity ($\beta = 0.353$, $p < 0.01$), health consciousness ($\beta = 0.266$, $p < 0.01$), social norms ($\beta = 0.267$, $p < 0.01$) and attitude ($\beta = 0.121$, $p < 0.05$) were found to have significant effects on intention to consume halal nutraceutical products. Therefore, all hypotheses were supported.

<table>
<thead>
<tr>
<th>H</th>
<th>Relationship</th>
<th>Coefficient</th>
<th>C.R</th>
<th>$R^2$</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Religiosity -&gt; Intention</td>
<td>0.353</td>
<td>4.636</td>
<td></td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>Health Consciousness -&gt; Intention</td>
<td>0.266</td>
<td>3.709</td>
<td>0.281</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>Social Norms -&gt; Intention</td>
<td>0.267</td>
<td>3.932</td>
<td></td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>Attitude -&gt; Intention</td>
<td>0.121</td>
<td>2.531</td>
<td></td>
<td>Supported</td>
</tr>
</tbody>
</table>

The model summary is displayed in Figure 2.

IV. DISCUSSION

In planning to choose nutraceutical products, one’s commitment to religion plays the main factor. Halal status is an obligation that needs to be fulfilled. [15] describes a highly religious person makes decisions based on the conduct of spiritual beliefs and integrates his religion practices into his life. In addition, the rise of Islam and the understanding that it is a way of life has led to the increase of user awareness on content, processes, sources and other determinants of halal consumption [16]. A study conducted by [17] concluded that religiosity plays a more influential factor towards halal behavior compared to other predictors such as knowledge. Thus, as halal is compulsory for Muslims, those who have strong faith and believe in Islam, will always choose halal as the lifestyle priority.

In addition, even though health and beauty products are numerous in the market, and they come with attractive packages and prices, the halal status will not be compromised. Muslims who regard health as very important in life tend to choose halal products. This is in line with the key principle of halal, which is wholesomeness that lead them to believe halal is safe, healthy and good. Similar findings were generated by [18] who stated consumers will choose halal because of the quality characteristics, which emphasize on safety and sustainability.

Furthermore, influence from family, friends and surrounding is important to influence one’s decision in consuming halal products. In our findings, the halal logo and the ingredients are playing the roles in influencing the decision to purchase the nutraceutical products. Therefore, providing adequate halal information on the product labeling and packaging is essential to ensure the right information is delivered. In addition, the halal logo will boost the consumer’s confidence on the product’s compliance to religious requirements.

Finally, our findings confirm attitude is an important factor in determining the intention to consume halal nutraceutical products. Similarly, [17, 19] found attitude...
and awareness were positively related to the intention to purchase halal products. Belief is an important determinant to one’s decision. Believing halal is doing good to the health increases the chances that the consumers will like to consume halal products.

V. CONCLUSION

In conclusion, this study emphasizes on the importance of religiosity and health consciousness in determining the intention to consume halal nutraceutical products. While many studies have been applying Technology Acceptance Model (TAM) to explain halal intention and behavior, our findings suggest cumulating religiosity, health consciousness, social norms and attitude provides significant predicting factors. However, in achieving greater acceptance of halal, we suggest some recommendations.

First, as halal is a religious command, it should be emphasized as what Allah has ordered to the ummah. Halal education should be widely taught to all levels of society. The misconception that halal is a tradition and it is about a particular race’s culture that emphasizes solely on food and beverages should be corrected. The society should be educated that halal is a way of life, that it touches every aspect of production from raw materials to consumption. The Muslim society should be educated that pork is not about the meat only, but there are thousands of substances that could be extracted from the prohibited animal and used widely even in a product that emphasized on herbs like the nutraceutical products.

Second, as our findings suggest health consciousness and social norms are indicators to halal consumption decision, sufficient information on halal must be provided. Providing halal logo is the simplest method. However, as there is no single worldwide halal logo, irresponsible parties might abuse the various logos from different countries. Hence, supplying the consumers with the ingredients information should be emphasized.

Third, as the country rule suggests getting the halal certification verifies for the halalan toyyiban of the product, a less complicated procedure for the benefits of all ummah a less complicated procedure for the benefits of all ummah.

ACKNOWLEDGMENT

We would like to acknowledge Faculty of Business and Management and Universiti Teknologi MARA in supporting the research work.

REFERENCES


**Appendix 1: Factor Analysis, Mean and Standard Deviation**

<table>
<thead>
<tr>
<th>Item Loadings</th>
<th>AVE</th>
<th>CR</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Religiosity</strong></td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>Important to show good manners to everyone</td>
<td>.754</td>
<td>.525</td>
<td>.776</td>
</tr>
<tr>
<td>Religious beliefs influence dealings with others</td>
<td>.625</td>
<td>.525</td>
<td>.767</td>
</tr>
<tr>
<td>Duty to respect the rights of everyone</td>
<td>.785</td>
<td>.525</td>
<td>.767</td>
</tr>
<tr>
<td><strong>Health Consciousness</strong></td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>Do something for appearance</td>
<td>.659</td>
<td>.589</td>
<td>.810</td>
</tr>
<tr>
<td>Regularly take food supplements</td>
<td>.803</td>
<td>.810</td>
<td>.169</td>
</tr>
<tr>
<td>Food with additional health benefits</td>
<td>.830</td>
<td>.810</td>
<td>.169</td>
</tr>
<tr>
<td><strong>Attitude</strong></td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>Like to choose Halal nutraceutical products</td>
<td>.966</td>
<td>.755</td>
<td>.858</td>
</tr>
<tr>
<td>Halal nutraceutical products is a good idea</td>
<td>.759</td>
<td>.755</td>
<td>-.192</td>
</tr>
<tr>
<td><strong>Social Norms</strong></td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>Halal logo regardless the manufacturer is an important determinant</td>
<td>.745</td>
<td>.664</td>
<td>.853</td>
</tr>
<tr>
<td>Halal information is an important determinant</td>
<td>.957</td>
<td>.664</td>
<td>.599</td>
</tr>
<tr>
<td>Detailed information on the ingredients is an important determinant</td>
<td>.721</td>
<td>.664</td>
<td>.599</td>
</tr>
<tr>
<td><strong>Intention</strong></td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>Plan to choose halal nutraceutical products</td>
<td>.954</td>
<td>.700</td>
<td>.901</td>
</tr>
<tr>
<td>Likely to choose halal nutraceutical product</td>
<td>.980</td>
<td>.700</td>
<td>.337</td>
</tr>
<tr>
<td>Will buy if products have quality and Halal confirmation</td>
<td>.713</td>
<td>.700</td>
<td>.422</td>
</tr>
<tr>
<td>Will buy when confidence with the halal status</td>
<td>.650</td>
<td>.700</td>
<td>.237</td>
</tr>
</tbody>
</table>

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The Value of Ecosystem Services - A Review Highlighting the Coastal Systems of Bangladesh

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Abstract - Coastal ecosystems are highly productive and are crucial for producing valuable ecosystem services. These ecosystem services contribute significantly to the well-being of coastal people, which is widely dependent on the functioning of the coastal ecosystems. The purpose of this paper is to provide an overview of the roles and values of ecosystem services provided by the coastal ecosystems of Bangladesh based on the review of secondary data. The major coastal ecosystems of Bangladesh include mangroves, coral reefs and estuaries that provide a wide range of ecosystems services and have significant ecological and socio-economic values to coastal people. Despite their roles to human well-being, coastal ecosystems are being degraded due to anthropocentric and natural disasters. The greatest impacts are caused by the conversion and degradation for coastal development, unsustainable resources uses and climate change. Such degradation warrants sound management of coastal ecosystems to maintain the sustainable supply of ecosystem services to human welfare. Valuing these ecosystems services and communicating the same to policy-decisions are crucial that can strengthen the arguments to elucidate the intrinsic value of an ecosystem to key decision-makers.

Keywords - Coastal well-being, decision-making, ecosystem services, degradation, economic valuation

INTRODUCTION

The coastal ecosystems are the complex patchwork of aquatic and terrestrial habitats that include salt marshes, mangroves, wetlands, estuaries, coral reefs and beach. They are highly productive, home to different types of flora and fauna. They provide valuable ecosystem services that have critical benefits and values to the coastal people and contribute significantly to the economic development. In Bangladesh, coastal ecosystems are the part of delta of the Himalayan drainage ecosystem and coastlines cover about 710 km [1]. The major coastal ecosystems of Bangladesh include mangroves, coral reef and estuaries that are important biodiversity hotspots and provide ecological basis for mangroves forests and numerous fisheries resources.

Despite the importance of coastal systems of Bangladesh to human well-being, they are some of the most widely used and threatened ecosystems in Bangladesh due to anthropogenic and natural disturbances [2, 3, 4, 5, 6]. The coastal region is increasingly being affected by the sea level rise and frequent storm surges and cyclones, declining the capacity of coastal ecosystems to provide services to coastal residents [7, 8, 9, 10]. Thus, biodiversity and coastal services are being reduced that may contribute to biological invasions, declining water quality, and decreased coastal protection from storm events [11, 12]. The lives and livelihoods of many coastal people can be posing under threat and becoming insecure.

The widespread and rapid changes in the coastal ecosystems underline the importance to understand the coastal ecosystems services in terms of benefits and values of those services. Translating the values of coastal services in monetary terms would strengthen arguments to elucidate the intrinsic value of an ecosystem to key decision-makers and stakeholders [13, 14, 15, 16]. This paper attempts to provide an overview of the roles and values of ecosystems services provided by the coastal ecosystems of Bangladesh to advocate as a means to raise awareness and support decision-making.

METHODOLOGY

This paper summarized and discussed the ecosystem services in the context of coastal systems of Bangladesh, provided a conceptual link between coastal systems and human well-being and the values of services in monetary terms. Both qualitative and quantitative information were collected from the secondary data based on the review of existing documents published in the forms of journals, books, reports over the past.

RESULTS AND DISCUSSION

Ecosystem services provided by coastal systems

Coastal ecosystems of Bangladesh provide a wide range of valuable ecosystem services, which are adopted in Table 1 [2, 17, 18, 19, 20]. These ecosystem services are indispensable for both natural environment and human beings can be classified into provisioning, regulating, cultural and supporting services [8]. Over 35.1 million people (according to 2001 survey) live in the coastal areas of Bangladesh, which is projected to grow to about 51.9 million in 2050 [1], who are directly or indirectly benefiting from the services provided by the coastal ecosystems. These ecosystem services have considerable ecological and economic values at regional and international context. For example, Sundarban is the single tract largest coastal mangroves wetland, which has
been declared as Ramsar site in 1992 and the UNESCO World Heritage site in 1997.

