ISSN (Print): 2411-3077

University of South Asia Journal (USAJ)

Volume 5, Issue 1, December 2019

UNIVERSITY OF
SOUTH ASIA
The Career University
Since 2003

An Academic Journal
University of South Asia
Banani, Dhaka-1213, Bangladesh

UNIVERSITY OF SOUTH ASIA JOURNAL (USAJ)

Volume 5, Issue 1, December 2019
ISSN (Print): 2411-3077
www.southasiauni.edu.bd

Published By
Registrar, University of South Asia

Price
BDT 200
US$ 10

UNIVERSITY OF
SOUTH ASIA
The Career University
Since 2003

University of South Asia
House # 76 & 78, Road # 14, Block # B
Banani, Dhaka-1213, Bangladesh
Phone: +88029857073-4
www.southasiauni.edu.bd
E-mail: info@ southasiauni.edu.bd

Printed By
Skylark Printers
278/A, Elephant Road
Katabon Dhal, Dhaka 1205, Bangladesh
Phone : +88 02 966909, 01707 282395

UNIVERSITY OF SOUTH ASIA JOURNAL

A Message from the Chairman, Board of Trustees

University of South Asia is in the sixteenth year of its forward march. Since its inception, this University has been contributing to the society and, for that matter, to the nation by providing quality education to its students at affordable costs. And since quality education depends almost entirely on constant cultivation of knowledge and honing of expertise, University of South Asia has been patronizing publications in various categories including journals on a regular basis.

At University of South Asia, we try to ensure proper grooming of our students and their transformation into complete human beings in the face of myriad adversities. That is why, we insist on a perfect balance of knowledge, wisdom and skill through cumulative study and research. In order to facilitate inculcation and dissemination of these virtues, University of South Asia is always encouraging and patronizing publications, seminars, symposia, workshops etc.

It gives me immense satisfaction to know that Volume 05, Issue 01 of USAJ is about to be published. I hope this will be a veritable store house of knowledge and an embodiment of one of the dreams of its Founder Chairman Professor M.A Matin regarding acquisition and dissemination of knowledge.

I would like to extend my felicitations to those who have been doing the painstaking works for the successful publication of the current issue of USAJ or had a role to play at any stage of the whole process.

May Allah bless all.

Professor Dr. M. A. Muhit
Chairman, University of South Asia

University of South Asia Journal
Contents

Monitoring Physiochemical Parameters of Turag River Water near Tongi Industrial Area

Md. Shamim Reza[1]
Sk. Moniruzzaman[2]
Khondaker Mohammod Shariful Huda[3]

Abstract: *The Turag River is one of the polluted river in Dhaka City because of it receives partly treated sewage effluent and untreated industrial effluent from different industries. This paper explains about monitoring physiochemical parameters of Turag River near tongi industrial area. This research is designed to locate the water sample collection sites, then laboratory analysis of some physiochemical parameters to identify the water quality of Turag River. Tongi Industrial area along with the Turag River is selected as research area. To know the physiochemical parameters of water quality condition, laboratory analyses are essential, so 04 water samples were collected randomly from research area. Experimented data of collected water samples from different sites and analyzed to ascertain the water quality of specific physicochemical parameters. The parameters such as: pH, Electrical Conductivity (EC), Total Dissolved Solids (TDS), Total Suspended Solids (TSS), Dissolved Oxygen (DO), Biological Oxygen Demand (BOD_5), and Chemical Oxygen Demand (COD) were measured and analyzed in the laboratory.*

Keywords: *Water Quality, Turag River, Physiochemical Parameters etc.*

1. INTRODUCTION

Bangladesh is called as 'land of rivers'. Our Country is surrounded by several big and small rivers; about 230 rivers currently flow in Bangladesh during summer and winter (BWDB, 2019). The quantity of river differs widely because of lack of research on the counts and also the incontrovertible fact that these rivers changes flow in time and seasons. Old sources and history state about 700 to 800 rivers, but due to lack of awareness and pollution, most of them dried out or extinguished (Banglapedia, 2006). Now-a-days, the sources of useable water are unfortunately become polluted due to anthropogenic activities such as over populations, growth of urbanization, increasing industrialization etc. For this reasons, the water quality of the rivers is deteriorating day to day and increasing the undesirable effect of surrounding land and aquatic ecosystem as well as consequent impact on the livelihood and community. There are various industries

[1] Graduate Researcher, Environmental Science, University of South Asia, Banani, Dhaka.
[2] Assistant Professor, Environmental Science, University of South Asia, Banani, Dhaka
[3] Professor, Geography and Environment, Jahangirnagar University, Savar, Dhaka-1342.

like: consumer goods industries, garments and textile industries, pharmaceuticals industries, dyeing and washing industries, aluminum industries, battery manufacturing, food processing industries, plastic product manufacturing industries, iron industries, pulp and paper factories, chemical factories, and steel workshop etc are build up around river, for this rivers is becoming polluted at alarming rate day to day. Dhaka is the capital of Bangladesh, is surrounded by a number of rivers, wetlands and canals. Buriganga, Turag, Dhaleshwari, Balu and Shitalakhya are the significant rivers in Dhaka city. Buriganga, Shitalakshya, Turag and Balu these four rivers have been declared as Ecologically Critical Areas (ECAs) by the Department of Environment (DoE) in September, 2009. In addition to the Turag River, various industries are continuously discharging their effluents and waste water into the river and gradually contaminating the river water significantly. For this result, the values of different physiochemical parameters are continuously changing at an alarming rate in this river water. This research was conducted to know the existing water quality status of different physiochemical parameters of the Turag River water. Sohel et al. (2003) studied on "surface water quality in and around Dhaka city". In their research work, they said that, water quality of both ground and surface water in and around Dhaka city is gradually being polluted. The surface water of peripheral rivers of Dhaka city is extremely polluted for discharging municipal and industrial waste water into the river. They analyzed about the rivers water quality scenario of Dhaka City during dry season of 2005 (Rahman et al., 2008). Pramanik et al. (2013) studied on "Evaluation of surface water quality of the Buriganga River". They conducted their research on monitoring the existing water quality condition of Buriganga River at 04 locations. They analyzed the 06 physicochemical parameters such as: Dissolved Oxygen (DO), pH, color, total coliforms, turbidity and ammonia, tested values always were not same with standard level over the year 2011 (Pramanik et al., 2013). The River Buriganga, which runs past Dhaka City, is at present one of the most polluted rivers in Bangladesh. The amount of untreated wastes, both domestic and industrial, being released into the Buriganga is tremendous and is increasing day by day (Kamal et al., 1999). In and around the Dhaka city, approximately 300 outfalls of domestic and industrial effluents developed along with the river bank. The rivers are further polluted by dumping of domestic waste, clinical, pathological wastes and excretory product (Rahman and Hadiuzzaman, 2005). According to Bangladesh Center for Advanced Studies in 2009, only about 40% industries have ETPs. In 10% industries, ETPs are under construction and about 50% industries have no ETP establishment. That is, more than 50% of waste generated by the industries eventually goes to the rivers untreated (BCAS, 2009). During the dry season, the level of the water volume decreases and the condition of the water becomes worse than the wet season (Tahmina et al., 2018). Different industries besides the Turag River are continuously discharging their effluents and waste water into the Turag River and seriously polluting the river water. The values of different physiochemical parameters are continuously changing at an alarming rate in this river water (Mobin et al., 2014). The release of the waste water without proper treatment from the surrounding industries and municipalities, agricultural run-off and dumping of the wastage on the bank of the Turag River leads to the increased pollution of the river water (Meghla et al., 2013).

2. METHODS AND MATERIALS

Aim and Objectives of the Research: The aim of my research is monitoring the physiochemical parameters of Turag River water near Tongi industrial area. Objectives of the research are as follows:

- To collect water samples from study area;
- To experiment the collected water samples and analyze of selected physiochemical parameters (such as: pH, EC, TDS, TSS, DO, BOD_5, and COD) of water quality.

Description of Project Area: The Turag River is the upper tributary of the Buriganga River, located at Tongi in Gazipur, Bangladesh. Its originates from the Bangshi River, then as a tributary of the Dhaleshwari River, flows through Gazipur and joins the Buriganga at Mirpur and the Tongi Khal links the Turag with the Balu River (Chowdhury, 2004). Geographical location of research area is latitude from 23°53'26.1"N to 23°54'22.6"N and longitude from 90°23'05.3"E to 90°24'29.6"E.

Sources: Google Earth, 2020

Figure 1: Location of Tongi Industrial Area adjacent to Turag River.

Research Design: My research is designed to know about water quality and also monitoring the physiochemical parameters of water quality of Turag River near Tongi Industrial area. To know the physiochemical parameters of water quality condition, laboratory analyses are essential. So, Experimental Research methods are required.

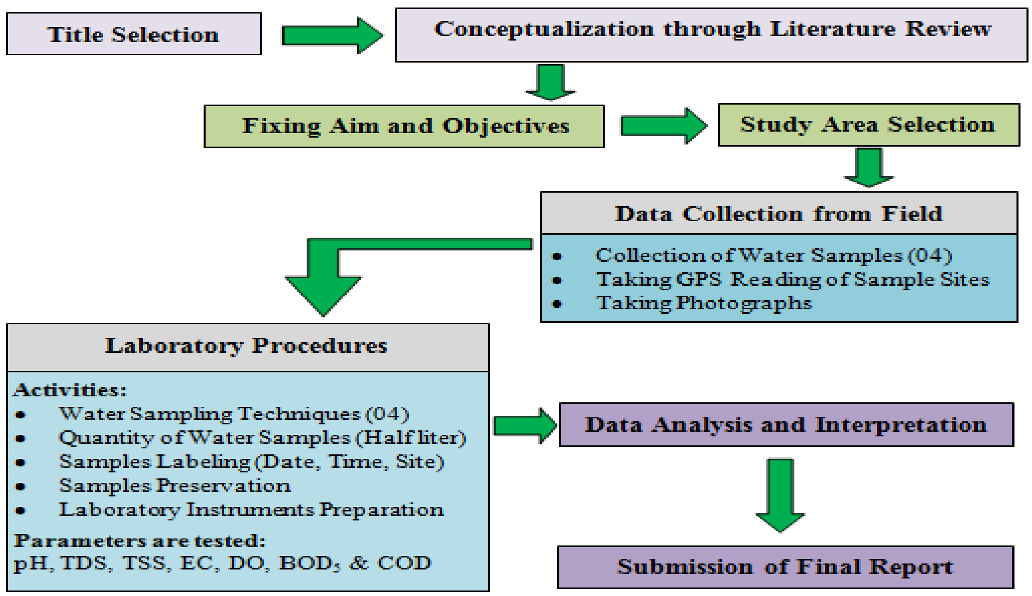


Figure 2: Flow Chart Diagram of Research Procedure.

Location of Water Sample Collection Sites

Table 1: Information for 04 water sample collection sites along Turag River.

Sl. No.	Relative Location	Latitude	Longitude
S 01	Near Tongi Bridge	23°53'30.9"N	90°23'23.6"E
S 02	Near Sajid Washing & Dyeing Ltd.	23°53'38.6"N	90°23'21.1"E
S 03	Zarina Composite Textile Industries Ltd.	23°53'46.3"N	90°23'13.2"E
S 04	Near Kathaldia Ghat	23°53'51.2"N	90°23'10.1"E

Source: GPS Survey by Author, 2019

Water Sampling Techniques: The basic consideration in determining the water quality of water sample or a series of samples from water body, which does not change with time. Total 04 samples were collected in randomly from 04 sites of Turag River near study area in a sterilized plastic bottle.

Quantity of Water Samples: Half (½) liter of water was taken during both dry and wet season for each sample from of the study area. One sample was collected from one site and the total 04 samples were taken from 04 different sites of study area.

Sampling Bottles: Bottle in which samples were collected was clean, sterilized, narrow mouthed neutral plastic stopper. The bottles were washed by detergent and dry by air. The sampling bottles were not opened except at the time of sample collection and laboratory test.

Labeling of the Samples: The containers were labeled with the following information: Sample number, Date and Time, Source of sample, Location point of sample collection, Name and signature of the sample collector.

Preservation of Samples: Samples were kept in a dark and low temperature area before the laboratory test.

Table 2: Instruments used for Selected Physiochemical Water Parameters.

No.	Parameters	Instruments/ Methods
01.	pH	Digital PH meter (Model No- HI2210, HANNA).
02.	EC	Multimeter (Model HQ40d, HACH Instrument).
03.	TDS	MultiMeter (Model HQ40d, HACH Instrument).
04.	TSS	Portable Spectrophotometer (Model DR1900, HACH Instrument).
05.	DO	Multimeter (Model HQ40d, HACH Instrument).
06.	BOD_5	BODTrack II (HACH Instrument) and BOD incubator
07.	COD	COD Reactor (Model DRB200, HACH Instrument) and Portable Spectrophotometer (Model DR1900, HACH Instrument).

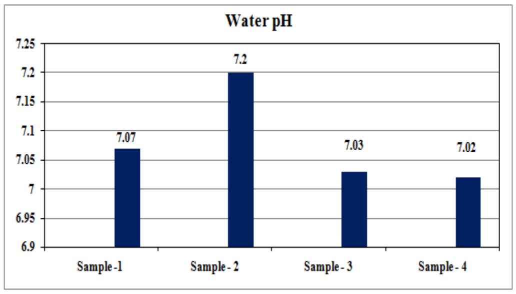
Source: Author, Lab. Test, 2019

3. RESULT AND DISCUSSION

Table 3: Lab Analysis data of 04 Water Samples on 07 physiochemical parameters.

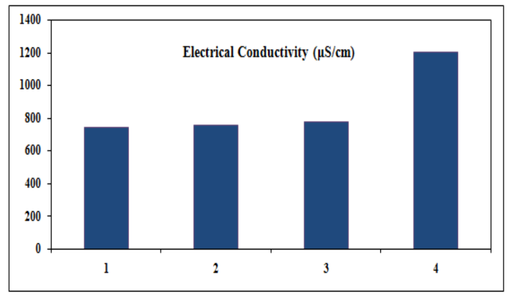
SL	Parameter	Unit	Result				
			S 01	S 02	S 03	S 04	Average
1	pH	-	7.07	7.2	7.03	7.02	7.08
2	EC	µS/cm	746	760	777	1205	872
3	TDS	mg/L	395	398	408	642	460.75
4	TSS	mg/L	106	58	153	148	116.25
5	DO	mg/L	2.1	2.2	2.2	2.4	2.2
6	BOD_5	mg/L	43	31	131	160	91.25
7	COD	mg/L	197	86	224	255	190.5

Source: Author, Lab. Test, 2019



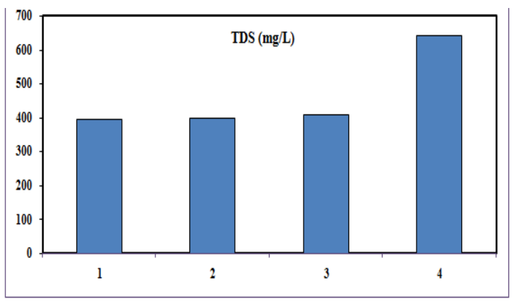
Source: Author, Lab. Test, 2019

Fig. 3: Values of pH of water samples.



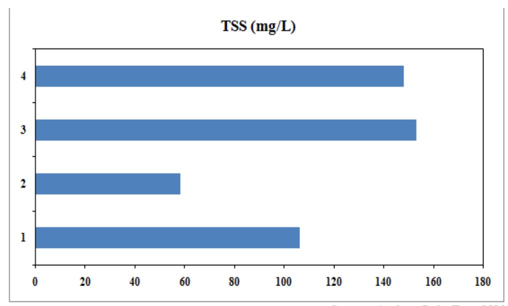
Source: Author, Lab. Test, 2019

Fig. 4: Value of EC of water samples.



Source: Author, Lab. Test, 2019

Fig. 5: Values of TDS of water samples.



Source: Author, Lab. Test, 2019

Fig. 6: Value of TSS of water samples.

The result obtained on some physicochemical parameters of the Turag river water samples are presented in Table 3, titled as: Lab Analysis data of 04 Water Samples on 07 physiochemical parameters. Water sample were collected from 04 sites along Turag River, which is mentioned in table 1, titled as Information for 04 water sample collection sites along Turag River. Water pH influences the other properties of water body, activity of organism, and potency of toxic substances present in the aquatic environment (Rouse 1979). From figure 3, it is shown that the pH value of Turag River water at 04 stations, where the highest pH value is 7.2 in sample 02 (Near Sajid Washing & Dyeing Ltd). The average pH value of all samples is 7.08. And figure 4, represent the EC value of Turag River water at 04 stations accordingly 746, 760, 777 and 1205 (µS/cm), where the highest EC value is recorded in sample 04 (Near Kathaldia Ghat). The average value of EC is 872 (µS/cm). Above figure 5, it is shown that the TDS value of Turag River water at 04 stations accordingly 395, 398, 408 and 642 (mg/L); where the highest value is recorded in sample 04 (Near Kathaldia Ghat). The average value of TDS is 460.75 (mg/L). Figure 6, express that, the TSS value of Turag River water at all stations accordingly 106, 58, 153 and 148 (mg/L); the highest TSS value is recorded in sample 03 (Zarina Composite Textile Industries Ltd). The average value of TSS is 116.25 (mg/L).

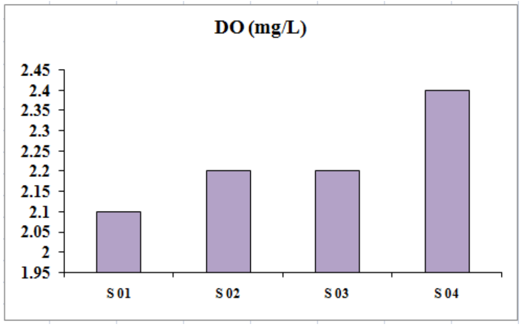


Fig. 7: Values of DO of water samples.

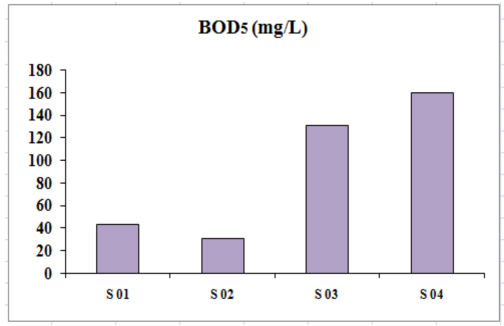


Fig. 8: Value of BOD_5 of water samples.

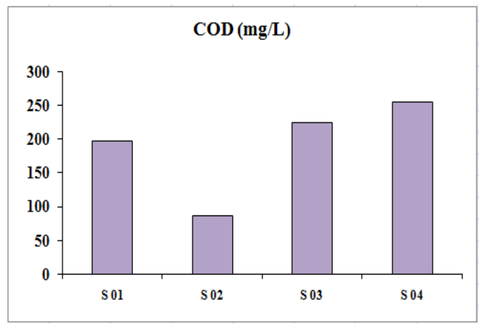


Fig. 9: Values of COD of water samples.

Figure 7, it is shown that, DO value of Turag River water at 04 stations accordingly 2.1, 2.2, 2.2 and 2.4 (mg/L); where the highest value is recorded in sample 04 (Near Kathaldia Ghat). The average value of DO is 2.2 (mg/L). Figure 8, express that, the BOD_5 value of Turag River water of 4 stations accordingly 43, 31, 131 and 160 (mg/L); the highest BOD_5 value is recorded in sample 04 (Near Kathaldia Ghat). The average value of BOD_5 is 91.25 (mg/L). The figure 9, it is shown that, the COD value of Turag River water at 04 stations accordingly 197, 86, 224 and 255 (mg/L); where the highest COD value is recorded in sample 04 (Near Kathaldia Ghat). The average value of COD is 190.5 (mg/L).

4. CONCLUSION

From the observed result of physicochemical parameters, it can be concluded that the Turag river water was excessively polluted due to discharge of industrial effluents, sewage wastages, agricultural and city run-off and anthropogenic activities. Intensity of pollution is slightly high. Water is essential for life. Now, is the right time to aware and take proper steps to protect the existing water bodies and its water quality so that we can protect our environment to lead the healthy, wealthy and happy life in the future life.

REFERENCE

1. Banglapedia, 2006. National Encyclopedia of Bangladesh, Asiatic society of and Bangladesh, Dhaka.
2. BCAS., (Bangladesh Centre for Advanced Studies). 2009. The state of Bangladeshi water, Series 5, Bangladesh Centre for Advanced Studies, Dhaka, Bangladesh.
3. BWDB, 2019. Ministry of Water Resources; Available at: https://bwdb.gov.bd/en/
4. Chowdhury, A. G. and Chowdhury, A. 2004. An assessment of water resources and flood management of Dhaka city. Water resources management and development in Dhaka city, Geothe-institute, Dhaka, Bangladesh, 40-45.
5. Department of Environment, 2009. The general over view of pollution status of river of Bangladesh. Government of the People's Republic of Bangladesh, Ministry of Environment and Forest, DoE, Dhaka, Bangladesh.
6. Kamal, M.M., Malmgren-Hansen, A. and Badruzzaman, A.B.M., 1999. Assessment of pollution of the River Buriganga, Bangladesh, using a water quality model. Water science and technology, 40(2), pp. 129-136.
7. Meghla, N. T.; Islam, M. S.; Ali, M. A.; Suravi and Sultana, N. 2013. Assessment of Physicochemical Properties of Water from the Turag River in Dhaka City, Bangladesh. International Journal of Current Microbiology Applied Science, 2(5): 110-122.
8. Mobin, M.N., Islam, M.S., Mia, M.Y. and Bakali, B., 2014. Analysis of physicochemical properties of the Turag River water, Tongi, Gazipur in Bangladesh. Journal of Environmental Science and Natural Resources, 7(1), pp. 27-33.
9. Pramanik, B.K. and Sarker, D.C., 2013. Evaluation of surface water quality of the Buriganga River. Journal of Water Reuse and Desalination,3(2), pp. 160-168.
10. Rahman, M. D. and Hadiuzzaman, M. (2005). Pollution status and trends in water quality of the Shitalakhya and Balu rivers. B.Sc. Engineering Thesis, Department of Civil Engineering, Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh.
11. Rahman, S. and Hossain, F., 2008. Spatial assessment of water quality in peripheral rivers of Dhaka City for optimal relocation of water intake point. Water Resources Management, 22(3), pp. 377-391.
12. Rouse S. D., 1979. "Water Quality Management in Pond Fish Culture"; In: Research and Development, Series No. 22, Project: AID/DSAN-G 0039, Auburn University, Alabarna, USA.
13. Sohel, K.M.A., Chowdhury, M.A.I. and Ahmed, M.F., 2003. Surface water quality in and around Dhaka City. Journal of Water Supply: Research and Technology—AQUA, 52(2), pp. 141-153.
14. Tahmina, B., Sujan, D., Karabi, R., Hena, M.K., Amin, K. R. and Sharmin, S., 2018. Assessment of Surface Water Quality of the Turag River in Bangladesh. Research Journal of Chemistry and Environment, 22(2), pp. 49-56.

Assessment of Farmers' Perception and Satisfaction on Current Paddy Procurement System in Selected Areas of Bangladesh: A Quantitative Analysis

Md. Ashraful Islam[1]
Syed Shahadat Hossain[2]

Abstract: *The main aim of this research is to assess the perception and satisfactions of the farmers' on current paddy procurement system in Bangladesh. Quantitative research methodology was followed in this study. To assess the perception and satisfaction of farmers a survey was conducted on 210 farmers of three upazilas using a pre-tested and close-ended questionnaire. Data analysis was done using software SPSS Version 20. Analyzing the collected data based on the research question it was found that about 67.6% respondents are not happy on current paddy procurement system and about 69.10% respondents think there are middle man in the current system of paddy procurement, about 94.30 % of the respondent opined regarding the need of an improvement of the current system, 99.0% thinks about new paddy procurement system may be helpful. Moreover, 80.50 % respondents have access to mobile phone and can use internet which conveys their readiness for an ICT based system. These findings led me to conclude that the there are huge scope of the improvising the system of current paddy procurement system which will make the activities of the paddy procurement more transparent to all including the farmers. The may be happy on the improved on.*

Keywords: *Paddy, Paddy Production, Paddy Procurement System, Farmers Satisfaction, Farmers Perception.*

1. INTRODUCTION

"Agriculture is the backbone of Bangladesh economy. The contribution of agriculture in GDP has been estimated to be 15.35 percent by 2015-2016. The economy of Bangladesh is heavily dependent on agriculture which supports the vast majority of her population. This sector employs 47% of the total labor forces of this country" (BBS, 2016). Major macroeconomic objectives, such as poverty alleviation, generation of employment, food

[1] Associate Professor and Dean, School of Engineering; University of South Asia.
[2] Professor, Institute of Statistical Research and Training, University of Dhaka, Bangladesh.

security, and human resources development are the impact of the irresistible performance of this sector. Most of the farmers and their family wait eagerly for the paddy harvesting all the year round because all the expenses of the family depend on the paddy sale. In this regards Chowdhury opines in details that "Paddy is the main crop in Bangladesh and the financial life-line for the farmers. Three types of paddy namely Aus (March to August), Aman (June to January) and Boro (November to May) are produced in this country. But today's paddy production story is not always encouraging. Sometimes, the experience of farmers engaged in paddy production is very depressing due to the miserably low prices. Today, paddy production largely depends on the use of fertilizers, irrigation, pesticides, among others. Most of the farmers of Bangladesh belong to medium/low-income groups. Very often they have to take out loans for cultivating paddy. Moreover, they are forced to sell their paddy at a lower price immediately after harvesting mainly because of two reasons, namely the unavailability of necessary storage facilities and the pressing necessity of money to repay the loans taken for purchasing seeds, fertilizers, pesticides, labor and to meet the day-to-day expenses. To capitalize on this weakness, several types of middlemen or intermediaries have emerged in the market, namely Faria, Bepari, Paiker, Aratdar-cum-wholesaler and miller who often try to exploit the farmer. So, in the harvesting season, farmers are forced to sell the paddy at a comparatively lower price. The price of paddy is, in most of the cases, unstable, and ironically enough, seasonal fluctuations are very common in the price of paddy since our independence" (Chowdhury, N., 1987). Due to paddy production in Bangladesh the farmers are to suffer a lot. Alam and others state that "The sufferings of farmers who produce paddy are indeed numerous. It is significant that the government has been launching many programs one after another to boost up the agricultural sectors especially to support the farmers. To solve this particular problem of farmers in respect of the low price of paddy in harvesting season, our government has taken a very effective initiative to procure the paddy from the farmer with reasonable price, especially when they are in dire necessity to sell it, that is, during the time of harvesting. Providing financial support to farmers and ensuring the stocks of rice for the Public Food-grain Distribution System (PFDS) are the duel purposes served by this procurement" (Alam et al., 2014). In this regard Raha and others opine that, "Considering all the factors relevant to the production of paddy, every year the government declares procurement price at the harvesting time of the crop so that the producer gets proper price commonly known as minimum support price. The general expectation of the farmers is that the procurement price will be higher than the production cost. If the procurement price is higher than the production cost, producers get profit and feel encouraged to cultivate paddy in the following year" (Raha et al., 2013). Since every year the government declares procurement price at the harvesting time considering all the factors relevant to the production of paddy, it is supposed that the producers will get the proper price which may be minimum support price to their paddy. But in practice, it is the middlemen, not the farmers, who are getting real price and taking the benefits. Its causes include proper paddy procurement system, illiteracy, poor communication knowledge, poor communication system, insufficient communication infrastructure and other facilities for the farmers. Here about the involvement of middlemen with the paddy procurement system Dewan describe "The middlemen purchase paddy from the farm-yards, paddy fields and marketplaces. Then they sell it to other middlemen in the same market or other markets. The middlemen, namely Farias, Beparis, Paikers, and Aratdar-cum-wholesaler, sell the same to millers. Consequently, the government has no other way than purchasing paddy from the millers. So, the benefits of support price go to the middle men, rather than the actual farmers. Despite all good initiatives taken by the government, farmers are deprived of getting benefited due to the lacking of the current paddy procurement system" (Dewan, 2011). The impacts are many. It is not only farmers who are deprived of the just price, but it also leads to the unstable food market, food price hiking and ultimately food insecurity. This article attempts to analyze all the activities of the current paddy procurement system in Bangladesh, to know the perception and satisfactions of farmers on current paddy procurement system to find out the scope of improvement to increase support for the farmers. The strategy is to find out the scope of the improvement of paddy procurement system to make the activities transparent to farmers, planners, policymakers, administrators, researchers and other stakeholders who are concerned with paddy procurement system in Bangladesh and this will help the farmers to get the actual price.