Provisioning services support livelihoods to the numerous coastal people and are important for local and national economic development. According to reference [22] almost 500 million people globally depend on coral reefs for livelihoods, food and other sources. Regulating services provide the benefits to people indirectly by regulating the ecosystem processes, for example, climate regulation, nutrient cycling, natural hazards mitigation, etc. The non-material benefits that people obtain from ecosystems are treated as cultural services that have spiritual and religious value, educational value, cultural heritage value, recreation and eco-tourism. Supporting services are important for producing all other services and their impact on people are often indirect or occur over a very long-term [23].

### TABLE 1. ECOSYSTEM SERVICES AND ITS BENEFITS TO COASTAL HUMAN WELL-BEING OF BANGLADESH

<table>
<thead>
<tr>
<th>Ecosystem services</th>
<th>Benefits to coastal human well-being</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Provisioning services</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Food               | - Provide fish, crustaceans, molluscs and honey  
|                    | - Create employment and support local and national economic development  |
| Raw materials      | - Provide timber, palm (golpata), fuel energy, fodder  |
| Medicinal resources| - Use of some mangroves and coral species as medicinal purposes  |
| Ornamental resources| - Aquarium fishes, materials for fashion, decoration (e.g. molluscs, coral) |
| **Regulating services** |                                      |
| Moderation of extreme events | - Reduce intensity and strength of storm surges and cyclones, tidal current and waves  
| Erosion control    | - Reduce risks of disasters and damage of properties, secure lives and properties  |
| Climate regulation | - Influence local temperature and precipitation (e.g. mangroves), Carbon sequestration  |
| Flow control       | - Maintain regular tidal and freshwater flow by mangroves and coral reef  |
| Gas regulation     | - Provide fresh air by the mangroves for breathing (release O₂ and uptake CO₂)  |
| **Cultural services** |                                      |
| Aesthetic information | - Provide scenic beauty and landscape for enjoyment, create opportunity for tourism  |
| Eco-tourism and recreation | - Provide venue for recreation (e.g. scenery visit, wildlife watching, river cruising, fishing)  |
| Spiritual inspiration | - Provide sense of continuity and place an important part for religion (e.g. Bonobibi, Rush mela) |
| Heritage value     | - Represent art of culture and tradition, have international importance (e.g. mangroves)  |
| **Supporting services** |                                      |
| Breeding and nursery grounds | - Provide suitable habitat for breeding and nursery grounds for fish and wildlife  |
| Habitat for flora and wildlife | - Support distinct diversity of plant and animal communities  |
| Primary productivity | - Support photosynthesizing organisms and animals  |

**Coastal ecosystems and human well-being**

Ecosystem services are the contribution of ecosystem to human well-being [8]. The well-being of people is therefore widely related to the functioning of ecosystem. The concept of ecosystem services links the benefits of ecosystems to human wellbeing, making the benefits of ecosystem services more apparent providing a framework for holistic analysis of the value of services and integration with decision-making processes [24, 25, 26]. A conceptual framework was adopted for linking coastal ecosystem and well-being of coastal people of Bangladesh (Fig.1) [8, 27, 28, 29]. The benefits that people derive from the coastal ecosystems that may alter the use and management option which in turn affect the delivery of ecosystem services. Declining the services caused by poor choices threaten the well-being of the coastal communities and national economy, emphasizing better management and provision of ecosystems. Hence, understanding the coastal ecosystems from the perspective of human well-being has tremendous potential for protecting coastal ecosystems and the services they provide for the well-being of coastal people. The valuation of coastal ecosystem services applying appropriate economic
valuation methods in turn can quantify the values of those services to communities that can be used to bear on policy and management decisions.

Fig. 1 Framework for linking coastal ecosystems and human well-being
(Adopted according to the references [8, 27, 28, 29]

Value of coastal ecosystem services

Fig. 2. illustrates the different values of coastal ecosystem services according to the framework of total economic value (TEV) [33]. This framework has two main elements - use and non-use values that can be attached to the marketed (e.g. commercial fisheries, tourism) and non-marketed services (e.g. nutrient cycling, protection from natural hazards, habitat for plant and animal life, existence values) [30]. The market values are the observed trading ratios for services that can be captured directly from the markets. While many of the ecosystem services (e.g. landscape features and ecological processes) can not be traded in the traditional commodity market, they have important value in monetary terms [31].

Use values include direct and indirect values of services provided in the course of actual use of an area in consumption and production activities. Direct use values are consumptive (e.g. fish, raw materials) and non-consumptive (e.g. recreation, tourism, in-situ research and education) that concern with enjoyment or satisfaction of the consumers. Consumptive values can be marketed and offer the better chances of being measureable. While non-consumptive use values relate to assets that provide value without being traded in the market that can be captured by applying different valuation methods. The regulating and supporting services have indirect use values in particular that relate to life support benefits. Non-use values reflect satisfaction that individuals derive from the knowledge that ecosystem services are maintained and other people have or will have access to them [32], referring to as bequest values, altruist values and existence values [33].

Fig. 2. Total economic value of coastal ecosystem services
Economic valuation of ecosystem services is increasingly used in development and conservation decision-making. In Bangladesh, previous studies have documented about the status and use of ecosystem services, but few have attempted to estimate the monetary values of coastal ecosystem services particularly provided by the mangroves [21, 34, 35]. A picture of the potential economic value associated with the coastal ecosystems are aggregated from a number of existing valuation studies in Bangladesh and other countries (Table 2).

**TABLE 2. ECONOMIC VALUE OF COASTAL ECOSYSTEM SERVICES ESTIMATED IN DIFFERENT COUNTRIES AND BANGLADESH**

<table>
<thead>
<tr>
<th>Ecosystem services</th>
<th>Economic value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials and food</td>
<td>US$ 484-585/ha/year for mangroves products in Thailand [36]</td>
</tr>
<tr>
<td></td>
<td>US$ 88/ha/year for mangroves products in Thailand [37]</td>
</tr>
<tr>
<td></td>
<td>US$ 107/household/year for mangroves products in India [38]</td>
</tr>
<tr>
<td></td>
<td>US$ 1.24/ha/year for provisioning services provided by mangroves in Bangladesh [21]</td>
</tr>
<tr>
<td></td>
<td>US$ 394,478/village/year for provisioning services provided by mangroves in Bangladesh [39]</td>
</tr>
<tr>
<td>Coastal protection</td>
<td>US$ 174/ha/yr for Coral reef in Indian Ocean based on the impacts from 1998 bleaching event on property value</td>
</tr>
<tr>
<td></td>
<td>US$ 154/household for storm protection by the mangroves in India [40]</td>
</tr>
<tr>
<td></td>
<td>US$ 8,966 - 10,821/ha/year for storm protection by mangroves in Thailand [37]</td>
</tr>
<tr>
<td></td>
<td>US$ 3,523/village/year willingness to pay for storm protection by mangroves in Bangladesh [39]</td>
</tr>
<tr>
<td>Erosion control</td>
<td>US$ 3,679/ha/year for erosion control by mangroves in Thailand [37]</td>
</tr>
<tr>
<td></td>
<td>US$ 580/village/year willingness to pay for erosion control by mangroves in Bangladesh [39]</td>
</tr>
<tr>
<td>Maintenance of fisheries</td>
<td>US$ 15-45,000/km2/year in sustainable fishing for local consumption and 5-10,000/km2/year for live-fish export in the Philippines [41]</td>
</tr>
<tr>
<td></td>
<td>Loss of 12,700 ha of sea grasses in Australia associated with lost fishery production of AUS 235,000 [42]</td>
</tr>
<tr>
<td></td>
<td>US$ 2,508/village/year willingness to pay for maintenance of fish breeding and nursery services provided by mangroves [39]</td>
</tr>
</tbody>
</table>

**Degradation of coastal ecosystems**

Despite the important roles of coastal ecosystems to human well-being, they have been degrading at alarming rate due to anthropogenic disturbances and natural disasters. Over the past 50 years coastal ecosystems have been altered more rapidly and extensively to meet the rapidly growing demands for food, raw materials, firewood, etc. resulting in the substantial loss of biodiversity and certain ecosystem services. The changes of ecosystems have contributed to substantial net gains in human well-being and economic development at the cost in the form of degradation of many ecosystem services that could significantly be worse and is barrier to achieve Millennium Development Goals [43]. The coastal ecosystems of Bangladesh are under pressure due to increased population pressure, habitat loss for conversion, uncontrolled coastal development activities, destructive resources use, overexploitation of resources, pollution and impact of climate change [2, 4, 5, 10]. The degradation of coastal resources poses critical challenges for the maintenance of desired ecosystem services that may have major impacts on the livelihoods of thousands of coastal communities through loss of earnings and food security. The major factors that influence the degradation of coastal ecosystems and well-being are summarized in Table 3.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Pressure</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population growth</td>
<td>Stress on limited resources</td>
<td>Vicious cycle of poverty, resource depletion, further impoverishment</td>
</tr>
<tr>
<td>Economic development</td>
<td>Undervaluation of ecosystem services</td>
<td>Encourage overexploitation of resources</td>
</tr>
<tr>
<td></td>
<td>Uncontrolled development activities</td>
<td>Loss of coastal habitat through conversion of wetlands, mangroves</td>
</tr>
<tr>
<td></td>
<td>Globalization</td>
<td>Diversion of fresh water from estuaries or land-based sources of pollution</td>
</tr>
<tr>
<td>Lack of law enforcement</td>
<td>Overexploitation</td>
<td>Access to markets and growing consumer demand (for both legal and illegal goods) increase pressures on resources and can lead to overexploitation.</td>
</tr>
<tr>
<td>Un可持续 exploitation</td>
<td>Unsustainable harvesting</td>
<td>Lead to marginalization due to greater mobilization of resources users, greater flow of information and access to resources, and loss of rights and representation of local peoples</td>
</tr>
<tr>
<td>Reducion of hydrological flow</td>
<td>Diversion of freshwater flow from estuaries and riparian zone</td>
<td>Conversion of coastal habitats (e.g. mangroves) into shrimp farm leading to mangroves deforestation and salinity increase</td>
</tr>
<tr>
<td>Pollution</td>
<td>Increased rate of eutrophication</td>
<td>Failure to protect critical habitat and breeding ground</td>
</tr>
<tr>
<td>Climate change</td>
<td>Frequent extreme events</td>
<td>Depletion of fisheries and mangroves forest resources</td>
</tr>
<tr>
<td></td>
<td>Sea level rise</td>
<td>Removal of keystone species can cause large scale ecological havoc, as biological communities have role to maintain ecological interaction</td>
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<tr>
<td></td>
<td></td>
<td>Hyper-salinization of estuarine areas and renders them unable to fulfil important ecological functions and services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prevalence of hypoxic or dead zones by increasing nutrient inputs and waste rise</td>
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<tr>
<td></td>
<td></td>
<td>Affect water quality, many provisioning and amenity services</td>
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<tr>
<td></td>
<td></td>
<td>Property damages, insecure lives and livelihoods</td>
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<tr>
<td></td>
<td></td>
<td>Affect species by changing sea level faster,</td>
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<tr>
<td></td>
<td></td>
<td>Stressing temperature-sensitive organisms (e.g. corals) and causing their death or morbidity (e.g. coral bleaching), causing increased incidence of pathogen transmission.</td>
</tr>
</tbody>
</table>
CONCLUSION