2. LITERATURE REVIEW

Rice is the most significant food crop in the world, feeding people more than any other crops. Nearly half of the world's population more than 3 billion people relied on rice every day1. It is also the staple food across Asia where around half of the world's poorest people live and is becoming increasingly important in Africa and Latin America. Rice has also fed people over a longer time than any other crops have. It is spectacularly diverse, both in the way rice is grown and used by human beings. After harvesting, the rice grain undergoes several processes depending on how it will be used, which include drying, storing, milling, processing, and packaging – all before they are delivered to markets for sale. "Rice is grown more abundantly than any other crops in the world. There are over 144 million rice farms worldwide in a harvested area of about 158 million hectares. It is cultivated in a wide range of climates and terrains, by way of hand or using massive machinery, by small families or large agricultural corporations. The contrasts in the geographic, economic, and social conditions under which rice is produced are vast." Paddy Cultivation and Production for ensuring Food Security and Income Generation: Paddy is the main crop in Bangladesh.

Generally three types of paddy are produced such as: Aus (March to August), Aman (June to January) and Boro (November to May) in Bangladesh. Rice which is the main food-grain is produced from paddy. Around 50% of the people of the world live on rice. It is the staple food of the people of Bangladesh. Bangladeshi people live on rice. Rice has many other uses, too. Khai, Chira, Muri, different Cakes and many kinds of food and food items are produced from rice. Mothers make many kinds of Pitha using rice. People also can enjoy Polao, Biryani, among many others, which are made with rice. There are different types of rice, which are excellent in taste, smell and nutrition. Paddy Cultivation/why Paddy Production: From the ancient time, most people have been dependent on agriculture for necessary foods. In this region, the history of agriculture is long and for many different causes, paddy production is very closely related to the people. Most of the rural people of Bangladesh are still dependent largely on agriculture for income and employment. Besides, the main food of the people of this country is rice and the only way to get rice is nothing but paddy. The plain fertile land of this delta is very easy and sometimes less costly for paddy cultivation. The main income source of most agricultural families is paddy production. Paddy is the main source of food not only for humans but also for animals like cows, and some fertilizers are also produced from the paddy straw. So there are lots of causes which prove that paddy cultivation is very significant. It is rightly asserted in The Monthly Technology Today that "Paddy (Rice) is the dominant staple food in Bangladesh, accounting for about 35 percent of household expenditure. About 80% of the agricultural production originates in the crop sector alone in Bangladesh of which rice contributes about 82 percent" (The Monthly Technology Today, May 2011). Contribution of Paddy in GDP, Ensure Food Security and Income Generation From the report of Bangladesh Bureau of Statistics, "we found the contribution of agriculture in GDP has been estimated to be 15.35 percent by 2015-16. The economy of Bangladesh is virtually dependent on agriculture which supports the majority of her population, and also the sector employs 47% of the total labor force of this country" (BBS, 2016). Purpose of Paddy Procurement of GoB: Food is one of the most fundament rights of the citizen of a country. The government should ensure the availability of food in the market all the year-round for its citizens. Different market forces very often wait consciously for exploiting the food market and making artificial food crisis. The consequences are very common: price hiking, extra profit earning and sometimes the insufficient food supply. So most of the time like other countries, the government of Bangladesh faces the terrible need to buy and store paddy to ensure the available food supply in the market for its population for the whole the year. Sometimes the government is bound to procure paddy or rice from the intermediary force of the market. Not only the farmers but also the government becomes hostage to the malevolent force. Even the blacklisted millers are so influential in their areas that the government sometimes has to depend on them. "The millers purchase each kilogram of paddy at a reduced rate, pointing out the moisture percentage of paddy. According to rice millers, when they purchase paddy from the farmers, its moisture percentage remains too high. This increases the weight of the paddy. As a result, they have to dry the paddy several times before husking. For purchasing paddy at a lower rate and for hoarding huge amounts of paddy, the government last year blacklisted 16,000 rice mills. Nevertheless, to meet the procurement demand for the persistent rice shortage, the government has decided to purchase rice and paddy even from the blacklisted millers, as Food Minister Qamrul Islam started on April 15" (The Daily Star, 2018). According to the statement of Alam and others, "the purposes of local rice procurement are to serve the twofold purposes: to build rice stocks for the public food grain distribution system (PFDS), and to provide income support to farmers, which is higher than the cost of production to ensure the farmers do not produce incurring losses, and to fulfill the objectives of income support. But it is shown by different researchers that due to the lack in paddy procurement system; the middlemen are getting benefits, but not the actual farmers" (Alam, et al., 2014). Sabur and others opine that "the government of Bangladesh is consistently pursuing policies to attain food self-sufficiency and also to improve the farmers' economic condition" (Sabur S. A. et al., 2003). Alam also opine that, "The present food gain production in Bangladesh is sufficient to meet its domestic requirement. The National Food Policy Plan of Action (2008-15) is also taking care of the effectiveness of PFDS. It is also providing effective support to producer prices" (Alam et al., 2014). Bangladeshi paddy production and its sales process, the involvement of the middlemen the policy of the government and the ways the farmers may get the actual benefits of paddy productions, all are described in detail. According to Prakash, "The paddy sales pass through too many middlemen such as commission agents, wholesalers, millers cum wholesalers, retailers during distribution. So the price goes up abnormally due to a large number of middlemen, who take the lion's share of profit." (Prakash C., 2012). In the current paddy procurement system, the organized middlemen force the farmers to sell the paddy within the process. Dewan opines "To achieve the target, the government should eliminate the inherent defects prevalent in agricultural marketing presence of superfluous middlemen, a multiplicity of market charges, a multiplicity of weights and measures, and malpractices of markets." (Dewan, M. F.A., 2011). Robel found in his research that "the millers are the actual regulators of the paddy market in Bangladesh. He shows how the channels are maintained. The Faria, Bepari, Paiker, and Aratdar-cum-wholesaler are the middlemen or intermediaries in the marketing networks. The Beparis purchase paddy from farmers and Farias, and sell to the Paikers and millers. The Paikers buy paddy from farmers, Frias and Beparis and then sell to the millers" (Robel. M., 2013). Raha and others found that "Millers are happy with the current paddy procurement system but in the farmers' perspective, the paddy market is not serving the purpose of them" (Raha et al., 2013). According to Sabur and others "The procurement price is now consciously related to the cost of producing HYV food grain and is announced before the sowing season. In 1999, Shahabuddin and Islam have conducted a study on rice procurement program, which showed that the participation of farmers, especially the small and medium farmers, was negligible and procurement appeared to be largely controlled by political elites" (Sabur S. A. et al., 2003). As the farmers face sufferings in selling their paddy, to reduce their suffering Government has taken effective initiatives to procure the paddy from the farmers with supporting price in due time. But it is shown by different researchers that due to the lack of paddy procurement system, the middlemen are getting benefits, but not the actual farmers. According to the statement of Alam and others "the aim of local rice procurement is to serve the twofold purposes: to build rice stocks for the public food grain distribution system (PFDS), and to provide income support to farmers, which is higher than the cost of production to ensure that the farmers do not produce incurring losses and fulfill the objectives of income support. It is also providing effective support to producer prices" (Alam et al., 2014).

Government Paddy Procurement Procedure: The government procures paddy from the farmers and rice from the millers through its procurement centres located in different areas of Bangladesh. There is an Officer in Charge (OC) and other employees in each procurement centre. Upazila Controllers of Food (UCF) supervises the procurement system of each Upazila and District Controller of Food (DCF) supervises the procurement system of each district. Government fixes the procurement target for each procurement centre based on procurement centres' capacity and national procurement target. A farmer can sell a minimum of 70 kg and a maximum of 5 tones paddy to procurement centre.

Private Sale- Open Market/ Public Market: As paddy sale is a dire necessity of the farmers in immediately after harvesting time and the government procurement system works commonly later than harvesting time, the farmers are usually interested in selling their paddy to private sale centres or open market, rather than the government procurement system. Besides, there are many other reasons for the farmers' going to the private sale centres. First of all, there is the system of prompt cash transaction in private market and even sometimes it is in advanced payment; saving the transportation cost is one of the main reasons. In a private sale system, farmers are getting the chances to sell their paddy from a yard, and even nowadays in some cases from the paddy field. In harvesting time, due to hurry and rough weather it may be difficult to ensure the saleable quality of paddy but in procurement system quality maintaining is necessary. In most of the cases, the farmers get the chance to sell their less quality paddy in private sale system. Moisture and foreign particles are not a matter in the paddy which is sold in private sale system. Sabur and others state that "due to some practical reasons, the farmers sell their paddy mainly to the middlemen in the post-harvest season. Middlemen involved in the trading of paddy are of different categories. They are commonly known as Kutial, Barkiwala, Faria, Bepari, and miller. But the Kutial and Barkiwala were not involved in the procurement channel. The suppliers to the procurement centre are either farmers or the millers" (Sabur S. A. et al., 2003). Problems in Paddy Procurement System in Bangladesh: This is very open secret that the current paddy procurement system is not working properly. "Most of the farmers and many of the people involved with the current paddy procurement system opined differently, but they conclude that the current system is not working properly. The scope for the improvement of the current paddy procurement system is still there. It is said that the present procurement program is not effective to provide the incentive to the actual farmers. There are a lot of reasons behind this. Through paddy procurement centres located in different areas of Bangladesh, the government procures paddy from the farmers and rice from the millers. In the post-harvest season, due to some practical reasons, the farmers sell their paddy mainly to the middlemen. There are different categories of middlemen who are involved in the trading of paddy. They are commonly called as Kutial, Barkiwala, Faria, Bepari, and miller. Only Faria, Bepari and Miller were involved in the procurement channel and Kutial, Barkiwala was not involved in the procurement channel. Either farmers or the millers are the suppliers to the procurement centre" (Sabur S. A. et al., 2003). "Boro farmers at the mercy of middlemen: Buyers offer prices lower than government-fixed rates for paddy, rice, and the procurement by government is yet to start. When the government had declared at the very beginning of the harvesting season to buy a higher volume of paddy directly from farmers, Boro growers across the country pinned high hopes on the domestic food procurement scheme. But two weeks have gone by since the paddy and rice procurement drive was officially launched on May 5 and thousands of the Boro growers remain at the mercy of private buyers and middlemen. The farmers are being offered much less by the buyers and the middlemen than what the government had promised under the public procurement scheme. The reason farmers are losing out is that, in reality, the government rice-buying drive has not started yet (The Daily Star, 2016). In the current paddy procurement system, the organized middlemen force the farmers to sell the paddy within the process. Dewan opines "To achieve the target, the government should eliminate the inherent defects prevalent in agricultural marketing presence of superfluous middlemen, a multiplicity of market charges, a multiplicity of weights and measures, and malpractices of markets. The government should also be careful about the effect of a sound marketing system to ensure the producers to get a fair price." (Dewan, M. F.A., 2011). "Afsar Ali is a farmer of Aditmari in Lalmonirhat. He has been selling his harvested Boro at Tk 12 a kg, which he considers lower than the production cost. Abdul Gafur, another farmer from the same district, told The Daily Star that they got elated at government's announcement of buying paddy at Tk 23 a kg but said that they are still in the dark about when they would be able to sell rice at government silos." (The Daily Star, May 21, 2016). Robel found in his research that “the millers are the actual regulators of the paddy market in Bangladesh. He shows how the channels are maintained. The Faria, Bepari, Paiker, and Aratdar-cum-wholesaler are the middlemen or intermediaries in the marketing networks. The network purchases paddy from the farm gates and market places to sell to the other middlemen in the same market or different markets. Farias purchase paddy from the farmers either at farm gates or in the markets and sell to the Beparis and Paikers in the market. The Beparis purchase paddy from farmers and Farias, and sell to the Paikers and millers. The Paikers buy paddy from farmers, Frias and beparis and then sell to the millers” (Robel. M., 2013).

“On conducting research Raha found that "millers are getting paddy as much as they need but the farmers are not getting the reasonable price of their paddy. So, millers are happy with the current paddy procurement system but in the farmers' perspective, the paddy market is not serving the purpose of them" (Raha et al., 2013). In this regard, Sabur with other found that “The primary objective of the procurement program has been to secure enough food grains to feed the Public Food Distribution System (PFDS) and it has been continuing for a long time. It is said that the present procurement program is not effective to provide the incentive to the farmers. Government procures paddy from the farmers and rice from the millers. In the post-harvest season, due to some practical reasons, the farmers sell their paddy mainly to the middlemen. There are different categories of middlemen who are involved in the trading of paddy.” (Sabur S. A. et al., 2003).

Problems: As the farmers have to sale the paddy in harvesting time so, they have to face lot of problems. Different intermediary groups or agencies try to exploit the farmers. We have got it in daily media also.

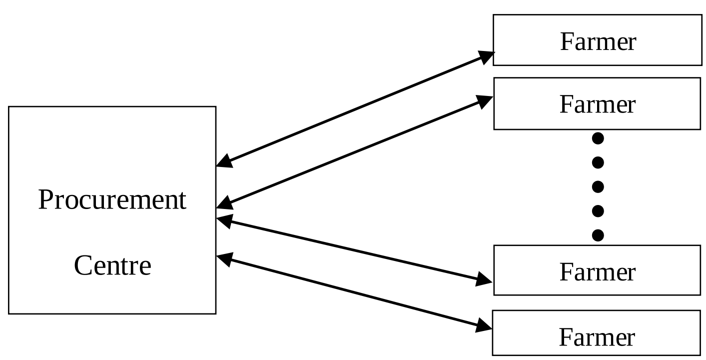


Figure 1: Standard Paddy Procurement System.