Coastal ecosystems of Bangladesh are central for the provision of a variety of ecosystem services. These ecosystems and associated services are under increasing pressure from a range of drivers that are compromising many of the ecosystem services crucial to the well-being of coastal people and economics. Such degradation highlight the importance of sound management and conservation of the coastal systems to maintain the sustainable supply of ecosystem services to human welfare in the coastal people of Bangladesh. It is therefore important to enforce the existing rules and regulations properly for effective management of coastal resources. Also, the existing policies and strategies should be reformed that consider the value of coastal ecosystem services. Assessing the roles of coastal ecosystem services and its value in monetary terms to the well-being of coastal communities and subsequently integrate into the development planning can thereby provide the basis to develop policies that support conservation and well-being of the coastal people of Bangladesh. Economic valuation of coastal ecosystem services by applying appropriate valuation methods can make explicit to people and to policy making regarding the scarce ecosystem services and their depreciation or degradation has associated costs to society.

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A Critical Literature Review on the Comparative Analysis between Principles versus Rules Based Accounting Standards

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\textsuperscript{2}IUBAT, Bangladesh

“Rules based accounting system” and “principle based accounting system”-a financial statement can be prepared by using these two methods, however local and foreign companies are facing problems for using these two different methods. In principles-based accounting system, there is a higher litigation risk and to avoid, management will be less aggressive in financial reporting and will also provide a reasonable level of comparability and consistency. This will reflect the real financial scenario of the company, and so investors may not be misled. However, rules-based standards encourage bending of the rules and the inflexible nature of this system leads managers to commit errors and fabricate earnings in complicated areas of GAAP and also worthless when economic environment changes and for new transactions. This paper is an attempt to suggest one better accounting standard for International Harmonization.

Experts' Review of Management Accounting Curriculum at Undergraduate Level in Bangladesh

S. Hossain\textsuperscript{1}, I. H. Haque\textsuperscript{1}, R. R. Iqbal\textsuperscript{1}

\textsuperscript{1}BRAC University, Bangladesh

Firms are shifting to new production techniques and thus introducing innovative accounting tools and applications in their business processes. However, management accounting curriculum, unlike changes in accounting practices, had little amendments over the past few decades. Graduates are often criticized for not possessing adequate skills for managerial accounting occupations.

Cost and Management Accounting curricula from top private universities of Bangladesh were reviewed to identify the topics being covered at the undergraduate level. With the aim of bridging the gap between accounting in academia and accounting in occupation, seven accounting professionals were approached for their insights regarding the topics and the curriculum as a whole.

Findings reveal a dynamic overview of what is expected of the candidates – the recent graduates in the working field. Interestingly the experts did not mention any new topics to be introduced in the curriculum but rather focused on how the existing ones should be taught. They suggested that the subjects should be taught with more practical lessons which would have greater applications in the future.
Developing a Logistics and Supply Chain Diagnostic Tool for Small and Medium Tourism Enterprises
P. Piboonrungroj\(^1\)

\(^1\)Chiang Mai University, Thailand

The ultimate aim of this research is to develop a practical logistics and supply chain diagnostic tool for small and medium tourism enterprise. Since there are little tools to help small and medium tourism enterprise to cope with their complex logistics and supply chain systems in order to control their logistics cost and create value in their supply chains.

Previous literatures on logistics and operations management in the service supply chain were intensively reviewed and critically described. Quick Scan Audit Methodology or QSAM developed in the Netherlands and the United Kingdom will be the foundation of the diagnostic tool. Also, the SCOR model will be used as the reference model. However, the reviews of other supply chain diagnostic tools and techniques. Then, the business process re-engineering was described its relationship with the QSAM.

The major outcome of this research will be a brand new diagnostic tool that small and medium size tourism enterprises can use to develop their logistics and supply chain system. Action research method and case study approach were utilized in order to gain benefits of these qualitative research methods. Last but not least, the proposed diagnostic tool will be evaluated by pilot cases. Finally, details of S-QSAM questionnaire and the application of mobile apps for the practical use.

Mediating Effect of Work Engagement on Perceived Organizational Support and Knowledge Sharing Behavior of Banking Employees in Bangladesh
S. Hasan\(^1\)

\(^1\)Bangladesh University of Professionals, Bangladesh

This study investigates the mediating effect of work engagement in the relationship between different dimensions (top management support, employee participation, training and reward) of perceived organizational support (POS) and knowledge sharing (KS) behavior among employees in private commercial banking organizations in Bangladesh. Using a sample of 360 respondents in structural equation modeling (SEM) analysis, the results specify a significant and positive relationship between three dimensions (top management support, employee participation and training) of POS and work engagement. The other dimension, reward has insignificant relationship with work engagement. Furthermore, work engagement shows a significant positive relationship with KS behavior. Last, the result indicates a positive significant mediating effect of work engagement on the relationship between three dimensions (top management support, employee participation and training) of POS and KS behavior. This study postulates the importance of POS in order to get employees' higher level of engagement and dissemination of their know-how among themselves. The findings of this study are considered together with limitations and suggestions for future research as well.
A Study on Measuring the Impact of Special Industrial Zones (EPZS and SEZS) in Creating Employment

E. Ashraf¹, A. A. Choudhury²

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²BRAC University, Bangladesh

Development of SME is very crucial in an emerging economy as it can play pivotal role in creating employment. The study aim at making a comparative analysis of performance in terms of employment growth between firms established in especial industrial parks (Export promotion zones and special economic zones) and firms that established outside of the special industrial parks. To conduct the study, the authors used data of World Bank enterprise survey where the author has chosen 191 firms from special economic zone and 1221 firms from outside special industrial parks. Then an independent sample T-test was carried out to see whether there is a significant mean difference in the employment growth rate of firms established inside the special economic zone and firms established outside special economic zone. It is found out that firms who were in the special economic zone have a better average employment growth than firms established outside special economic zone. The mean difference is significant which implies than firms that were established inside special economic zone has shown better performance in creating employment growth than firms who were established outside the special economic zone. A regression was estimated to predict the estimators for employment growth. It is found that Firms being established in Special Industrial park, Firms being owned by female and firms being owned by foreign entity has a significant impact on the employment growth. The outcome interprets that even though firms that are established in special industrial parks are creating more employment than firms that are established outside the special industrial park, is not the only factor contributing employment. Firms that are managed by women and foreign entity are contributing significantly in creating employment. Moreover, Age of the firms and firm being situated in Chittagong region has negative impact on the employment growth.

Service Failure and Implications for Customer Propensity to Return

S. S. Andaleeb¹

¹BRAC University, Bangladesh

Service experiences in the developing world can be exasperating. The culture of service is often not understood and, therefore, routinely ignored. While educating service providers is important, policy is needed to open up more service alternatives and establish a legal framework that holds those in violation of customer norms and expectations to pay a price.
Investigating the Purchase Intention of Green Product among Bangladeshi Consumers Based on Extended Theory of Planned Behavior

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Global warming and climate changes have been a popular topic of discussion among scholars all over the world. The main concern was to find out ways of protecting the environmental and ecological resources for future generation. Therefore; to maintain the ecological balance World Bank, WHO, SAARC and other influential organizations are trying to promote and practice the uses of green products. While green products are widely being used in the developed countries for environmental benefit, third world countries like Bangladesh is lacking behind from it. As a developing country, Bangladesh can give an effort in green marketing to make an effective example for environmental changes as the country is listed among one of the most polluted countries in the world. Organizations or businesses can try to build effective green marketing strategies based on the consumer attitudes towards green products. Accordingly this study tries to investigate young Bangladeshi consumers’ attitude towards green products who are aged between 18 to 25. Sample is chosen from renowned universities of the country. An extended theory of planned behavior model will be used to understand the consumer’s attitude towards green products. This same model was tested in Thailand and the results were positive. Quantitative survey method will be used to collect data and descriptive statistics and regression test will done to find the relationship of dependent and independent variables.

A Comprehensive Analysis on Ship Recycling Industry in Bangladesh: A Supply Chain Management Perspective

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1Bangabandhu Sheikh Mujibur Rahman Maritime University, Bangladesh

The process of dismantling ships to sell their parts primarily in a steel industry is known as ship recycling or ship breaking. It is the last phase in the life cycle of a ship and involves a wide range of supply chain activities from the procurement of a scrap ship to the distribution of its dismantled parts to steel industry as well as other associated industries. Bangladesh is the leading country in ship recycling.

The aim of this paper is to place a comprehensive analysis on three decision phases of supply chain namely supply chain strategy, supply chain planning and supply chain operation for the ship recycling industry in Bangladesh.

To administer the study, at first an overall picture of the operation area in Bangladesh at Chittagong has been depicted by identifying the actual practice. Relevant data have been explored through extensive review of literature, field surveys, interacting with the actors of this industry as well as different associated actors such as demolition market brokers, shipping agents, marine engineers and Government regulatory and monitoring bodies using structured and unstructured questionnaires.

The study has revealed the breaches and bottlenecks of supply chain strategy, planning and operation within the ship recycling industry in Bangladesh including inbound and outbound activities. It has also suggested the mitigating measures to remove those obstacles from the structure of supply chain management of this industry.
A Study on Academic Supply Chain Management: A literature Review

M. R. H. Rafi, I. K. Kakon, S. I. Mohiuddin, M. H. M. Chowdhury

Supply Chain Management (SCM) plays an important role in educational institute’s performance. Over the last few years’ lots of research has been prepared on Academic Supply Chain Management. However, there are very few papers those gave a clear projection and actual implementation of supply chain management in academia. This paper attempts to highlight very basic structure of educational supply chain management. Secondary data resources helped to conduct this research. Objective of this paper is to review the literature on Academic Supply Chain Management. We have selected four research papers on Academic Supply chain management for literature review. This research showed it is necessary to implement SCM in academia. Furthermore, it reveals a latest and brief review of Academic Supply Chain Management and the way it works.

Role of Supply Chain Management in Power Solution Provided Industry in Bangladesh

R. Das

The success of an Electrical Power Project is evaluated through parameters of quality, cost and time. Power solution companies use modern tools and technologies in order to improve the mentioned parameters in their supply chain. The obtained results of this paper revealed that supply chain management is crucial in different stages of power solution provided industry including providing materials and tools as well as designing, supervising and execution stages. Supply chain and its applications can be remarkably effective in each quality stage in order to reduce the time and expenses.

Developing Organizational Citizenship Behavior: Impact of Employee Engagement and Demographic Attributes

A. A. Ahad, E. Ashraf

Organizational citizenship behavior refers to anything that employees’ choose to do spontaneously and of their own accord which often lies outside of their specified contractual obligations. The fundamental purpose of this study is to illustrate the impact of employee engagement and demographic characteristics on organizational citizenship behavior. To do the study, the authors have randomly selected 99 respondents from two for organizations. The authors have used five point likert to build the index score on indicators of employee engagement and organizational citizenship behavior. Then T-test was conducted to see the impact of gender on OCB. ANOVA was used to see the impact of age and gender on OCB. OLS was estimated to see the impact of each variable from employee engagement on OCB. It is seen that age and experience has a significant impact on OCB. On the other hand, it is also found out that all the indicators for employee engagement has a positive and significant impact on OCB at five percent significance level.
Employee Job Dissatisfaction

R. B. Islam¹, S. A. Mona¹, S. B. Faisal¹, A. Prome¹, N. B. Ali¹

¹BRAC University, Bangladesh

The purpose of the study is to understand the level of employee job dissatisfaction. The source of our survey was secondary data analysis which was obtained from various websites, former research papers, blogs and journals. Job dissatisfaction describes the discontentment of a person’s attitude towards or about the job. Different factors like job promotion, compensation system, relationship with supervisors and co-workers, quality of environment, leadership style, flexibility to balance work and home etc. contributes to job satisfaction. Whereas the negative attitudes such as less appreciation, lack of interest, less cooperation etc. leads to dissatisfaction. Job dissatisfaction is also linked with absenteeism, employee turnover, declined rate of productivity and so on. The more the employees are dissatisfied the more their attitudes are negative. This study shows all these positive and negative aspects and their impacts in an organization. Overall, this research demonstrates the overall impact of job dissatisfaction and its reactions in an organization.

Consumer Behavior while Purchasing Smartphone in Bangladesh Context

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¹BRAC University, Bangladesh
²BGMEA University of Fashion and Technology, Bangladesh

Smart phone innovation is advancing quickly and it is impacting customers' practices, their everyday way of life, promoting, and business exercises. Client acknowledgment of Smartphone innovation is a basic key variable to decide its achievement in flavor's assault evolving advancements. Accordingly, distinguishing and better understanding key components that impact clients' appropriation of Smartphone innovation is to a great degree profitable for all partners. The essential point of this paper is to survey the current assortment of writing on subject identified with selection of Smartphone and to investigate how it was examined, what system were utilized and distinguish explore crevices. To start with area of this paper displays a prologue to Smartphone innovation, appropriation of new innovation and Information innovation (IT) reception hypotheses. Second segment presents writing from scholastics and professionals on themes identified with selection of Smartphone innovation. Third area presents discourse, inquire about crevices, look into proposed demonstrate and the conclusion
Social Media as Emerging Shopping Platform
M. T. Akter¹, S. H. Mahdee¹, R. T. Audhora¹, A. N. Tori¹
¹BRAC University, Bangladesh

Nowadays online shopping through social media has become a new trend among people. People are making buying decisions directly from their favorite social media sites rather than visiting websites. Mainly Facebook has positioned a very suitable and preferable place in the minds of people while they think of online shopping. Hence, we have selected this topic for our research paper. This research found that - information, perceived usefulness, ease of use, perceived enjoyment and relevance are the five dominant factors which influence consumer perceptions of online purchasing through Facebook.

The purpose in this report is to find out the use of social media in terms of business and to analyze the stakeholder’s behavior on buying and selling on Facebook, also how it is helping entrepreneurs and marketers.

Graduate Supply Chain Management in Education: To Enhance Digital Education in Bangladesh

M. H. Miraz¹, S. Ahmed³, M. H. Khan², M. M. Habib³
¹University Utara Malaysia, Malaysia
²American International University-Bangladesh, Bangladesh
³BRAC University, Bangladesh

Our 21st century economy strains a broad variety of innovative aids and profounder information in skill, expertise, engineering, and mathematics to both sustain our current society and be successful in the future. This imperative must initiate our collective university development efforts to confirm that every graduate is university and profession ready. New Digital Bangladesh necessities are being applied to compel local schooling agencies to make progress toward this significant goal. Though Graduate management is import fact for education supply chain. In addition, to make sure the educated job management we need proper Graduate management. Besides, the Graduate management via supply chain can enhance the graduate supply chain management system (GSCMS). In this study, we describe that how to address educator equity gaps, address the need expressed by many states and to help state, local education agencies.
A Fuzzy Based Approach of Comparing Different Methods for Minimizing Bullwhip Effect in the Supply Chain Management

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A supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer request or demand. The supply chain not only includes the manufacturers and suppliers, but also transporters, warehouses, retailers, and finally the end consumers themselves. Managing a supply chain (SC) is very difficult and challenging, since various sources of uncertainty and complex interrelationships between each member exist in the SC. The objective of every supply chain is to maximize the overall value generated. The value of a supply chain generates is the difference between what the final product is worth to the customer and the effort the supply chain expends in filling the customer’s request. An important phenomenon in Supply Chain Management is known as bullwhip effect (BWE), which suggests that the demand variability increases as one move up a supply chain. Bullwhip effect is an undesirable phenomenon in the supply chain which exacerbates the supply chain performance. The impact of BWE is to increase manufacturing cost, inventory cost, replenishment lead time, transportation cost, labor cost for shipping and receiving, cost for building surplus capacity and holding surplus inventories, and to decrease level of product availability and relationship across the supply chain. Various factors can cause bullwhip effect, one of which is customer demand forecasting.

In this paper, impact of forecasting methods on the bullwhip effect and mean square error has been considered. The preceding study highlights the effect of forecasting technique, order processing cost and demand pattern on BWE and mean square error (MSE). In this paper, the BWE and MSE have been evaluated using sales and order data. The results were analyzed using ANOVA and Fuzzy Logic, and finally the optimal parameters for minimum values of BWE and MSE have been determined.

Improvement of Service Quality at Automobile Workshop in Bangladesh

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The automobile repairing industry in Bangladesh is growing at a very rapid pace but the quality still doesn’t reach to the topmost mark. Due to advancement in vehicle technology the service requirement of vehicles has also become technology dependent. Demand of highly skilled workers is on the rise. Hence, there is growing demand for organized service retailing. The objective of this paper is to understand the market potentiality, existing condition of automobile repairing business industry, recent problem in automobile servicing business & a guideline of quality service. We describe the problems encountered by the client and how the simulation study illuminated a pathway to significant improvements in customer service and financial profitability. To understand the situation of automobile business in Bangladesh, a representative survey of customers, owners of different automobile workshop; technicians involved in this business and spare parts sellers was conducted. A secondary source was collected data from BRTA, automobile industry journal, internet sources; data published from business organization has been used for analyzing the situation. Necessary suggestions have been made and service center has started executing them for the improvement in current service quality level and improve their business performance.
Performance Measurement Framework of Supply Chain Management: A Multi Criteria Decision Analysis (MCDA), AHP Approach

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Supply Chain Management (SCM) performance measurement has gained noteworthy considerations from researchers and practitioners in the manufacturing paradigms for improving organizational effectiveness that can be applied to pronounce and review the historical performance, as well as to set performance targets for the future. Though, precise diagnosis and analysis of SCM performance is imperative to attain and enhance organizational productivity and profitability through focusing strategic, tactical and operational planning and control. The Enterprises scrutinize best fit to evaluate the existing approaches of performance measurement framework including financial, operational and balanced etc. However, a fit framework should be uncovered based on the characteristics of this competitive marketplace. In this study, a multi criteria decision making (MCDM) approach, demonstrating analytical hierarchical process (AHP) has been applied to select the best performance measurement framework. It also demonstrates analytic hierarchy process (AHP) based decision model has been demonstrated to structure the problem related to selection of supply chain performance measurement system in a hierarchical form with substitutes to the decision maker. In addition, AHP is an appropriate fit to undertake qualitative and quantitative analysis which also argues from other multi-criteria as subjective verdicts that instantly embraces and the pertinent inconsistencies are dealt accordingly. Furthermore, the outcome of the AHP is an optimum choice among decision alternatives. Therefore, AHP based approach recommended in this paper stipulates a more pragmatic and precise demonstration of the problem for selecting supply chain performance measurement system.
Motivational Factors Affecting Female Entrepreneurs in Urban and Rural Context

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\textsuperscript{2}Jahangirnagar University, Bangladesh

In urban Bangladesh, the opportunities to become an entrepreneur are endless for both men and women. However, it is quite surprising that among 103858 women-led micro-enterprises and SMEs in Bangladesh, 71\% were owned by rural women. This leads us to wonder why, since the opportunities for skillset-training and funding for enterprises are significantly better in urban-Bangladesh. The reason lay behind what motivated these women to start their own businesses. The study aims to identify motivational factors affecting urban and rural female entrepreneurs to start a business. It further intends to measure the extent to which these factors affect the said entrepreneurs, and finally compare the motivational factors affecting urban and rural women-entrepreneurs. Initial secondary research will disclose the motivational factors affecting these entrepreneurs. Based on these findings, a structured survey questionnaire will be circulated among tentatively 100 female entrepreneurs using random sampling method, with quota of equal respondents from both urban and rural areas. Personnel from Women Entrepreneurs Association of Bangladesh (WEAB), Women Entrepreneurs Association (WEA), and other institutions will be interviewed as key informants. It is expected that rural women go into entrepreneurship more than urban women for the need of financial security, as well as to employ unemployed family members. It may be that urban women are more motivated to become entrepreneurs due to intrinsic factors compared to rural women, such as self-fulfillment, sense of independence and desire to do something innovative. This research will reflect on the mind-set of female entrepreneurs from both areas, and help identify and overcome any barriers they may be facing. Simultaneously, this research may be enlightening for institutions that aim to encourage more female entrepreneurs from either area.