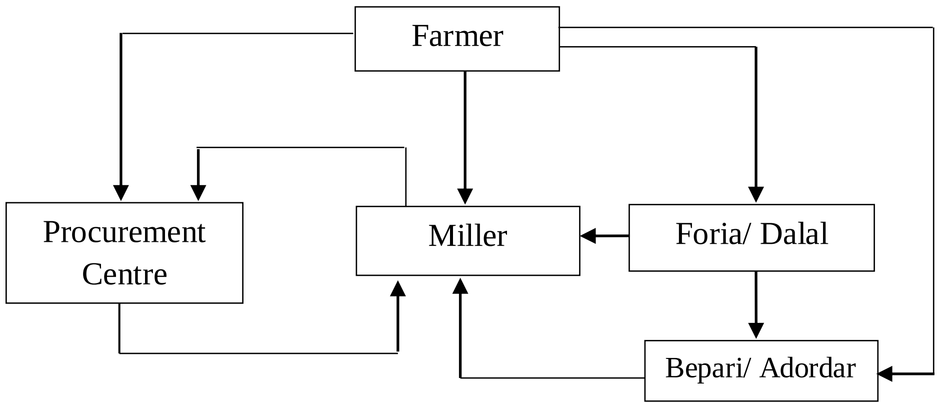


Figure 2: Current paddy Procurement System.

"The paddy sales pass through too many middlemen such as commission agents, wholesalers, millers cum wholesalers, retailers during distribution. So the price goes up abnormally due to a large number of middlemen, who take a lion's share of profit. To ensure the rice requirements in public distribution system and to avoid profiteering by the middlemen the government should take care of a sound food policy which keeps the price constantly under control and to maintain satisfactory stock of foods. Due to the lack of storage facilities and the government's failure to control the market, every year Bangladesh's farmers incur huge losses with their products. It is clear that every year this initiative loses its purpose as, instead of procuring the rice from the farmers, the government procures it from the millers. The millers purchase paddy from the farmers at a far lower price than the government fixed rate." (The Daily Star, Star weekend May 04, 2018).

Procurement System in other Countries in the World: Krishnan and Varghese illustrate that, "The Indian Government policy of procurement of food grains has the broad objectives of ensuring Minimum Support Price (MSP) to the farmers and also ensuring availability of food grains to the weaker sections at affordable prices. It also ensures effective market intervention, thereby keeping the prices under check and also adding to the overall food security of the country. The Food Corporation of India (FCI), the nodal central agency of the Government of India, along with other State Agencies undertakes procurement of wheat, paddy and coarse grains under price support scheme and rice under statutory levy scheme" (Krishnan, et al., 2014). Prakash opines that "The procurement under Price support is taken up mainly to ensure remunerative prices to the farmers for their produce which works as an incentive for achieving better production. Before the harvest during each Rabi / Kharif Crop season, the Government of India announces the MSP for procurement on the basis of the recommendation of the Commission of Agricultural Costs and Prices (CACP) which, along with other factors, takes into consideration the cost of various agricultural inputs and the reasonable margin for the farmers for their produce. To facilitate procurement of food grains, FCI and various State Agencies in consultation with the State Government established a large number of purchase centres at various villages and key points" (Prakash, C. 2012). "Paddy farmers across the country have been forced to incur massive losses due to poor prices, lack of market access and the government's failure to determine the minimum support price (MSP), while the prices of rice are skyrocketing due to low paddy harvest" (The Kathmandu Post, 2015). The problems of paddy procurements system in Bangladesh are similar to other countries in the world. For example, we find the same scenario in Nepal: "As the corporation failed to procure paddy, farmers have been forced to sell their produce at rates determined by traders". In previous years too, the corporation used to determine the prices after the farmers had sold their produce to the traders. "The corporation always delays to determine the price, benefitting the traders," said Tika Ram Thapa, a senior Agriculture Development Officer in Kanchanpur. "If the price determination was meant to benefit the farmers, the corporation would have set the MSP in August," he said, adding setting the price in December largely benefits the traders as farmers are forced to sell their produce immediately after harvest to buy seeds and fertilizers for winter crops and to repay debt. "That's why farmers do not wait for the price fixation. As they need money immediately after harvest, they are forced to sell their crop at cheaper rates," said Pradip Shah, a local farmer from Kanchanpur's Durgauli village. In Kapilvastu, farmers have been facing difficulties in supplying their harvest to the market due to transportation problems triggered by severe fuel shortages. "This year, paddy was output dropped by 45%. On top of this, I have not been able to sell my products in the market due to fuel shortages," said Hari Ram Tharu, a farmer from Niglihawa" (The Kathmandu Post, 2015).

Outcome: Digging out the relevant literature on current paddy procurement system, the willingness of the farmer to be adaptable with a just and fair system and, finally, the ways it can be achieved. I delve to find and show why the current system is failing to provide the necessities to the farmers of the country. The main areas are:

- farmers' dire need of the sale;
- immediate harvesting time need of the sale;
- need and urge of quick cash;
- the fact that the government starts the procurement too late for the farmers;
- lack of confidence and awareness in the current paddy procurement system;

- the perception, which often turns to be true, about the hassle they may have to face;
- high transportation cost involvement;
- the timing needed;
- the offer of credit from the middlemen and advanced payment;
- lack of trust and phobia of the missing of their money; and

Thus the aim of this chapter is to show a fair and just system for the farmers in order to bring farmers' confidence back in production of this staple food.

4. PROBLEM STATEMENT AND RATIONALE OF THE STUDY

In Bangladesh, the procurement of Aman, Boro and Aus paddy directly from the farmers is increasing day by day but the sufferings of farmers are also increasing. Lack of real-time information causes a huge loss to farmers. Also, due to the lack of proper paddy procurement system in Bangladesh, the farmers are suffering as well as the middlemen and some other influential personals who are involved with paddy procurement system are getting the benefits provided by the government. So day by day the farmers are discouraged to cultivate paddy, which is very alarming for the food security as well as for the unemployment problem of the country. This communication gap in the paddy procurement system is extremely upsetting. Still there are scopes for improving efficiency in all domains of procurement. There is a very little study or research on farmers perception and satisfactions on current paddy procurement system in Bangladesh to support the farmers. So, it is very much important to know the farmers perception and satisfactions, thereby contributing to the actual development of Bangladesh. The study will broaden the knowledge of the relevant fields and will indicate to the possible initiatives that could be taken for improving the system.

5. RESEARCH QUESTIONS

a. What is the current state of the paddy procurement system in Bangladesh?

b. What are the perceptions of farmers about current paddy procurement system?

c. Are the farmers satisfies with current paddy procurement system?

6. RESEARCH DESIGN

Choosing the appropriate research design could be helpful, especially to achieve the research objectives appropriately.

7. DEVELOPMENT OF QUESTIONNAIRE

As it was needed the quantitative research on farmers who are the real beneficiary of the paddy procurement system, so. for quantitative analysis, a questionnaire was made and tested.

8. JUSTIFICATION OF THE SAMPLE SIZE OF QUANTITATIVE RESEARCH

Sample Size: For this research, three upazila of three districts are chosen for our sample. From general theory, the minimum required sample size is determined using the usual sample size determination formula for estimating proportion, which is given by:

$$n = \frac{n_0}{1+\frac{n_0}{N}} \times \text{deff}\,, \qquad (1)$$

$$\text{with}\; n_0 = \frac{p(1-p)z_{\frac{\alpha}{2}}^2}{d^2} \qquad (2)$$

Where, p is an *apriori* proportion of the required characteristics in the population, $z_{\frac{\alpha}{2}}$, the value of the standard normal variate allowing $100\alpha\%$ the probability of bad samples, d; the allowable margin of error, N is the population size and *deff* is the design effect used for complex surveys using multi-stage cluster sampling. Since no complexity was adopted in the sampling, we considered the design effect to be unity. In this particular study under interest, the minimum number of respondents required in each upazila will be focused and since the number of respondents in each of the defined upazila is fairly large (larger than 10000), no adjustment for population size will be needed. Similarly, since the multi-stage approach is not adopted, no adjustment for design effect will be needed. A liberal choice of $\alpha = 0.1$ is considered which would give $z_{\frac{\alpha}{2}} = 1.64$. For the choice of the *apriori* proportion p, we consider the variable ‘perception of whether the farmers may get helps in receiving services’. However, no previous estimate of this proportion is available, that is why the safest option of $p = 0.5$ is considered. A nominal choice of $d = 0.1$, therefore, yields a sample size of $67 \approx 70$ for each upazila is considered. So, from three upazila of three districts’ total respondent is 70+70+70=210.

Allocation of Sample Size among Districts: Ensuring a sample size of 210 in total and the allocation of sample size among the upazila and districts are given in table 1:

Table 1: Allocation of Sample Size among three Districts

District	Upazila	No. of Farmers
1. Dinajpur	Phulbaria	70
2. Noagaon	Patnitola	70
3. Jashore	Monirampur	70
Total		210

9. DATA COLLECTION FOR RESEARCH

According the survey instruments the data are collected from respective areas. Study Area of this Research. For the quantitative data the selected study areas were three paddy producing and paddy surplus zones of the Upazil as: Phulbaria, Patnitola, and Monirampur in Dinajpur, Noagaon and Jashore districts respectively. Primary data were collected from the farmers who involved themselves directly in paddy production and then sell surplus paddy in private market or to paddy procurement system.

10. DATA COLLECTION FOR THIS RESEARCH

The field survey was conducted during mid-August 2017 to mid-October 2017. "The method followed for the research sampling is "purposive sampling" which gives the researchers the scope to use their own judgment to select suitable people for the sample" (Guarte, et al., 2006). A pre-tested and close-ended questionnaire using a five-point Likert scale was used to collect data from the farmers for the investigation quantitatively. The numbers of data were collected from the three upazilas mentioned before in table 3 as: Phulbaria (70 farmers); Patnitola (70 farmers) and Monirampur (70 farmers). These zones were all paddy producing and paddy surplus zones of Dinajpur, Noagaon, and Jashore districts. Collecting data from the field, the researcher took the help of three persons who were provided training before.

11. VALIDITY, RELIABILITY AND ETHICAL CONSIDERATION OF DATA

The validity and reliability of data with its ethical consideration of collection and utilization is very critical issue for any booming research work.

Validity of Data: "Internal validity, external validity and reliability are the key areas under the validity of data. Internal validity emphasizes on the matching process between research findings and reality" (Merriam, 2009). External validity refers to the generalized ability of the study. Two types of strategies are employed to achieve external validity and they are the thick description and maximum variation (Merriam, 2009). This study considered both the strategies for external validation. Providing detailed information on participation is the key area of thick description. Adequate evidence in the form of quotes from the observation and interviews should be presented. For maximum variation, this study is concerned about the selection of the study sample (Merraim, 2009).

Reliability: In order to reduce biases, similar questions were asked to the respondents from similar stakeholders group. Moreover, responses from different respondents within similar stakeholders' group were compared to each other and, hence, this activity has helped the study to ensure the validity of the arguments forwarded for analysis purposes. In addition, reviewing the literature regarding this research issue and observing the documents related to the research, such as government policy and purposes of paddy procurement and articles in the newspapers have all been useful in this regard.

Ethical Consideration in the Data Collection Process: Qualitative research is more sensitive to ethical consideration because of the risk faced during the data collection process. During the data collection, the main concern is that a human being is being interviewed and the researcher must bring himself closer to the respondent. According to Bowen, "in a research that considered human as subjects of interest, an informed consent is certainly an important feature of ethical considerations. Interviews of this study were conducted according to the standard ethical guideline. In compliance with the standard code of practice on research ethics, I agreed that any information that was obtained in connection with this study through interviews and that could be identified with interviewees would remain confidential and would be disclosed only with the permission of interviewees, except as required by law" (Bowen, 2005). With the permission of interviewees, I only discussed and published the results of the interviews as part of this study of the paddy procurement system in Bangladesh. Primarily, full identification of the researcher's identity, voluntary participation from the respondent and ensuring the confidentiality are the basic elements that should be maintained during the data collection process. However, more ethical concerns are also raised in this type of research because this research has the scope of interpretive latitude to the researcher, and the researcher may integrate the research data with his personal feelings, opinions and perceptions.

12. DATA ANALYSIS

The respondents' age distribution is summarized in table 2.

Table 2: Age group distribution of the respondents (n=210)

Age Group (year)	**Frequency**	**Percentage**
Mean±SD	48.83±11.72	
24-38	36	17.1
39-53	99	47.1
54-65	75	35.7
Total	210	100.0

From table 2, we can observe that the mean age of the respondents was 48.83±11.72 years. Majority of the respondents (47.1%) came from 39-53 years age group followed by 35.7% from 54-65 years and 17.1% from 24-38 years.

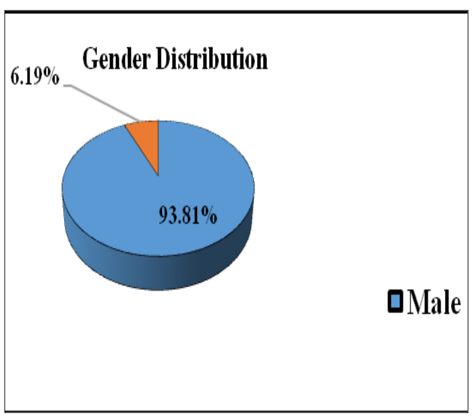


Figure 1: Gender Distribution

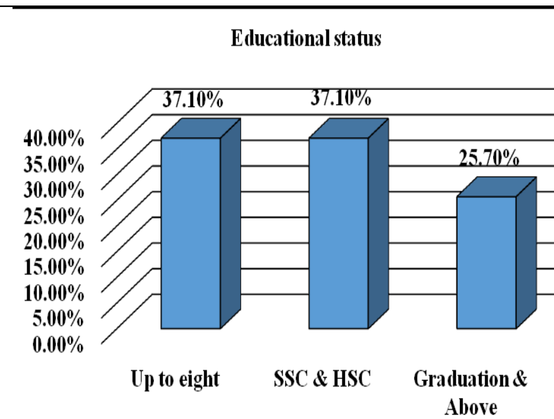


Figure 2: Educational status of the respondents

The respondents' gender distribution is showed in figure 1. Figure 1 shows the total respondents were 210 in which male and female distribution were 197 (93.81%) and 13 (6.19 %). The respondents' educational status is showed in figure 2. Figure 2 shows about 37.10%, 37.10% and 25.7% of the respondents belonged to class eight, SSC & HSC and Graduation& above the level of education. The respondents' working status is showed in figure 3. Here the figure 3 shows more than half of the farmers are full time and the rest cultivate paddy but they do other jobs also. Full time and part time farmers' working status were nearly equal. The respondents' NID status is showed in figure 4. Figure 4 shows the data that most of the farmers belongs NID. Here 89.50% of the farmers had NID number.