Know and Love Thyself First then Think about Organization and Its Balance Sheet

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We need to think about ourselves first, before thinking about others. We need to learn to love ourselves first, before we think of loving others. “Why don’t we think about ourselves?” “Why we don’t love ourselves”? May be we have never known or learnt to think and love ourselves.

Why are the world, country, society and people becoming restless and peace less? This is because all individuals are now in a race. However, when we are in a race with ourselves for love and peace then the race will not make us restless. Our academic, family and religion system do not teach us to love and respect ourselves. Our education system does not connect our learning with our self-development, so we are not learning from our heart.

We dedicate our precious time for our friends, family, children, relatives, work, prayer etc. But where is the time for myself amidst all these? May be, we do not give ourselves even a single moment.
Utility of Human Resource Outsourcing to the Corporate Sector in Bangladesh

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BRAC Business School, BRAC University, Dhaka, Bangladesh

Human resource outsource is globally recognized concept, many organization outsource their many HR services where they cannot concentrate. It creates scope for the organization who lack in human resource expertise or does not have enough resources to provide HR services. Many organizations outsource their HR services to increase their operation efficiency. Many of them decide to do so just to save time and effort. It is difficult and costly for many organizations to maintain all their HR service while keeping abreast with latest technology. Human Resource outsource is relatively new concept in Bangladesh. It is not so much in practice. It is totally new phenomena for them to accept. Organizations do not have a clear idea how this work or how it can be used in cost effective way to gain competitive advantage. In this paper, we focus on how human resource outsource function make a positive effect on work performance, the attraction and the scope it creates and also the challenges that relate to human resource outsource that corporate domain of Bangladesh may face. We will also discuss the services that can be outsourced and that would support and affect the core competencies. We also focus on analyzing emerging trend of human resource outsource trend in Bangladesh and what core and non-core activities can be prioritized for HRO. There are some facilitators that act behind successful Human resource outsource that need to be concentrated on in outsourcing decision. This study is applied in nature to identify the factors related to human resource outsource. For the study a questionnaire was used to collect the data from the professionals from many large and medium organizations. The finding reveals the aspect of HRO in the business scenario of Bangladesh.

Measuring Festival Quality Affecting Visitors’ Satisfaction: A Case of Chiang Mai Flower Festival 2017

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Chiang Mai Flower Festival is one of famous festival that makes Chiang Mai be “Rose of the North”. This research aims to improve Chiang Mai Flower Festival to become world class festival by finding relationship between festival quality and satisfaction perceived by the visitors who attend Chiang Mai Flower Festival 2017. This study will lead to understanding what factors affect to visitors’ satisfaction and help organizer to improve quality of Chiang Mai Flower festival in the future. The literature reviews included visitors’ satisfaction and festival quality which most of them represented Structural Equation Model. This study collected data from visitors, sellers and organizer within Chiang Mai Flower Festival 2017 by using interviewing as instrument. The data analysis will use Structural Equation Model to analyze relationship between observed factors and satisfaction perceived by the visitors in Chiang Mai Flower Festival 2017. The result found that the most important factor that affects to visitors’ satisfaction is festival’s activities, followed by information, festival areas and services provided within the festival. However, this result came from only interviewing that should more information by using questionnaire as instrument.
Attendees’ Satisfaction on Convention: A Case of Convention in Thailand
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Convention business is one of the MICE industry which from meeting, incentive, convention, and exhibition. Convention can bring significant economic effects to the hosted area. In terms of Thailand, convention industry bringing in the highest number of visitors from MICE travelers in Thailand (31 per cent) and can generate revenue more than 27 million baht (33 per cent).

Therefore, this paper aims to analyze the satisfaction of the convention’s attendees using the case of the International Convention on Asian Scholars 2017. This convention held in Chiang Mai province, Thailand, which more than 1,200 attendees around the world in the field of Asian Scholars. The concept of Convention Industry Council (CIC) was adapted to analyze the satisfactions of attendees. The primary data were collected from 200 attendees during the event. The result found that human resource management aspect has the highest satisfaction score compare with another 11 aspects, followed by the performance, professionalism and conference design. While the financial management aspect was the lowest satisfaction scored. Thus, stakeholders who involve to the convention should provide more services that could make attendees happier, not only the reasonable of convention fee but also the valuable services that have good value for money they spend.

Exploring Impacts of Visitor Experience in the Special Event: A Confirmatory Factor Analysis Model of the Chiang Mai Flower Festival
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Local festivals become one of the important attractions of destination in the tourism industry. To augment visitor experience, festival organizer need to measure the visitors’ experience for seek an improvement. However, the scale to measure local festival experience is limited. Therefore, this paper aim to develop a measurement scales for a local festival experience. The scale was developed from literature and revised by in-depth interview with event organizer and stakeholders. Then measurement scales of 13 aspects were developed and tested with 794 observations collected by self-administrated questionnaires with Thai and international visitors. Data were fitted with the measurement model technical using CFA results confirmed the proposed measurement model for both domestic and international visitors. Also goodness-of-fit indices exceeded the required level and all coefficients are significant at 0.05 level. The results of this study show Thai visitors preferred city decoration, cultural performance and contest whilst prefer International visitors that activities are the flower parade and exhibition flora. Moreover, factors of local festivals are most interest for both local and international visitors. The factors are on-stage activities and Flower exhibitions.
The Growing Clout of Rural Consumers of Bangladesh

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Most Marketers must realize that Bangladesh is on the cusp of momentous change. The economy is vibrant, incomes are rising, and the habits, preferences and attitudes are changing rapidly. But, this change is nowhere more evident than the rural parts of Bangladesh. Previously, any product that was of low price or not selling well in the urban markets was pushed to the rural markets. Rural consumers were collectively considered as homogenous, price-sensitive and looking forward to products for mere subsistence.

Nevertheless, over the last two decades, various factors have contributed in making rural markets of Bangladesh a brilliant destination of future profit margins.

Now, one vital question that needs to be answered is how can we be convinced that Rural Consumers of Bangladesh have become so attractive.

The following major areas of progress that the rural markets of Bangladesh have experienced are all positive indicators.

- Large Population-Untapped potentials: With more than 70% of its population residing in the rural areas, it would not be wrong to describe Bangladesh as a ‘giant village’.

- Half the country's income is with rural consumers: It involves addressing some 100 million consumers. About half the country’s Disposable Monthly Family Income (DMFI) is with the rural population.

- The power of their Pocket isn't ignorable anymore: 14 billion dollars has been pumped into by the remittance earners in the fiscal year (2015-16). This huge money is eventually consumed by the rural population of Bangladesh. Also,
  - Rural development under government’s five-year plan,
  - NGO activities (Micro-credit and women empowerment programs)
  - Increase in agricultural output (by virtue of hybrid seeds)

- Growth in consumption & Change in Life-style: There has been a surge of change sweeping across rural Bangladesh. Remoteness is not a problem anymore due to wide spread use of mobile telecommunication, improved high-ways. Rapid rural electrification made the people equally ready for modern technology.

It is well understood that eventually, Marketing is profit driven and not about charity. How and why rural consumers of Bangladesh have become profitable segment and next growth-driver would be discussed in detail as the paper progresses.
**Participation in Decision Making on Building Relationship Quality: A Retail Industry Perspective**

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In today’s competitive retail industry maintaining relationship with the suppliers has become very important to the modern day retailers. To develop and maintain long term relationships with their suppliers, the retailers need to identify and understand the key antecedents enhancing the quality of their relationships. This paper seeks to shed light on the effect of participation in decision making on relationship quality in retail industry. This study is exploratory in nature and involved factor and multiple regression analysis. Data was cross sectional of nature and the unit of analysis was individual retail companies in Bangladesh. The results of the regression analysis showed that participation in decision making became strong predictor in influencing the quality of retailer’s relationship with their suppliers. The characteristics of the participation in decision making factors from the study indicated that future research should focus and incorporate other factors influencing relationship quality in the retail settings. The results from the study identified the role of participation in decision making in influencing retailer’s relationship quality. Based upon which the retailers can take necessary steps to develop effective relationship marketing strategies with their suppliers.

**The Necessity of a Rock music based FM station in Bangladesh: A Case Study**

K. N. Anwar, R. Ahmed

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Although the definition of “media” is huge nowadays, radio industry has become the one with most reach to people due to all the busy schedule of the day. In a world of radio stations which play literally any music that is available, there’s a necessity of pure rock music playlist for the listeners who has been into rock music all time through. This paper is a reflection of a case study that revolves around a new rock station in the country who took the challenge of having a playlist that has only Bengali & English classic rock songs. The case study describes all the challenges and struggles the new FM Radio Channel went through in the phase of establishment and testing period and how they are using their Unique Selling Proposition (USP) so far. The paper will reveal an insight of the FM Radio Channel industry in Bangladesh.
Impact of Corporate Social Responsibility on Organization Performance in Bangladesh
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Corporate Social responsibility (CSR) has become an essential appliance to maintain a social contract between corporate and society. Earlier CSR activities were confined to full filling their responsibilities towards the society. However, a number of recent studies have revealed that CSR activities often lead to greater organizational performance.

In Bangladesh firm engagement in CSR activity is increasing but the impact is still need to investigate. The core objective of this study is to find out the Impact of CSR activity on firm performance.

To conduct research more than 50 organizations were randomly chosen those are coherently operating in Bangladesh. All relevant data of this research has been collected form secondary data source (Annual report and organization website). The outcome of this study may help firm to take decision over their CSR activity.