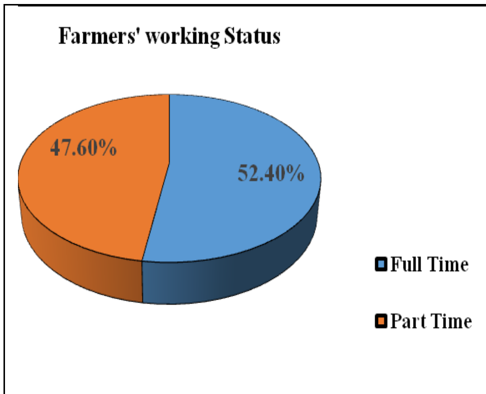


Figure 3: Farmers' working status

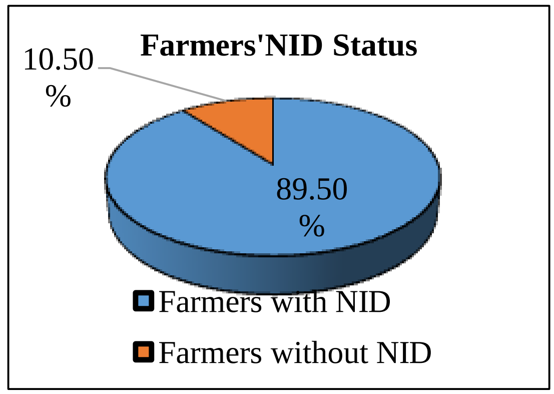


Figure 4: NID status of the farmers

Farmers' preference of the sell of their paddy is showed in figure 5. Figure 5 shows the farmers prefer to sell to the private sector which was nearly double (63.33%) than their sale to the government (37.77%). Farmers' happiness on current paddy procurement system is showed in figure 6. Figure 6 shows more than half of the farmers (64.30%) were not happy on the current paddy procurement system and 23.3% were happy.

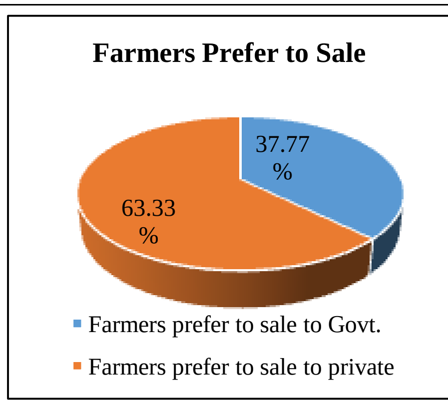


Figure 5: Farmers' sale preferences

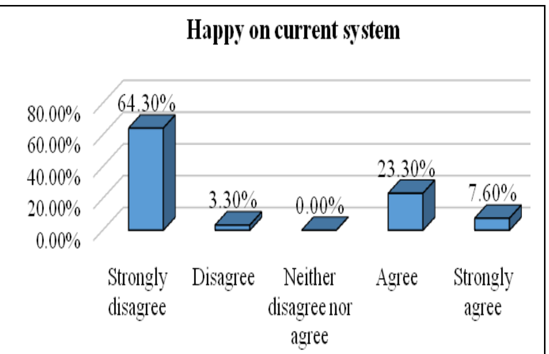


Figure 6: Farmers' happiness on current paddy procurement system

Farmers' opinion on involvement of middlemen on current paddy procurement system is showed in figure 7. Figure 7 shows farmers' opinion on involvement of middlemen on current paddy procurement system More than half of the farmers (66.70%) gave consent about the presence of middlemen in the current paddy procurement system. Desire of the farmers on new paddy procurement system is showed in figure 8. Figure 8 shows most of the farmers (94.30%) strongly desired new paddy procurement system.

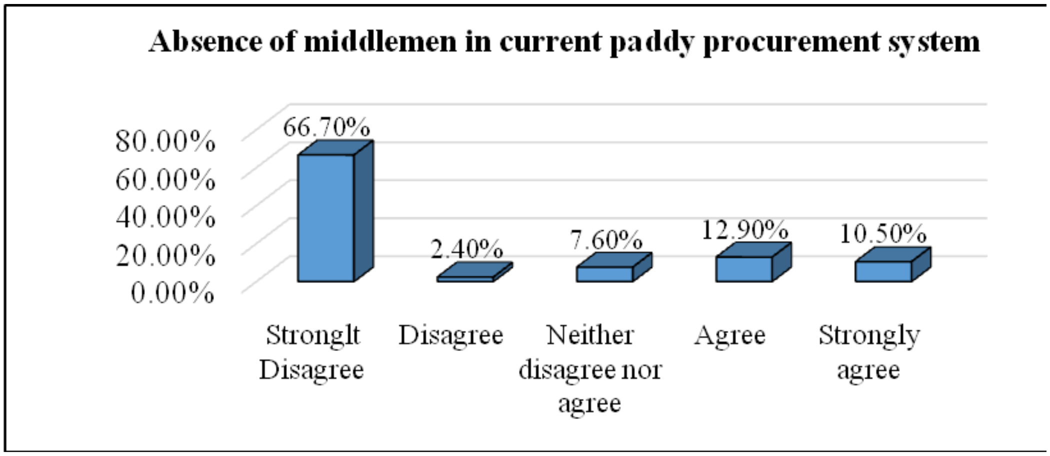


Figure 7: Farmers' opinion on involvement of middlemen on current paddy procurement system

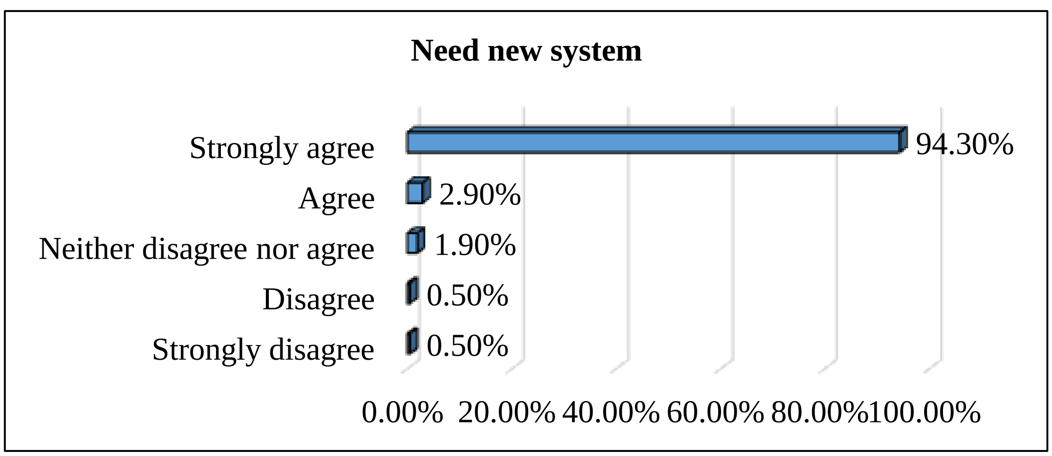


Figure 8: Desire of the farmers on new paddy procurement system

The satisfaction level of farmers about paddy production related activities are summarized in table 3. In table 3, we can observe in case of happiness in paddy production work more than half of the farmers (62.4%) were strongly agreed but about 31% farmers were not happy on transport/carrying cost which was quite similar regarding selling price. About 53.8% of farmers were happy with the local market and 22.9% were strongly happy.

Table 3: Satisfaction level of farmers

Variable of interest	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
Are you happy with your paddy production work	0 (0.0)	13 (6.2)	25 (11.9)	41(18.5)	131 (62.4)
Are you happy with transport/carrying cost	35 (16.7)	56 (26.7)	65 (31.0)	34 (16.2)	20 (9.5)
Are you happy with selling price	32 (15.2)	20 (9.5)	74 (35.2)	64 (30.5)	20 (9.5)
Are you happy with your local market	7 (3.3)	2 (1.0)	40 (18.0)	113 (53.8)	48 (22.9)

Results were expressed as n (%)

From table 3 it is found that the farmers are not happy with the current paddy procurement task, in transportation, price, payment and timing. In no area of the current procurement system of government, the farmers are happy. The satisfaction level of framers on current procurement system of government is summarized in table 4.

Table 4: Satisfaction level of framers on current procurement system of government

Current procurement system of government	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
Transport	136 (64.8)	1 (0.5)	2 (1.5)	36 (17.1)	35 (16.7)
Price	139 (66.2)	5 (2.4)	1 (0.5)	33 (15.7)	32 (15.2)
Payment	135 (64.3)	9 (4.3)	1 (0.5)	49 (23.3)	16 (7.6)
Timing	143 (68.1)	1 (0.5)	1 (0.5)	50 (23.8)	15 (7.1)

Results were expressed as n (%)

The satisfaction level of framers on selling system of government is summarized in table 5. From table 5 shows the respondents are opined about the paddy sales and it is found that 66.7% said about the presence of the middlemen with the system. On the other hand, they are not getting the government declared price opined three-fifth of the respondents.

Table 6: Satisfaction level of framers on selling system

Selling system	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
There is no middle-man in govt. selling system	140 (66.7)	5 (2.4)	16 (7.6)	27 (12.9)	22 (10.5)
Getting govt. declared price	103 (49.0)	37 (17.6)	7 (3.3)	17 (8.1)	46 (21.9)
Making enough profit by selling paddy	47 (22.4)	17 (8.1)	81 (38.6)	29 (13.8)	36 (17.1)

Results were expressed as n (%).

The table 7 shows in case of the perception of the farmers about paddy procurement system, most of them were agreed and strongly to use a new system, want to know price update in their mobile, want the new digital system because the digital system has low corruption than a manual system.

Table 7: Farmers' perception about new system

Farmers' perception	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
Like to use other method	2 (1.0)	0 (0.0)	21(10.0)	75 (35.7)	112 (53.3)
Desire to all price updated in mobile/website	35 (16.7)	0 (0.0)	16(7.6)	92 (43.8)	67 (31.9)
Like to get instant cash payment	16 (7.6)	0 (0.0)	41(19.5)	80 (38.1)	73 (34.8)
Chance to corrupt cash payment	0 (0.0)	0 (0.0)	94(44.8)	69 (32.9)	47 (22.4)
Like to get payment in bank account	22 (10.5)	0 (0.0)	27(12.9)	89 (42.4)	27 (34.3)
Like to get payment via mobile banking	20 (9.5)	0 (0.0)	13(6.2)	121 (57.6)	56 (26.7)
Getting digitalized to use it	0 (0.0)	0 (0.0)	24(11.4)	126 (60.0)	60 (28.6)
ICT based/Digitalized system has low corruption than manual system	0 (0.0)	0 (0.0)	2(1.0)	124 (59.0)	84 (40.0)
Getting actual price if govt. initialized digital monitoring system	0 (0.0)	0 (0.0)	1(0.5)	115 (54.8)	94 (44.8)

13. DISCUSSION

Discussion on the Findings of Quantitative Analysis: Farmers form three Upazila participated to the research (n =210). Total respondents were 210 in which Male and female distribution were 197 (93.80%) and 13 (6.20 %.). Most of the farmers are happy with paddy production work. Mean age of the respondents was 48.83±11.72 years. Majority of the respondents (47.1%) came from 39-53 years' age group followed by 35.7% from 54-65 years and 17.1% from 24-38 years. The educational status of the respondent farmers was like about 37.10%, 37.10% and 25.7% of the respondents belonged to class eight, SSC & HSC and Graduation & above level of education. Full time and part time farmers' working status were nearly equal. From the data analysis, it was found that fourth-fifth of the framers used mobile phone whereas one-fourth did not. Most of the farmers (89.50%) had NID number. Farmers' preference to sell to the private sector was nearly double (63.33%) than to the government (37.77%). More than half of the farmers (64.30%) were not happy on current paddy procurement system and 23.3% were happy**.** More than half of the farmers (66.70%) gave consent about the presence of the middlemen in the current paddy procurement system. Most of the farmers (94.30%) strongly desired new paddy procurement system. In case of happiness in paddy production work, more than half of the farmers (62.4%) strongly agreed but about 31% farmers were not happy on transport/carrying cost which was quite similar regarding selling price. About 53.8% farmers were happy with local market and 22.9% were strongly happy. In case of Satisfaction level of framers on current procurement system of the government, most of the farmers are not satisfied on transportation (64.8%), price (66.2%), payment (64.3%) and timing (68.1%). In case of Satisfaction levels of framers on current selling system, (66.7%) strongly agree that there are involvements of the middlemen within the system. Whereas more than half respondents (66.7%) were not getting government declared price.

14. CONCLUSION

As paddy sale is the dire need to the farmers of Bangladesh and the government also needs to buy the paddy from the farmers to confirm the food security for the population, so the faulty procurement system should be replaced by the new one. The new developed paddy procurement system should be very easy and transparent to the farmers and the supports of farmers should be sanguine. In this article I have found that the farmers are happy with paddy production and they are in dire need of it. The farmers also need to sale the paddy in harvesting time and it may be either in private sale or in procurement system. In the procurement system farmers have to face different types of hazards, like the disturbance of the middlemen, delay in payment etc. So, they are not happy with current procurement system. Most of the farmers desire new system of paddy procurement. A new paddy procurement system is found to be acceptable and preferred by the farmers. Accordingly, a robust and user-friendly paddy procurement system is desire the farmers.