CSR Practices in Shipping Industry: A Case Study
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As shipping industry in Bangladesh is spreading, its corporate structure also needs to be reconstructed. Corporate social responsibility creates goodwill of the company and goodwill helps to build up sustainable business. This paper explores the development of sustainability and its links with Corporate Social Responsibility (CSR). For sustainable business, our shipping companies have to increase CSR practices in their respective fields. But in our country CSR is not practiced widely. Only few companies practice CSR to develop their corporate image. We have analyzed sixteen shipping companies in Bangladesh. Among them we found only seven companies practice CSR. Others have limited knowledge and practices of CSR. The paper will then conclude by looking at what companies can do to demonstrate their commitment towards sustainability through Management Systems. Production of credible, open and transparent accounts of these non-financial operations is just one such mechanism and one that can help to protect your brand reputation and hard assets.
Driving Social Commerce Values: The Roles of Business and Marketing Strategy, Technology Capability and Ethical Conducts

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Business models are evolving. The development of social networking sites (SNNs) promotes for the emergence of social commerce. Without doubt, social commerce provides values to both consumers and businesses. While social commerce has been widely accepted especially in the East, its simplicity and open interactions draw the attention of data and business protection needs. In addition, as more and more Muslims are participating in social commerce, it is imperative to ensure the practices comply with Islamic business rules. Therefore, based on the Muamalat principles, we offer an insight on how social commerce could be operated without violating the Islamic philosophies of business conducts via Islamic marketing strategy and business ethics. We also discuss on the importance of business strategy in social network and technology capability possession. We believe by providing the discussion, it would safeguard both business and customers from any malpractices and business dishonesties that will jeopardize the Muslims’ image. We also provide recommendations and future research strategies.

Facebook Page vs. Websites: A Dilemma for e-Commerce Industry of Bangladesh

M. H. Nahid

The definition of e-commerce traditionally indicates online shopping activities carried out through mainly a website (a domain and hosting for the business organization). Social media tools like Facebook promotion is considered to be an add-on or e-commerce enabler. However, in the case of Bangladesh it is the other way around. It is estimated that there are around 1000 websites and 10,000 Facebook pages through which online selling is carried out in this country.

Our study shows that fundamental reason of this dilemma is not having some basic complementary and contemporary technical and business knowledge. They mostly didn't know how to create a responsive landing page within their budget and how to manage by themselves. Another important reason behind the popularity of Facebook pages to the entrepreneurs is that there are more 22 million Facebook accounts in the country and for many people; Facebook means their whole online activities.

As this form of expenses are operational loss, due to the fact a proper knowledge of business is important for this sort of start-ups. Besides the industry itself is growing faster and maintaining update with the industry with international standards. This is a key strategic asset to these start-ups, so that factor being compromised is detrimental to the start-ups financial valuation. Furthermore, this predicament leads to investment disarray and finally ends up in marketing and operational failure.

Nevertheless, we have identified few success factors and best practices that helped the young start-ups survive the first year and grow their business eventually. Finally we have offered some recommendations to offer virtual awareness campaign and online crash courses. A module designed by meticulous studies and fieldwork survey which are vital to its study nature of being a comparative study between expected and accurate results.
Innovative Marketing Strategy: Multinational Companies in Bangladesh
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This research deals with Marketing of products. We analyzed how adaptation/standardization and network development are achieved when marketing products in Bangladesh as an emerging market. We conducted case studies for data collection in British American Tobacco, Perfetti Van Melle, Tetrapak, and Reckitt Benckiser. Qualitative data have been collected as semi-structured interviews, direct observation and documents. It is argued that renowned global brands with global reputation are seen positively by the customers and the consumers. The study demonstrates that relationships related to the local market are to be adapted to customers’ preferences to develop emotional attachments and networks. The study suggest that a balanced combination of product quality and development of new diversity of products adapted to the needs of the market and the customers establishes trust and networks giving the possibility of success for product providers and the acceptance of products by the local customers. The research contributes to international marketing literature by developing a model of products’ marketing based on trust, network and adaptation/standardization.

Impact of Retail Store Location on Consumption Behavior: A Literature Review
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Intuitively taken, consumers usually travel to the closest Retail point for buying a product of particular category, other factors remaining constant. Their travel behavior is largely determined by the type of shopping needs. For a high stake purchase, consumers are ready to travel farther. Central place theory (Christaller 1933) holds that there is an average maximum distance people travel for buying goods and services. Other scholars mentioned that consumer may in fact travel farther if there is attraction of larger store or specific product. There are few literatures on influence of store location on consumer’s travel to shopping and thus consumption behavior. This article is based on those literatures. A Store’s individual location is important, and so is a number of Stores’ relative location creating agglomeration effect. Consumers usually bundle their purchase needs while they intend to move out for shopping. In such case, different categories of shops offer consumers a wider choice and thus promote consumption. Though importance of Retail site selection has been extensively studied by the scholars, location’s influence on consumer has remained relatively ignored. Location includes a number of factors- travel distances, site attractiveness, communication facilities, demographic potential and competitive sphere etc. Though most of the articles conclude that sales performance is inversely related with distance, there are many other factors that work in association with the notion of location, making a straight conclusion less justifiable. Reilly’s Law of Gravitation, Huff’s Probabilistic Model, and other articles are analyzed. Current article is an effort to consolidate the views of different scholars on this issue and make a comparative analysis based on them.
Factors Affecting the Online Shopping Adaptation in Dhaka, Bangladesh

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The Internet is considered as global communication medium which is progressively being used internationally as the most essential tool for every business. At the beginning of 2016, Internet users in Bangladesh reached approx. 62 million. Nevertheless, online shopping in Bangladesh is not extensively practiced but organizations are investing in B2C online shopping, so the prerequisite is to understand the factors that move Bangladeshi consumers’ online buying behavior. This research cultivates a theoretical research model as a framework to identify the key resulting issues influencing Bangladeshi consumers’ to shop or not to shop online. A self-administered questionnaire was used to collect information from 149 respondents in Dhaka, Bangladesh. The experiential analysis identifies significant decision factors such as: Price, Service quality & Responsiveness, Consumer resource, Perceive risk, Trialability & Generation gap, Website factor, Payment Process, Demographic. All of these decision factors impact on Bangladeshi consumers’ adoption of online shopping. This paper will also suggest which sectors need to improve to strengthen the online business. So, decision-making suggestions and recommendations are also will be described.

An Exploratory Study on Adaptability with the Major Shift in Consumer Behavior in Food and Beverage Industry

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With the advancement of information technology, today’s business world is moving at a faster pace. Day to day business operation in Food & Beverage industry is highly influenced by today’s progressed communication flow. The study has been conducted by using both primary and secondary data where interviews from professionals in the industry and relevant studies had been analyzed. This study deals with some remarkable changes in the thought process and purchase behavior of the consumers in Food & Beverage industry as well as about the actions to cope up with these changes. Some insights from reputed Multinational Companies have been incorporated in the analysis. Nowadays consumers are more health conscious and interested in detailed knowledge of a brand rather than having faith on company reputation or authorized certification. This shift in consumer thought and purchase behavior induces companies to provide more clarity in their communication. For this, digital media has been proven an effective method in recent years by assuring enormous reach of a brand in the market with a very nominal budget. Moreover, digital marketing is being used efficiently in retaining consumers for a particular brand. Overall, this recent development in communication along with traditional media is contributing significantly in maintaining a sustainable customer relationship with the brand.
Go Beyond! Factors Causing Volatility in Share Prices

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The purpose of this report was to evaluate the significance of dividend policy and earnings per share in explaining the volatility in share prices. Two companies from the financial industry out of the 20 companies in ASX20 were selected and data from a period of 1991-2012 were collected. It employs correlation and multiple least square regressions in order to establish the null hypothesis which states that “Dividend Policy and EPS have an impact on Share Price Volatility”. The independent variables to carry out this hypothesis were total cash dividend, market value, and income after tax and EPS while the dependent variable being the Price Volatility. Investor’s preferences affect the share prices in various ways and therefore many studies have been undertaken to help these firms evaluate the reasons behind these fluctuations and take better measures to create different policies. To the best of the knowledge, this report has undertaken variables that have not been frequently studied on before and have shown quite a few good models. Although it was recommended that a large sample data should be taken while doing further research, in order to get a far better result.

New Interest Rate Model for Entrepreneurs

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The paper is about the new interest model for entrepreneurs. The great problem to start any business in a developing country like Bangladesh is raising fund. The banks provide them loans at a higher interest which is very much demotivating. So, in this paper, a new loan system will be offered which will be applicable only for the entrepreneurs. The new model of interest charging policy for entrepreneurs will boost their confidence. The model is about reform of interest charging time. The banks will not charge any kind of interest or service charge on bank holiday. The interest rate will be the same as before only timing will be changed. There will be one condition that, the entrepreneurs have to keep their money in those banks in their accounts. The interest rate will be set after consolidating all the cost and minimum profit for the bank. The profit should not be the main concern because, if the entrepreneurs can proper, then there will be more investment and the banks will be successful in anyways. The banks might think about the profit ratio, so to keep the balance they can reduce the deposit rate to match up. Everybody care about the profit, but they didn’t think about the entrepreneurs, it might output little profit but it will boost up the entrepreneurs and that will bring a large amount of output.
Investigating the Acceptance of Technological Features of Health-Related Websites in Malaysia Scenario

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Many people especially the young generations are becoming more aware of the importance of taking care of their health’s and well beings. Remarkable developments in technology have allowed people to get more information about diseases, illness and health thru among others, health web portals. As web portals and design features are aplenty, this research explores the acceptance of their technological features. Based on Information Systems Success Model’s constructs of information quality, service quality and system quality, a survey instrument was designed, validated and distributed to university students in Malaysia. In total, 482 data was used for the exploratory and internal consistency tests. The study is important as it helps in providing important directions for the important technological factors influencing the success of a health care website for improved e-health literacy, which would potentially yield refinements in the current website.

ICT Application in Supply Chain on Numerous Grounds’ in Education and Industries Assimilation

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Information Technology (IT) tackles the Supply Chain (SC) limitations of doing the business in the present period. As much Information Technology has increased chances of innovation and but on the other side various new types of problems are also reported in the effective use of IT tools. One of the most important focuses of Supply Chain Management (SCM) is evolving IT skills nowadays. The idea of modest economy in the globalized world is growing with the significance of efficient SCM in service sector. The query raised over here is that whether the facility of corporations is adopting the perception of SCM in an effective method or not. Implementation of appropriate supply chain skills in service governments can have appropriate and precise information obtainability for their decision assembly procedure. This implementation of proper Information Technology tools in the SCM is the maximum significant factor to make the most of the effectiveness in the service organizations. Service societies in Bangladesh are facing several difficulties and contests in successful execution of supply chain technologies. Based on the information collected from surveying supply chain and logistics administrators in 52 organizations based in Bangladesh, this research suggests the possible challenges of Supply chain technologies faced by diverse classes of service organizations. The outcomes provide a new possible challenge faced by the service organizations to implement supply chain technologies.
Constructing Perceived Intention to Use Social Network Platforms: Perspectives from BoP Consumers

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This research investigates consumer’s perceived intention to use (PIU) social network platforms at the Bottom of the Pyramid (BOP) Market. From previous literature the paper addresses factors affecting PIU to construct the antecedent variables. The scales operationalized in this research were adapted from Perceived Usefulness & Perceived Ease of Use (derived from TAM model), Social influence (derived from TRA and TPB model) and Perceived Enjoyment (derived from extended TAM model) from previous research works. The research applied cross sectional design, where data were analyzed through multiple regression procedure. The Findings of this study may contribute to theoretic and managerial implications for social networking sites, phone manufacturers and other industry players to target this vast, yet untapped potential market.