REFERENCE

1. Ahmad, R. (2016). Boro farmers at the mercy of middlemen: Buyers offer prices lower than govt-fixed rates for paddy, rice; procurement by govt yet to start. The Daily Star. 21st May, 2016. Pp.2.
2. Alam, M.J., Akter. S. & Begum, I.A. (2014). Bangladesh`s rice procurement system and possible alternatives in supporting farmer`s income and sustaining production incentives. A study report. Mymensingh, Bangladesh: Department of Agribusiness and Marketing. Bangladesh Agriculture University.
3. BBS. Bangladesh. (2016). Statistical pocketbook Bangladesh 2015. Statistics and informatics division. Ministry of planning, Government of Bangladesh. Dhaka: Bangladesh Bureau of Statistics.
4. Bowen, G. A. (2005). Preparing a qualitative research-based dissertation: Lessons learned. The Qualitative Report, 10(2), pp. 208-222.
5. Chowdhury, N. (1987). Seasonality of food grain price and procurement programme in Bangladesh science liberation: An exploratory study. The Bangladesh Development Studies, 15 (1): 105-128.
6. Dewan, M. F. A. (2011). A study on rice marketing system in Bangladesh with time series and cross-sectional data, M. S. Thesis, Department of Agribusiness and Marketing, Bangladesh Agricultural University, Mymensingh.
7. Guarte, J. M. and E.B. Barrios, (2006). Estimation under purposive sampling. Communications in Statistics – Simulation and Computation®, 35(2): pp. 277-284.
8. Krishnan, C. and Varghese, M. (2014). e-Krishi Project of Kerala: An Ex-post Evaluation. National Institute for Smart Government. Ministry of Communications & IT. Government of India.
9. Merriam, S. B. (2009). Qualitative Research: A guide to Design and Implementation. Jossey Bass.
10. Prakash, C. (2012). Problems and expectations of the farmers in marketing paddy in Tiruvarur district, Tamilnadu. Asian Journal of Management Research (O). Open Access publishing platform for Management Research. ISSN 2229-3795.
11. Raha, S.K., Moniruzzaman, M., Alam, M.M. & Awal, M.A. (2013). Structure, conduct, and performance of the rice market and the impact of technological changes in milling. Research Report. Mymensingh, Bangladesh: Institute of Agribusiness and Development Studies, Bangladesh Agriculture University.

12. ricepedia.org. (2018). Rice as a crop. [online] Available at: http://ricepedia.org/rice-as-a-crop. [Accessed 18th December 2018].
13. rkmp.co.in. (2018). History-and-evolution/importance-of-rice-crop.[online] Available at: http://www.rkmp.co.in/general-domain/history-and-evolution/importance-of-rice-crop. [Accessed 15th December 2018].
14. Robel, M. (2013). Marketing of boro paddy in a selected area of Netrakona District. M.S. Thesis. Mymensingh, Bangladesh: Institute of Agribusiness and Development Studies, Bangladesh Agriculture University.
15. Rubaiyat, M. Q. I., Roy, S. D. and Shakil, M. (2018). A country of famished farmers. The Daily Star Weekend. 04th May, 2018. P.35.
16. Sabur S. A, Jahan H. & Reza M. S (2003). An evaluation of government rice procurement program in selected areas of Bangladesh. Bangladesh Journal of Agricultural Economics, 26(454-2016-36528), pp.111-126.
17. The Kathmandu Post. (2015). Low paddy price, output hit farmers hard. Kantipur Publications Pvt. Ltd. Nepal. 13 December 2015.

Comparative Analysis of Income, Expenditure and Profitability: A Case of Banking Sector in Bangladesh

Fakir Tajul Islam[1]

Abstract: *Banks are now playing pivotal role in the financial sector in Bangladesh. It needs to balance between income and expenditure to progress by achieving ample profitability. In this study, a comparison among income, expenditure and manpower is conducted to find out any trend and interrelationship for the betterment of the banking sector. In this study, the data was taken from the time frame 1985-2017. And the variables analyzed here are total income, total expenditure, and net profit after tax in the banking industry in Bangladesh. The findings showed that the incomes of foreign and private banks are more stable than that of state owned banks. It affects the profitability of the banks significantly, and guided to acquire losses in the long-run business operation eventually. Non-performing loans, lack of corporate governance were the key factors to the variability of the income, expenditure and profitability of banking system in Bangladesh.*

Key words: *Bank, Bangladesh, Comparative Analysis, Income, Expenditure, Profitability*

1. INTRODUCTION

To promote economic growth, development of banking industry is crucial for an emerging economy like Bangladesh. In the last three decades, the banking industry expanded its services and market coverage. Banks have income and expenditures which has highest impact on operational profitability and success. But the state owned banks (SoB) has become a problem of the banking sector. The problems prevail though Bangladesh has adopted internationally Basel III Accord recently. After, the banking sector is now more regulated for business development and economic growth a developing economy Bangladesh has encouraged developing its banking industry to promote economic growth (Mahmood, 2019). The economic growth of Bangladesh is largely depending on financing provided by banks. If banks face problems, the economy gets affected according to an Asian Development Bank report (The Daily Star, 2019).

2. BANKING SECTOR IN BANGLADESH

The banking sector in Bangladesh is divided into three major categories of banks. These are the central bank, scheduled banks and non-scheduled banks. Banking industry is a

[1] Assistant Professor, South Asia School of Business, University of South Asia.

part of the formal sector of the total financial system in Bangladesh. It includes all regulated institution like banks, non-banking financial institutions, insurance businesses, brokerage institutions, merchant banks and also the micro-finance institutions in Bangladesh. The banks and the financial intermediaries also comprise the money market to support the business operation.

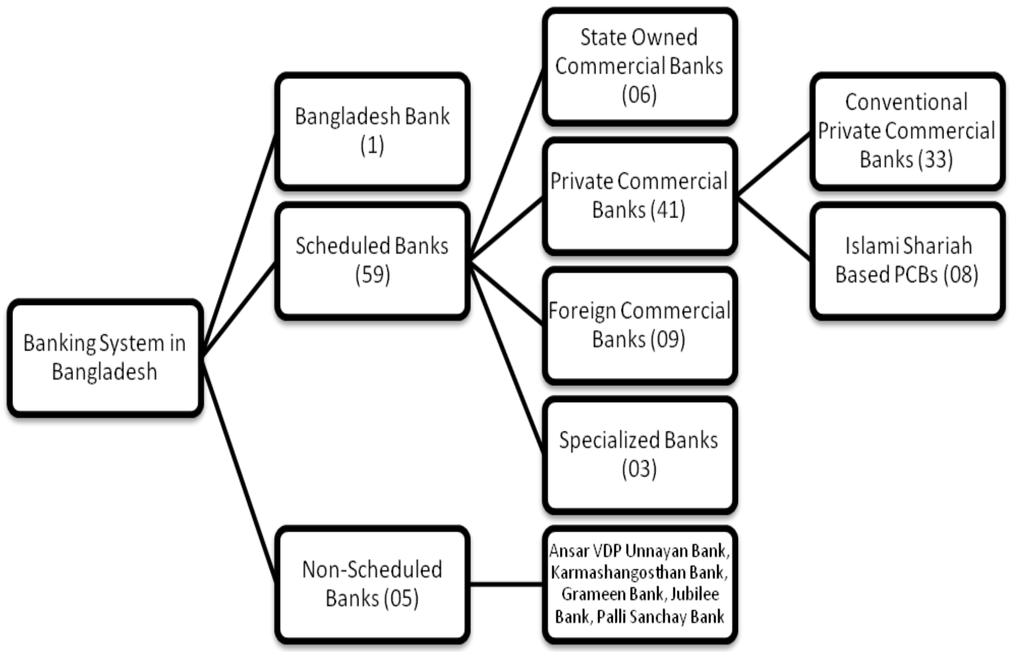


Figure 1: Banking system in Bangladesh. Source (Bangladesh Bank, 2019)

As showed in the above Figure-1, the scheduled banks are the institutions which are remained in the list of banks to be regulated and maintained the Bangladesh Bank Order, 1972.The non-scheduled banks are established for addressing special purposes and these specialized banks have been performing in the specialized field of business.

3. LITERATURE REVIEW

This study explored various literatures on income, expenditure and profitability of banking business in Bangladesh and in abroad. Higher expenditure causes the profitability to be reduced. In some studies, impact of operational expenses on profitability was observed. Bourke (1986) found that the effort on reducing expenditure leads to improvement of profitability. It was also observed in various studies that hiring an effective human resource can bring high profitability, though the expenditure increased (Molyneux, Thornton, 1992; Berger et al. 2000; Francis 2013). Profitability is closely related with the income and expenditure in banks. Cost efficiency which estimated using the ratio of cost to income, determines the expenditures to run a bank (Pasiouras and Kosmidou, 2007). San and Heng (2013) found that this cost to income ratio has a negative and significant relationship with bank profitability. Similar findings shown by other studies conducted in the banking industries of different countries as well (Kosmidou et al., 2006; Pasiouras and Kosmidou, 2007; Guru et al., 2002). Overall, a negative relationship between cost to income ratio and bank profitability seem to be the norm.

Managing liquidity is important for balancing between income and expenditure. It has impact on the profitability of banking business as well. It was found the net liquidity gap has strong positive relationship with profitability indicators, such as return on equity, return on assets and earnings per share of banks in Bangladesh (Islam & Hasan, 2015). Another finding showed that Total operating income and number of employees as a representative of profitability influence cash and cash equivalent account significantly and positively, it reveals that there is significant relationship among the income and liquidity maintenance for ensuring profitability of banks in Bangladesh (Islam et al., 2017). Non-performing loans (NPLs) and loan loss provisioning (LLPs) have impacts on the profitability of banks in Bangladesh also. It was well-observed in the past that the high level of non-performing loans (NPLs) can reduce the profitability of banks severely and responsible to increase the credit risk profoundly (Bourke, 1989). High risk results higher provisions for loan losses, and bank compromises its profit maximization rules to follow. This hypothesis was tested and found significant in other studies also (Sheefeni, 2015 in Namibia; Qin and Pastory, 2012, in Tanzania; and Cimkono et al., 2016, in Malawi). It was also found that NPLs and LLPs maintained by the commercial banks negatively related with the profitability of the business, especially LLPs shown statistical significance to impact on profitability negatively (Islam, 2018).

According to Bangladesh Bank, ten banks faced capital deficits in 2018 and sought state-funded capital enhancement to enforce the public confidence in the banking business, and it may become fatal for the banks which were doing business with such problems (Mahmood, 2019). ADB report reveals that Weak governance in the banks, especially in the state owned banks, caused the high ratio of expenditure to earnings, and it increase the operating expenses by recruiting inefficient personnel in the workforce (The Daily Star, 2019). The number of commercial banks increased rapidly in the last ten years. It is helpful for the inclusion of disadvantaged and low-income groups. But it is emphasized highly to establish good governance, transparency with adequate accountability and effective risk management techniques for upholding the desired outcome from the banking business (Hossen, 2019).

4. RESEARCH METHODOLOGY

In this study, the aggregated data of total banking industry was used for broad analysis of the banking sector of Bangladesh. For bank, income through service providing and managing its expenses for better profitability is important. This is reason to choose the three variables for analysis. The aggregated data of the three major categories of the banks, State Owned Banks (SoBs); Private Banks (PB) including Conventional Private Banks and Islami Shariah Based Private Banks and Foreign Banks (FBs) are recorded based on convenience sampling.

Table 1: Summary of research design and sampling methods

Variables	Total Income; Total Expenditure, Net Profit After Tax
Sample	Aggregated data of State Owned Banks (06); Private Banks (41) including Conventional Private Banks (33) and Islami Shariah Based Private Banks (08) and Foreign Commercial Banks (09).
Sampling Method	Convenience Sampling
Time Frame	34 years (1984-2017)
Sources of Data	Financial Statement of respective banks, different databases and author's own calculation
Data reliability and validity	Cronbach's Alpha, Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity

Here, the net profit after tax is the proxy for the profitability of banking sector in Bangladesh. The analysis is done using the aggregate data of the banks through SPSS v25 and Eviews v10. The statistical tools used in this study were the measures of central tendency and the measures of variance. Computation of mean, range and standard deviation gave useful insights for the comparative analysis of income, expenditure and profitability of banks in Bangladesh. Later, the graphical trend ends the analysis.

5. RESEARCH FINDINGS AND ANALYSIS

In this study, the financial data of respective banks are analyzed for the comparison among the three main categories of banks in Bangladesh, namely, state owned banks (SoBs), private banks (PB) and foreign banks (FB). In the following sections, the income, expenditure and profitability of these three categories of banks are analyzed for deriving a trend and road to future success of banking business. The reliability of the data used in the study is found very dependable. The score of Cronbach's Alpha is 0.889 which proves that the sample is highly consistent and reliable for analysis.

Table 2: Reliability Statistics

Cronbach's Alpha	N of Items
.889	12

Source: SPSS v23 output

Kaiser Meyer Olkin (KMO) measures the adequacy of sampling data in a study. The statistics has given an output between 0 and 1. In this study, the sample adequacy is found moderately adequate, as the KMO value is 0.506.

Table 3: Kaiser Meyer Olkin (KMO) and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.506
Bartlett's Test of Sphericity	Approx. Chi-Square	1863.960
	df	66
	Sig.	.000

Source: SPSS v23 output

The Bartlett's Test of Sphericity is the tools for measuring the strength of relationship among the variables used in the study. The value of the Bartlett’s test is significant with approx. Chi-Square 1863.960, which confirms that the correlation matrix is not an identity matrix.

5.1 Income and expenditure of banking operation

Being a least developed country, Bangladesh has been nourishing its financial market since independence. Now in the financial industry, there are 65 banks of which 59 scheduled banks. The income of bank comprises of interest income from lending money to businesses and individuals, income from investment in securities & other assets, and income for other services such as locker service, custodian service etc. To compare the income the banks, it is revealed that in the last 34 years, the highest average income was of private banks. Because they have larger number of branches and also the higher number private banks compare to the number of foreign banks and state owned banks.