Harassment and Discrimination Issues at Higher Education Institutions: Issues and Solutions

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In the fast growing economies, role of men and women is equally important in organizations. However, there are many issues and problems occur at workplace and create harassment and discrimination against women. In Pakistan, 70% of the women face harassment at work place. During 2008 to 2010, there were 24,119 cases of violence against women were reported out of which 520 workplace harassment cases were filed. There are many higher education institutions where female employees are working to gather with male employees. In such organizations, females’ employees are facing serious harassment and discrimination issues. Despite of legislation to overcome this discrimination and harassment problems, issues of workplace safety are not ensure in higher education institutions of Pakistan.

In this research paper, it is argued that female employees face harassment and discrimination indifferent situations at work places and they face verbal and non-verbal types of harassment. Additionally, issues and situations of harassment and discrimination are investigated though interviews and discussion in the higher education institutions.
Factors Affecting Women's Higher Education in MBA in Bangladesh
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When a society is concerned for providing better educational opportunity for male and female then it will start emerging in socio economic sector. In a developing country like Bangladesh, the situation for the females in terms of education is way more lenient than 15-20 years before. But in the 21st century women face hitch while completing their post-graduation. Among all the options females choose MBA for completing their post-graduation. The main object of the research is the reasons behind women in Bangladesh choose MBA as their post-graduation degree. So that after reading this research anyone can get the basic idea about the factors rather only having the motive of getting higher education, there are many other aspects influence women to choose MBA. This study is based on only females who are currently doing or already completed MBA in different universities of Bangladesh. All the information’s were collected through primary sources, by a qualitative survey question paper which consisted of 20 questions. Moreover, the study is done from on the 30 female MBA students and graduates from 2000 to present. After a in depth qualitative research it was found that, a huge amount of MBA graduate students are doing and have finished their MBA on their parents demand. Moreover, the probable more desired chance in career is another important factor behind having MBA degree. From the survey some other very interesting factors came out in light, some people searched for educated daughter in laws who’s MBA degree will count as a qualification, some parents wanted their daughters to complete to have better future, those who got the chance to do MBA in Dhaka University they considered its value in the market along with a minimal cost. There were some other issues came out after this study. Finally it can be said that, this study is done for a clear understanding that, in a country like Bangladesh most of the time women went for Masters in Business Administration, had to consider various factors.

Scarcity of Resources and Challenges of Pre-Advising
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Proper academic advising is vital for maintaining the sequence of courses and this will propulsion to complete degree within definite time frame. To comply this, BRAC University (BRACU) started pre-advising system to engage and access students directly to course offering catalogue where they can choose and plan courses for the next academic semester online. Though BRACU had Intranet-based academic advising management system from the inception with limited students’ capacity and gradually this system overloaded due to increase students enrolment over the years. The objective of this paper is to evolve BRACU pre-advising system, its challenges, scalability and decisive outcome. This system comfy students’ academic advising; and its internal logic guide to students to register into correct courses without any dispute. On the other hand the efficient pre-advising system let out and save time of advisors for choosing students’ courses and matched schedule. There is a scope to improve this system further and serve seamlessly to BRACU community and ease the ploy of students, academic advisor and staff.
Reviewing Parents Influence over Women’s Area of Study at the Undergraduate Level in Bangladesh

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A parental attitude had been playing an indispensable role on women’s choice of continuing education in our society. However, over the last few years the rate of women in higher education showed improvement suggesting families have been more supportive than before. Nevertheless their freedom on choosing their desired field of study in Bangladesh may be compromised for various reasons. The study aims to document such instances where women are being restricted to a particular field of study by parents. It also intends to find out the impact of such imposition on the performances of students. Over 150 females who completed or are pursuing undergraduate studies at private universities of Bangladesh were surveyed. Results indicate that the most important factor for women in choosing their desired area was their own interest. Others include job prospects and opportunities for higher studies along with parental influence. Though parents do have good influence over women on choosing their area of study, they do not impose their choices. Less than 10% of the respondents showed dissatisfaction over their field of study. However none of them blamed it on their parents’ choice or influence. The possibility of the respondents coming from privileged social backgrounds who could avail tertiary education at private institutes might be a reason behind the biased result. An extensive study comprising respondents from different spheres can be conducted in the future.

Performance Appraisal using CAMEL Approach: A Comparative Study of Publicly Traded Banks in Bangladesh

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CAMEL rating has drawn the attention of regulators and academic researchers to use to evaluate the performance of a financial institution. This study illustrates, over the five years (2011-2015) period, performance of publicly traded commercial banks in Dhaka Stock Exchange (DSE) using CAMEL approach. This paper uses ratios suggested by academic researchers (Gupta, 2014) and (Kabir & Dey, 2012) to measure capital adequacy, asset quality, management capacity, earning ability and liquidity of total thirty publicly traded banks in DSE. Relevant ratios were obtained from financial statements of selected banks. Pair wise correlation analysis was performed to investigate the strength of the relationship between ratios. Kolmogorov-Smirnov test has been applied to test the normality of data. Finally, ANOVA was used to test whether there is any statically significant difference between the CAMEL ratios. The findings of this study would unlock further frontiers for the practitioners and regulators to analyze soundness of selected banks.
Islamic Banking in Bangladesh and Malaysia: A Comparative Study
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Islamic banking in Bangladesh dates back to 1983, comprising more than one-fifth of banking industry in terms of deposits and investments in 2016 (Bangladesh Bank, 2016). However, a host of limitations impeded its growth potential in Bangladesh while other countries have performed better within same time-span owing to favorable system. This paper will be a descriptive study on current status of Islamic banking in both countries, with Malaysian Islamic banking regulation and practices as the benchmark for comparison because they are considered to have the most advanced and comprehensive legal, regulatory, supervisory and Sharia governance frameworks in place (Parker, 2017). The paper will be based on secondary data and will employ a qualitative approach. Data will be obtained from literature on supervision and regulation of Islamic Banking and policy and regulations relating to Islamic banking available in official websites of the central banks of Bangladesh and Malaysia. The findings are expected to shed light on the limitations of Islamic banking system in Bangladesh. Contrasting differences are expected to be evidenced in Sharia compliance, legal and regulatory framework, level of product development and diversification and on-going practices. However, Bangladesh is expected to do better in Islamic microfinance with current state of microfinance prominence in rural areas. The findings will assist policymakers and stakeholders understand the current status of Islamic banking in both countries and the impact of the differences. These may work as directions to the supervisory bodies to govern their future responsibilities and policy makers to formulate better and exclusive Islamic banking policies and framework for Bangladesh.

Systematic Literature Review on Green IT Practice and Executional Factors
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Green ICT practice is immediately turning into a key business component for many organizations. Thus, this study aims to examine Green IT practice research in the literature. At the same time this study emphasizes that the practice of implementing Green IT can be applied by any organization. For that purpose, a Systematic Literature Review (SLR) method is used in which 57 out of 150 studies meet the search criteria. From that number 18 studies focus on Green IT practice. Based on the analysis of the studies, 17 factors are identified as motivators for organizations to apply Green IT practice. Therefore, this paper will be a useful guide for organizations to bring in greener technologies in the application of Information Technology.
Crowd Sourcing
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Since the coining of the term “Crowd sourcing” by Jeff Howe, it has been a popular concept. It was used to describe online revolution of amateurs creating content and sharing them through the Internet. He talks about crowd sourcing by mentioning four key points. Even though it is initially described that crowd sourcing is an open call to an unidentified crowd, closer analysis of the practice of crowd sourcing proves it to be otherwise. This paper tries to identify the journey of crowd sourcing, starting from the idea of Open Innovation by Henry Chesbrough (2003) to its current form. It identifies the most popular forms of crowd sourcing as crowd funding, crowd voting, crowd creation and crowd wisdom. The crowdsourcing practice of each of these four types is looked in to closely by studying the cases of Fiat, Phillips, IBM, Indie GoGo and Thread less. The cases are summarized based on six process characteristics: the crowd, the platform used, the initiator of the process, and incentive for the crowd, intellectual property issue and outcome of the process. A critical analysis of crowd sourcing demonstrates that besides the positive characteristics of crowd sourcing, there are some limitations of the concept. However, crowd sourcing has changed the way companies interact with communities and different companies use different models of crowd sourcing based on their needs, as evident from the empirical evidence.

Implication of Green Procurement in Private Universities – A Case Study

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The purpose of this study is to demonstrate that through Green Procurement private universities can ensure sustainable consumption and production. Universities are the suppliers of labors into the corporate world therefore, if the universities can ensure green procurement to ensure sustainable consumption into its premises and collaborate the students into this process, the students would develop environmental stewardship. When the students become environmental stewards and enter the corporate world to take leadership they will force the policy makers to implement Sustainable Production and Consumption. The study has been conducted on BRAC University, a leading private university in Bangladesh. A survey has been conducted by taking more than 100 respondents and after analyzing the survey results and the finding an integrated model has been developed to show how green procurement can ensure sustainable production and consumption.
Deliberate Dropouts at English-Medium Schools in Bangladesh and Their Performances in Tertiary Education
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The concept of English being the medium of instruction in primary and secondary education gained incredible momentum over the past few decades in Bangladesh. Thus the number of schools following the Edexcel International General Certificate of Secondary Education (IGCSE) and Cambridge International Examination (CIE) increased rapidly, which are commonly referred as ‘English-medium schools’. However a prevalent practice, though not documented yet, amongst English-medium school-goers is that they tend to leave schools and opt for private tuitions during or after Standard VIII to prepare themselves for Ordinary Level (O’ Level) exams. Thus a good number of students advancing from secondary to tertiary education fall short of 12-years of schooling.

The study aims at documenting the practice of English-medium students deliberately quitting schools for private tuitions. It also intends to find out if this practice has a negative impact on tertiary education of such student’s or not. Over 200 students from the authors’ networks from different universities of Dhaka, having English-medium schooling, were approached with semi-structured questionnaire.