Table 4: Comparative analysis of income of banks in Bangladesh (in crores)

	Range	Minimum	Maximum	Mean	Std. Deviation
State Owned Banks (SoBs)	20149.41	680.46	20829.87	6277.6915	6535.41497
Foreign Banks (FBs)	5887.27	98.67	5985.94	1779.4909	1964.67480
Private Banks (PBs)	71696.67	192.17	71888.84	16829.2268	23607.27598

Source: Author's analysis of the data collected from Bangladesh Bank (2019)

Table-4 shows the income of three categories of banks in Bangladesh. With the highest number of branches, the income of the SoBs is not satisfactory compare to the FBs and PBs. To explore the reasons behind the low income of SoB, lack of good governance was found very frequent to manage banking business. The presence of good governance can ensure transparency, accountability among the officers and staff. Moreover it can enhance earnings capacity, cost control and increase profitability.

Table 5: Comparative analysis of expenditure of banks in Bangladesh (in crores)

	Range	Minimum	Maximum	Mean	Std. Deviation
State Owned Banks (SoBs)	17863.56	573.47	18437.03	5247.3665	5322.20211
Foreign Banks (FBs)	2945.74	61.65	3007.39	862.7676	928.33610
Private Banks (PBs)	52966.00	172.79	53138.79	12396.9209	17534.59982

Source: Author's analysis of the data collected from Bangladesh Bank (2019)

The expenditures of banks mainly include the administrative and marketing expenses. But in the last ten years another major expense dominated in a bank, especially in the SoBs, which is non-performing loan (NPLs). The major drawback of the banking system in Bangladesh is the NPLs, which got out of control for some banks, especially for state owned banks. Based on the above comparison (Table-5), the SoBs had highest minimum expenditure and second highest maximum expenditure, in comparison with the PBs and FBs. A loan is recorded as NPL when it has been in default for 90 days. And it is the main form of expenditure which is not productive and value adding to the business. NPLs are one of the prime concerns hitting the financial health and stability of banks and it is one of the major causes of decreasing trend of profitability of SoBs.

5.2 Profitability of banking business

As stated in the earlier sections, the income of banks reduced by the greater expenses including the NPLs, lack of good governance and political influences. And these factors caused the profitability down to a minimum level in the last decade.

Table 6: Comparative analysis of net profit after tax of banks in Bangladesh (in crores)

	Range	Minimum	Maximum	Mean	Std. Deviation
State Owned Banks (SoBs)	8781.32	-6522.88	2258.44	-156.0709	1570.32576
Foreign Banks (FBs)	1699.51	6.52	1706.03	483.1765	557.61363
Private Banks (PBs)	7086.67	-11.45	7075.22	1798.7488	2515.87574

Source: Author's analysis of the data collected from Bangladesh Bank (2019)

As shown in the above Table-6, the state owned banks had a net loss in their business operation but also achieved highest amount of profit aggregately as the maximum earnings among the three main categories of bank in Bangladesh. From this table, the mean value of the three categories of banks, state owned banks profitability is frustrating with high level of standard deviation. Though the foreign banks and private bank were found consist in this measure and in the following figure.

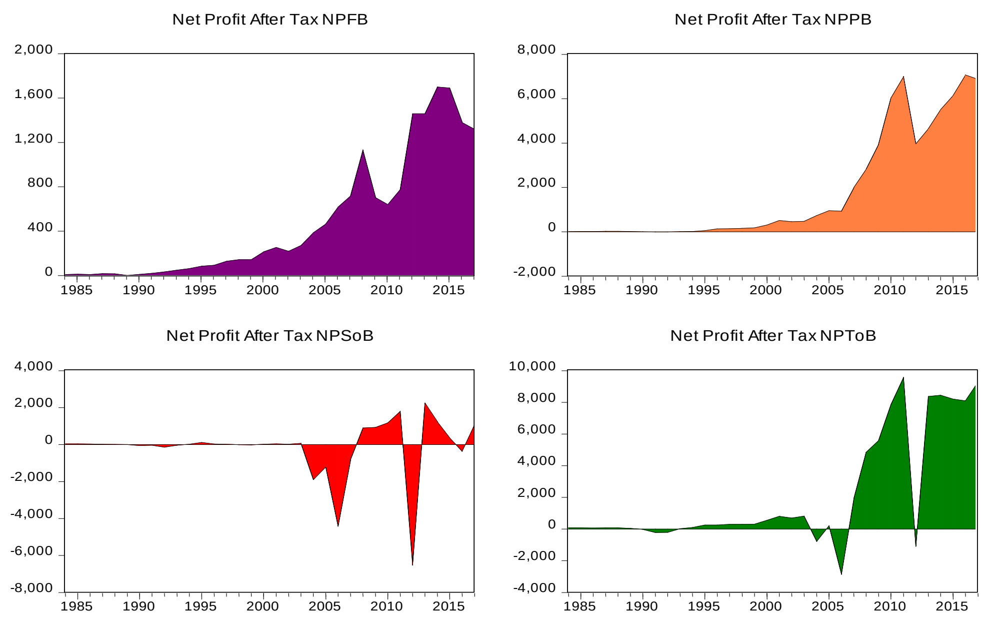


Figure 2: Comparative analysis of net profit after tax of banks (Bangladesh Bank 2019).

As shown in the above Figure-2, it is notice that the total banking industry's got a negative and downward growth due to the loss of profitability in the form of net profit after tax of state owned banks in Bangladesh. The foreign banks and the private banks have been maintaining an upward and positive growth of net profit after tax since 1985. Around the year 2010, the precedent and subsequent years, the banks in Bangladesh faced troubles due to the fall of indicators in capital market indices. In a recent report published by the Asian Development Bank (ADB), it is opined that the banking sector has been weakening due to several causes, among them; the major causes are increase in non-performing loans, weak corporate governance and rising shortage of capital (The Daily Star, 2019). Moreover the investment in the capital market was one of major sources of income of the banks. Non-performing loans made the situation worst, especially for the state owned banks in Bangladesh.

6. CONCLUSION

Among the three major categories of banks, the SoBs are the most vulnerable banks to the problems found in the banking industry of Bangladesh. The increase of NPLs in the PBs and SoBs, cause the banking sector more unstable. But the foreign banks have been doing well as they have little market share with specialized and different set of customers. The proliferation of the banks made it mandatory to perform to customers' satisfaction and safety of their fund. As banks are the crucial part of the total financial system, this sector should be more vigilant to deploy efficient management and to establish good corporate governance for greater income generation and reduction of cost in the business. The outcome of this study will help to find new avenue of research in the future. Besides that the findings of this research will enrich the literature on bank operations management and efficiency.

REFERENCE

1. Bangladesh Bank (2019). Bank and Financial system. Retrieved from https://www.bb.org.bd/fnansys/bankfi.php [September 30, 2019]
2. Berger, A. N., DeYoung, R., Genay, H. and Udell, G., (2000). Globalization of Financial Institutions: Evidence from Cross-border Banking Performance. *Brookings-Wharton Papers on Financial Services*, 3, pp. 23-158.
3. Bourke, P., (1989). Concentration and Other Determinants of Bank Profitability in Europe, North America and Australia. *Journal of Banking & Finance*, 13 (1), pp. 65-79.
4. Cimkono, E. E., Muturi, W. and Njeru, A., (2016). Effect of Non-performing Loans and Other Factors on Performance of Commercial Banks in Malawi. *International Journal of Economics, Commerce and Management*, 4 (2), 549-563.

5. Francis, M. E., (2013). Determinants of Commercial Bank Profitability in Sub-Saharan Africa. *International Journal of Economics and Finance*, 5 (9), pp. 134-147.
6. Guru, B. K., Staunton, J., and Balashanmugam, B., (2002). Determinants of commercial bank profitability in Malaysia. *Journal of Money, Credit, and Banking*, 17, 69-82.
7. Hossen, M. N., (2019). Challenges for our banking sector, retrieved from https://www.dhakatribune.com/opinion/op-ed/2019/05/05/challenges-for-our-banking-sector [September 30, 2019]
8. Islam, F.T. and Hasan, M.K., (2015). Measuring the Impact of net liquidity gap on profitability of banks: a study on some selected commercial banks in Bangladesh, The Eastern University Journal 5 (2), 53-67
9. Islam, F.T., (2018). Evaluating Loan Loss Provisioning for Non-Performing Loans and Its Impact on the Profitability of Commercial Banks in Bangladesh. *Asian Finance and Banking Review*, 2(2), 33-41.
10. Islam, F.T., Tithi, A.A. and Mostofa, M.S., (2017). Measuring efficiency of liquidity management for resources utilization and business profitability an empirical assessment of banking sector of Bangladesh. *International Journal of Economics, Commerce and Management* 5 (4), 379-389
11. Islam, M.T., Islam, F.T. and Ahmed, A., (2013). Performance Analysis of Selected Private Commercial Banks in Bangladesh. *The Jahangirnagar Journal of Finance & Banking*, Vol 1(1), 37-48
12. Kosmidou, K., Pasiouras, F., Doumpos, M. and Zopounidis, C., (2006). Assessing performance factors in the UK banking sector: a multicriteria methodology. *Central European Journal of Operations Research*, 14(1), 25-44.
13. Mahmood, M., (2019). The current state of the banking industry in Bangladesh, retrieved from https://thefinancialexpress.com.bd/views/views/the-current-state-of-the-banking-industry-in-bangladesh-1556380055 [September 30, 2019]
14. Molyneux, P., Lloyd-Williams, D. M. and Thornton, J., (1994). Competitive Conditions in European Banking. *Journal of Banking and Finance*, 18 (3), pp. 445-459.
15. Pasiouras, F. and Kosmidou, K., (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, 21(2), 222-237.
16. Qin, X. and Pastory, D., (2012). Commercial Banks Profitability Position: The Case of Tanzania. *International Journal of Business and Management*, 7 (13), pp. 136-144.
17. San, O. T. and Heng, T. B., (2013). Factors affecting the profitability of Malaysian commercial banks. *African Journal of Business Management*, 7(8), 649-660.
18. Sheefeni, J. P. S., (2015). Evaluating Impact of Bank Specific Determinants of Non-performing Loans in Namibia. *Journal of Emerging Issues in Economics, Finance and Banking*, 4 (2), pp. 1525-1541.
19. The Daily Star (2019). Banking sector's health weakens, retrieved from https://www.thedailystar.net/backpage/news/banking-sectors-health-weakens-1724677 [September 30, 2019].

A Study on Automobile Spare Parts Based SME in Dholaikhal

Moinul Ahsan[1]

Abstract: *Small and Medium Enterprise (SME) is playing a vital role in the socio-economic development in Bangladesh. There are different types of commodities that are produced through SME where this study will show a picture of Short and Medium Enterprises in Dholaikhal, Dhaka who are involved in automobile spare parts related Business. Comparison between the products found in Dholaikhal and imported foreign products (especially Chinese products) on the basis of availability, price and demand will be studied here. The role of Small and Medium Enterprises of Dholaikhal in the automobile industries in Bangladesh will also be studied. This study will try to show the prospect and present situation of SME, obstacles and ways of how to solve the problems of SME in Bangladesh.*

Key words: *Small and Medium Enterprise (SME), Dholaikhal, Automobile Spare Parts*

1. INTRODUCTION

Bangladesh has recently become developing country [1] from the status of under-developed country. In the first quarter of 2019, Bangladesh's was the world's seventh fastest growing economy with a rate of 7.3% real GDP annual growth [2]. Since 2004 Bangladesh economy has been depending on export of ready-made garments, remittances and agriculture sector. In 2019, alongside ready-made garments, export-oriented industrialization of textiles, shipbuilding, fish, seafood, jute, leather goods, pharmaceuticals, steel and food processing are making significant role in this developing country status. So Bangladesh has developed good number of small, medium and large enterprise in the mentioned sectors. Automobile spare parts business are not export oriented business in Bangladesh. It only serves the purpose of domestic needs.

Bangladesh has only small and medium enterprises of automobile spare parts. The most of these enterprises are situated in Dholaikhal, Dhaka. But these enterprises cannot fulfill the domestic demand of automobile spare parts. To fulfill the demand, every year a lot of foreign currency is spent due to import purposes of the automobile spare parts. The local automobile spare parts market of Bangladesh is mainly captured by the foreign products.

[1] Assistant Professor, Department of Textile Engineering, University of South Asia.

Bangladeshi products cannot fulfill local demand due to quality of products, proper financial support to the producer and some other factors. To overcome the problem strong SME along with technological support may give a better solution.

2. OBJECTIVES AND METHODOLOGY

2.1 Objectives

The broad objective of the research is to show competitiveness of local automobile spare parts with foreign automobile spare parts (Chinese products) in the field of quality, demand and price. The specific objectives are as follows:

- Surveying the available automobile spare parts in Dholaikhal, Dhaka
- Surveying the SMEs that are producing automobile spare parts in Dholaikhal, Dhaka
- Surveying the demand of both Bangladeshi & foreign product (Chinese products)
- Analyzing the cost and quality of Dholaikhal made products over Chinese products
- Giving further recommendation to improve its quality of local products, considering cost

2.2 Methodology

This research will be prepared by the following data collection methods. For preparing this paper data have been from two sources. These sources are-

2.2.1 Primary Sources: The workers of the automobile spare parts SME's are mostly illiterate. That's why they are unaware about the importance of the survey. It was impossible to collect authentic information from them for their lack of cooperation.

2.2.2 Secondary Sources: Data will be collected from the reports available from SME foundation of Bangladesh, Bangladesh Bank and other government organizations of Bangladesh.

2.2.3 Tertiary Sources: Some data will be collected with the help of Wikipedia and other tertiary sources.

3. PRESENT SITUATION

3.1 Definition of SME

Existing definition of SME is recommended by Better Business Forum and accepted as a uniform one by Ministry of Industry and Bangladesh Bank. Criteria of the definition of SME are given below [4]:

3.1.1 Definition of Small Enterprise in Bangladesh

Small Enterprise refers to the firm/business which is not a public limited company and complies the following criteria:

Table 1: Categories of Small Enterprise in Bangladesh [4]

Sl.	Sector	Fixed Asset other than Land and Building (BDT)	Employed Manpower (Maximum)
1	Service	50,000-5,000,000	25
2	Business	50,000-5,000,000	25
3	Industrial	50,000-15,000,000	50

3.1.2 Definition of Medium Enterprise in Bangladesh

Medium Enterprise refers to the establishment/firm which is not a public limited company and complies the following criteria:

Table 2: Categories of Medium Enterprise in Bangladesh [4]

Sl.	Sector	Fixed Asset other than Land and Building (BDT)	Employed Manpower (Maximum)
1	Service	5,000,000-100,000,000	50
2	Business	5,000,000-100,000,000	50
3	Industrial	15,000,000-200,000,000	150

3.2 SME of Dholaikhal

Most of the automobile parts importers do business at Bangla Motor but Dholaikhal is the hub of old automobile spare parts business in Dhaka. All types of refurbished automobile parts are available in Dholaikhal. The motor parts are mainly collected through auctions of old and outdated vehicles held by different government departments.