The study concludes that majority of the respondents did not complete 12 - years of schooling. Lack of qualified and skilled teachers from Standard VIII in schools and early completion of secondary studies were portrayed as the main reasons behind this practice. However, there was not any significant difference in the average results at tertiary education between students who did complete 12-years of schooling and those who did not even though the latter group scored a little lower. Thus one may argue that if there isn’t any significant contribution of 12-years of schooling, then curriculum in such schools should be revised which can be a matter of further investigation.

Health Literacy and Healthcare Utilization among the Elderly Outpatient in Malaysia
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In today’s world, health consumers are required to participate in more complicated preventive care, understand more complex health information and navigate more complex health systems. As information, choices and decisions about healthcare and public health have become more complex, the role of health literacy is very crucial in assisting the elderly in their decision-making related to healthcare. Various issues on health literacy are related with the elderly as they utilize more healthcare services and acquire more chronic illness than other age group. However, in Malaysia research on health literacy particularly on the elderly is limited. In view of this phenomenon, the study is proposed to investigate the relationship between health literacy and healthcare utilization among the elderly people in Malaysia. Moreover, the study aims to bridge the gap in health literacy literature by understanding how health literacy lead to the utilization of health care facilities align with healthcare focus and resources with the government’s agenda in promoting the health literacy programs for the elderly as espoused in National Key Result Area (NKRA) for the health sector. A positivist approach was used to explore the
relationship between the variables. The study was primarily conducted via administered survey among 500 elderly outpatients who are 60 years old and above in public hospitals in Malaysia. The level of health literacy was measured using Health Literacy Management Scale (HeLMS), which measure knowledge where to access health and application to manage health. The result discloses that the elderly score higher on knowledge to access health compared to application to manage health. The findings further revealed that there was a negative correlation between health literacy and healthcare utilization. The results of this study can form the basis for useful recommendations for healthcare providers and policy makers in promoting appropriate education programs, which may help to improve health outcomes and reduce unnecessary healthcare visits and cost.

**Potentialities of Tea Tourism Destinations: A Study on Tea Estates in Chittagong**

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Tourism is one kind of activity to travel at any destinations for relaxation or other purposes. In our country nature tourism is quite popular among domestic and international tourists. Tea tourism is another form of nature tourism. In Bangladesh Sylhet is the most popular Tea tourism destination. People want to discover new things, new ideas as well as new destinations. Chittagong Tea Estates can be the tea tourism destination in Bangladesh if proper promotional tools are used to aware tourists and initiatives are taken to improve the area. The objective of the paper is to identify the potential Tea Tourism destinations in Chittagong and promote those areas. This study is based on qualitative research method with primary and secondary data collection procedures. The first section of the paper deals with introduction followed by an overview of Chittagong Tea Estates. It then presents the promotional tools to be used to highlight the destination. Finally, the findings of the study are discussed to develop some policy recommendations.

**Full Steam Ahead: Real Challenges in the World of API Production**

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This paper addresses the current API (Active pharmaceutical ingredients) production systems in Bangladesh and internal manufacturing conditions revolving API. It covers the spectrum regarding the business decisions about API production, distribution and export-import. It provides a brief comparison analysis between the Local producers and international suppliers from the profit orientation point of view of Bangladesh. AFC (Active Fine Chemicals) being considered to be one of the prominent organization in API production in Bangladesh, this paper proceeds to an in-depth analysis on API industry by choosing the discernment of AFC personnel as the base since AFC has the real time data and active involvement in the stated industry.
Aftermath of Rana Plaza Incident in RMG Sector of Bangladesh

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Bangladesh is the second largest garments market in the world after China and has achieved a lot of success in the past for its RMG sector but a huge holdup was created by one of the most shocking incidents in the history of Bangladesh - Rana Plaza incident. The investigative team found that absence of legitimate work assurance laws allowed the garments owners to pressurize workers to work under hazardous circumstances. Like many companies Vision Garments Ltd was also affected by this incident; the western buyers were hesitant to place orders. Vision Garments then build a strong flawless infrastructure and safety facilities for workers which helped to improve its reputation. Bangladesh RMG sector has reached new heights due to the resources, skills and efficiency but due to the poor infrastructure and safety issues incidents like Rana plaza might occur again if correct measures are still not used.

A Study on Financial Performance of Pharmaceutical Sector in Bangladesh

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The pharmaceutical industry is one of the most developed industrial sectors of Bangladesh. According to Kabir (2016) \cite{1}, there were approximately 257 companies active in the market as of 2015, of which 28 companies were enlisted in Dhaka Stock Exchange. This study focuses on DSE enlisted pharmaceutical companies in and has been conducted with a view to assisting the existing and new investors in making their investment decisions in pharmaceuticals and chemicals sector. This study will also help the companies to evaluate and take necessary measures to improve their financial performance. This study has been based on 10 pharmaceutical companies with positive returns from the period 2010-2014. For the financial evaluation, we have used several profitability ratios for constructing multiple linear regression. Moreover, this study also includes calculation of Jensen’s Alpha which will facilitate investors in their investment decisions.
FDI and Impact on Economic Growth of Bangladesh
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This paper attempts to analyze the impact of Foreign Direct Investment (FDI) on the Economic Growth of Bangladesh. Bangladesh is a Least Developed Country (LDC) which does not have required domestic savings to invest in the development of the country. At present, FDI is reducing the gap between domestic saving and investments in Bangladesh. FDI contributes to economic growth by developing human skill, management practices, transferring technology. Yet Bangladesh could not attract foreign investors for mentionable FDI inflows because of underdevelop infrastructure, the absence of good governance and energy crisis. Bangladesh has competitive advantages in respect of chief labor, less investment cost and special investment package. This study used annual sample data for the period from 1990 to 2016. All data are collected from secondary sources like World Bank database, Fred, Bangladesh bank and pan world table 9.0. The analysis found that FDI Inflow is positively correlated with the economic growth of Bangladesh.

An Empirical Study on the Fruit Value Chain in Bangladesh
Md. Mahbub Alam

The objectives of the study are to review the existing fruit supply chain, evaluate the prevailing practices and their mode of operations, and finding constraints and opportunities. The study also analyzes value chain of the most popular fruit - mango in Bangladesh, identifies the financial Benefit Cost Ratio (BCR) for mango farmers, and analyzes the distribution of the added value among the value chain actors, including farmers, traders and retailers.

Both primary and secondary data are used in this research. A purposive sampling framework is used for collecting data from all the main clusters of mango covering all over the country. A total of two hundred and forty five (245) structured interviews are conducted by using a structured questionnaire. After validating data through Focus Group Discussion (FGD) and Key Informant Interview (KII), statistical methods are used for the analysis of data.

The result of the value chain analysis shows, the financial Benefit Cost Ratio (BCR) for mango farmer is 1.69: 1. On the other hand, farmers are adding only 22.35 percent of the total added value, while traders and retailers are adding 23.29 percent and 54.36 percent of the total added value. These inferences need to be applied in development planning, so that farmers are better off in the changing market conditions.
Economic Benefits of Universal Health Coverage for the Climate Induced Disease in Southwest Coastal Region of Bangladesh: Application of Choice Experiment Method

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Devastation of climate change and its negative impacts on public health are also a common phenomenon of any coastal region and the southwest coastal region of Bangladesh is not free from such circumstances. An effective health measure is a prerequisite for minimizing the losses of lives and also mitigates the health sufferings from the devastating effects of climate change induced natural disaster. Universal Health Coverage (UHC) plays a vital role to tackle health problems with the full spectrum of services of good quality according to need and at an affordable cost to coastal people. In order to formulate cost effective, affordable and relevant UHC policy of coastal Bangladesh, this study identified some relevant attributes, e.g., coinsurance for UHC, provision of Telemedicine, Medicare, social insurance, Medicaid, payment system for its choice experiment. The choice experiment depends upon the preference of the coastal people. Multinomial and random parameter logit models are applied for estimation of the attributes. All the attributes included in the econometric model are significant that affecting the probability of choosing an alternative scenario. The welfare changes from the quality or quantity of coastal health coverage service could be given by the measure of compensating surplus (CS). It is expected that the findings of this study able to meet the goal 3 (well-being and health) of SDGs.

Lifestyle of Auto Rickshaw Drivers in Cox’s Bazar, Bangladesh

Tasidida Shamsi¹, Zaheed Husein Mohammad Al-Din²

The study has been conducted to see the lifestyle condition of Auto Rickshaw drivers who are working in the coastal city of Cox’s Bazar in Bangladesh. Objectives were to assess their perception of their own health and safety, to see whether any demographic variable affected their wish to choose this profession and to find the facilities they want to improve their lives. These auto rickshaw drivers were specifically chosen because there is peak season and off season in tourist locations. If there is no constant trend of livelihood, there is a problem of lifestyle. Focus group discussions were conducted among 50 auto rickshaw drivers in groups. There were seven questions asking about where they come from, how they survive, how much money they earn during peak and off-peak, food habits, health and safety, living conditions and crime. Interestingly majority of the respondents are satisfied with their situation. Dissatisfaction was blamed on low earning from the profession and poor living conditions during off-peak tourist periods. The study concluded that in recent years, auto rickshaw workers are unhappier during the off-peak season in Cox’s Bazar when they cannot earn enough for a healthy lifestyle.
Prospect of Equity Financing Products for Shariah Based Banking in Bangladesh

Humaira Parveen

The basic principle in Islamic law is that exploitative contracts that involve risk or speculation are impermissible. Under Shariah based banking, all partners involved in financial transactions share risk and profit/loss of a venture and none gets predetermined return. This direct correlation between investment and profit is the key difference between Shariah based and conventional banking. If Shariah based banks can do the required study on creditworthiness, specially based on the 5Cs (Character, Capacity, Capital, Collateral and Condition), before offering equity-based financing, their profitability will be even higher. Because, business financing involves risk and high risk is compensated with high return. The nature of Shariah based banking operations are directly affected by the success or failure of client enterprises as a result of the profit-loss-sharing process.

Shariah based banks are significant sector in Banking Industry of Bangladesh. This research explores perception of equity-based financing products of Shariah based banks’ management. In practice, to offer such financing, banks need to know more information about customer business than regular. The control on business operation also gets restricted depending on the contract established. But the result is, bank will share the risk with customers by providing such financing.

In Bangladesh, Shariah based banks are not offering equity-based financing products. This study explores managements’ perception about target customers' behavior behind this practices, which is helpful for customers to work on the factors to avail such equity financing products.

With the research approach of Ontology and Rationalism as Philosophy of Science, expert opinion will be analysed to develop the management perception about the above problem stated.
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