The automobile spare parts business has started in 1960 at Dholaikhal. It started booming after the independence of Bangladesh in 1971. Now the SME of Dholaikhal became heart of light engineering sector. The mechanics without any academic qualification are making parts, engines, chassis and other outfitting for motor vehicles with the parts of old vehicles. Even the mechanics make tempos with shallow pump engines, remake engines, wheel drums and hobs and all kinds of motor outfitting with the parts of old vehicles mainly of Japanese transports. They can separate parts of a motor vehicle within several hours and repair all sorts of machines including generators, plastic factory machines and machinery of other sectors. By their own machine they are making mixer machine, brick breaker, cargo lift, crane etc. There are 4000 to 5000 mini and big shops in Dholaikhal where at least 30,000 to 40,000 people including owners and employees are working to lead their livelihood. The total motor parts business has developed mostly on the land owned by the city corporation. Some traders have also occupied footpaths and two-thirds of Dholaikhal road of the Dhaka South City Corporation [3].

3.2 Automobile spare parts produced in SME of Dholaikhal

Although it is a mechanical base project, so emphasis is given in mechanical sector. By using SME many mechanical related products are produced.

Table 3: List of available automobile spare parts produced by SME of Dholaikhal

Cylinders	Car Mats	Auto Filter	Brake Cylinders	Car Bumpers	Roof Boxes & Roof Racks
Auto Bearing	Drive Shafts	Brake Calipers	Gearboxes	Car antenna	Sliding Bearing
Axles	Wheels	Shafts	Brake Pads	Needle Bearings	Tire Gauges
Motorcycle Tail Boxes	Couplings	Car Organizers	Ball Bearings	Transmissi on Jacks	Car Mirrors
Piston	Car Safety Belts	Tank & parts	Car Perfumes	Car Grills	Spoilers
Wire Assembly	Radiator and parts	Brake Drums	Car Fenders	Windshield	Special Purpose Bearing
Clutches	Rims	Transmission Chain	Brake Discs	Wipers	Grease Guns
Motorcycle Helmets	Molds	Car Seats	Bearing Accessories	Pillow Block Bearing	Engine Hoods
Worms	Seat Covers	Muffler Assembly	Steering Wheel Covers	Tire Repair Tools	Car Stickers
Tube Assembly	Turbochargers	Brakes	Pulleys	Car Covers	Spherical Plain Bearing
Transmissi on Parts	Tires	Gears	Brake shoes	Roller Bearing	Diagnostic tool
Motorcycle Stickers	Valve	Seat Cushions	High Precision Bearings	Tire Inflators	Motorcycle Bags
Chains	Steering Wheel Locks	Engine Mounts	Car Jacks	Car Doors	Tire Changers

3.3 Comparison of the quality of local and foreign automobile spare parts

Different industries need world class quality of spare parts, tools and other engineering products. The locally produced automobile part often fails to ensure quality mainly due to poor quality of raw materials, old technology and unskilled staff. The raw materials are mainly recycled metal sourced from ship breaking and local scrap market which do not have any test report or certification. Metal processors and assemblers of parts and finished goods are hampered by outdated equipment and practices, and poor testing, tooling and design facilities [6]. The enterprises do not have access to modern testing facilities except limited scopes in BITAC and Bureau of Research Testing Centre (BRTC) of BUET. Quality is a major drawback for export potential of the locally produced automobile products. A study [5] shows the quality difference between Dholaikhal and China made automobile product (piston). That study showed that Chinese piston was much better in material quality, machining quality, chemical quality and strength quality. However the price of locally produced automobile spare parts are 25-30 percent lesser than that of Chinese automobile spare parts. The price difference has open new opportunities to the local light engineering products.

3.4 Initiative taken by the Government for SME

3.4.1 SME Foundation

SME Foundation is established by the Government of Bangladesh through Ministry of Industries as an apex institution for SME development in the country. The major activities of SME Foundation are implementation of SME Policy Strategies adopted by the Bangladesh Government, policy advocacy and intervention for the growth of SMEs, facilitating financial supports for SMEs, providing skill development and capacity building training, facilitating adaptation with appropriate technologies and access to ICT, providing business support services, etc. It is mentionable here that the Foundation is working for the development of enterprises and entrepreneurs who belong to micro, small and medium categories as per Industrial Policy 2016 [7].

3.4.1.1 Vision of SME Foundation

Promote Small and Medium Enterprises (SMEs) for alleviating poverty, generating employment and thereby accelerating economic growth [7].

3.4.1.2 Objectives of SME foundation

- To promote, support, strengthen and encourage the growth and development of SMEs in all productive sectors of the economy

- To plan, program and finance interventions for delivery by private sector organizations. To institute SME Awards in order to promote competitiveness among the SMEs
- To facilitate SME access to finance by creating and supporting appropriate strategies and institutions in order to encourage and promote potential SME
- To rationalize public sector approaches and support structures for SME development through systematic capacity assessment and interventions
- To create a pro-growth and pro-poor business environment and find what they need
- To encourage improvement in SME business environment by gradually becoming a one-stop facilitation window center. For SMEs in getting licenses and approvals from various agencies and department, and in accessing other required services
- To create a database and provide all needed information about SMEs to investors and service providers.

3.4.2 Financial Support for SME

Bangladesh Bank has already introduced several schemes and programs to flourish and expand SME Enterprises. Refinance scheme funded by Bangladesh Bank (BB), International Development Association (IDA) and Asian Development Bank (ADB) has been facilitated for the development of SME Sector. Besides, to ensure institutional financial facilities under easy conditions Bangladesh Bank has taken diverse steps; like opening of ‘Dedicated Desk’ for SME and ‘SME Service Centre’ in the banks. To develop SME sector, the fund of BB, IDA and ADB is being channelized through refinance scheme. So far a total of Tk.1.432 billion has been refinanced (up to December 2009) to 14,122 enterprises using the revolving fund (Tk.0.918 billion) of BB, IDA & ADB. Moreover, Bangladesh Bank is going to launch an extended refinance scheme of Tk. 0.66 billion very soon with the newly arranged ADB fund [4].

4. FUTURE SCOPE

The present government emphasis on the development of SME sector considering it as ‘the driving force for industrialization’. The Prime Minister of Bangladesh Sheikh Hasina has announced 'Light Engineering' as the product of the year 2020 to give special attention to this sector for earning more foreign exchange through exporting various products [8] where automobile spare parts are the main products of Light Engineering in Bangladesh.

4.1 Motorcycle Industries in Bangladesh

Already it has been proved that Bangladesh can produce automobile spare parts in much lower price. So, foreign investors like India, China and Japan have started investing in local automobile industry (Motorcycle and Parts industry).

Figure 1: Major Motorcycle brands in Bangladesh

Today more than 1000 motorcycle sold daily in Bangladesh. Annual local sales of motorcycle are growing at the rate of 60 percent per annum during last three years [9].

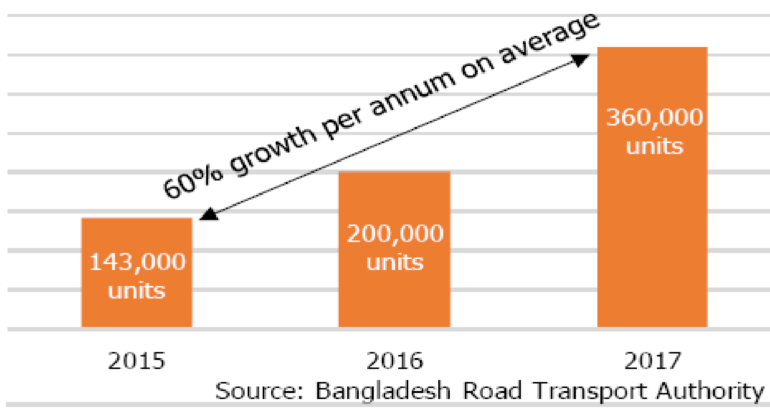


Figure 2: Trend of Motorcycle Sales in Bangladesh

Currently, 40,000 light engineering workshops/enterprises operating. About one million people and innovative entrepreneurs are actively engaged. Now its annual turnover is US$ 1600 million of which Import substitute products is around US$ 200 million. This labor-intensive sector produces a diverse range of items, including import substitute machinery spares, plant machineries and small tools for the domestic market. Most of these enterprises are located in and around Dholaikhal. Entrepreneurs from China, Japan and Korea have taken advantage of Bangladesh's cheap and easily trainable labor and its infrastructure facilities to manufacture products for the export market [9].

4.2 Financial facilities for Automobile Industries

Bangladesh Investment Development Authority (BIDA) announced different financial benefits for the investors in automobile industries. BIDA combining Bangladesh Economic Zones Authority (BEZA), Bangladesh Export Processing Zone Authority (BEPZA) and High Tech Park Authority announced financial benefits like tax holiday, tax rebate, import duty exemption, non-tax incentives, fiscal incentives etc. [9] for the investors. Investors will make local mechanic technically sound to produce quality automobile parts locally.

5. CONCLUSION

Bangladesh is in right track to grow the opportunities of automobile based SME. Cluster like Dholaikhal has a good history of producing automobile spare parts in comparatively much lower price through SMEs. Now it’s time to make those mechanics technically sound and arrange good quality of raw materials so that they can take part in the development of Bangladesh not only serving local market but exporting good quality automobile spare parts.

REFERENCE

1. Riaz A.; Rahman M. S. (2016). Routledge Handbook of Contemporary Bangladesh. Routledge. p. 165. ISBN 978-1-317-30876-8.
2. “Real GDP Growth: Annual Percent Change”, www.imf.org. International Monetary Fund. Retrieved 3 October 2019.
3. https://www.thedailystar.net/news-detail-62625
4. https://bb.org.bd/sme/index.php
5. Rahman M., Aslam M. N. H.., Sultana J., Salam M. A., (2013). Study of Small and Medium Enterprises (SME) Products in Bangladesh: Performance and Quality Improvement of a Selected Product. International Journal of Scientific & Engineering Research, 4(1), http://www .ijser.org
6. Ahmad F.U & Jahan S.M. (2016). Light Engineering Business Ecosystem in Bangladesh: A Study on Institutional Preparedness. IOSR Journal of Business and Management, 18(12), Ver. III, pp. 16-26
7. www.smef.org.bd/v2/index.php/sme-foundation
8. https://www.thedailystar.net/country/bangladesh-light-engineering-sector-product-of-2020-1848043
9. http://bida.gov.bd/?page_id=2306

Assessing Return on Investment of Organized Furniture Companies in Bangladesh: A study on Marketing Campaign of Otobi Limited

Salehin Chowdhury[1]
Md. Anisul Islam Sajib[2]
Nazmun Nur Eva[3]

Abstract: *In different marketing campaigns of Otobi Ltd. furniture industry there has been lot of investment over years but there was no proper defined format of accountability on the part of marketing functions to judge the outcomes of their investment. The paper is designed to showcase the decision making process for a marketing campaign and how ROI plays a key indicator for success. Bangladesh's furniture industry is highly saturated and competitive thus measuring the financial profitability is vital for survival. The study will show the process of how a marketer is planning a forecasted ROI for a campaign and how it impacts by the end of the campaign.*

Keywords: *ROI, Marketing Promotion, Metrics, Branding, ATL, BTL*

1. INTRODUCTION

In past, the furniture industry in Bangladesh has been treated as a cottage based industry and since early 90's the furniture industry in Bangladesh has break the traditional concept and turned out to be one of the promising industry with full mechanized mass production facilities. Since then, this industry has begun its development using diverse materials, creative and innovative designs and modern machinery. Right now, Bangladesh has become a role model in producing international standard and quality furniture all over the world. And there is a bright potential for export of furniture and Bangladesh's furniture industries are ready for that. With net export earnings of approximately $75 million in FY 2018-19, furniture export increased with a huge boost on a year-on-year basis. According to the Export Promotion Bureau (EPB), the furniture sector has achieved export earnings of $5.10 million in July in FY 2019-20. This was up from $4.65 million recorded for the

[1] Lecturer, South Asia School of Business, University of South Asia.
[2] Assistant Professor, South Asia School of Business, University of South Asia.
[3] Lecturer, South Asia School of Business, University of South Asia.

same period in the previous fiscal year, thus recording a robust growth of 9.68 percent. As the day progresses in this promising industry, which has every possible opportunity to be on par with RMG in export and employment, the competition is becoming tougher and tougher. As the market is dominated by numerous micro and small scale organizations (approximately 70,000 units associated with furniture manufacturing as well as backward and forward linkages) while there are more than eighty medium and large scale organizations that are dominating the cities, especially in Dhaka and Chittagong. Among these organizations' the management is likely to invest more in different parts of the business. As a result there has been a continuous pressure for improving sales and retain their profit margin at the expected level.

For facing such huge competition in this furniture industry, organizations are investing a good amount of money on various marketing campaigns to boost up their sales. It has been found that around twenty to twenty five percent of the expenditures of many organizations are related to marketing (Mishra *et al.* 2011) hence making it a target interest of senior management and board members. Earlier, marketing investment in any sector was treated as spending but now a day it has been taken care of as investment. The top management of this furniture industry is doing the same. So it is high time for this industry to measure the ROI against investment made in marketing campaigns. Marketing ROI helps an organization in six possible ways. i.e.- a) it supports creative thinking, b) compare diverse marketing opportunities, c) improve campaign and customer profitability, d) streamline decision making, e) be viewed as an investment instead of an expense, f) create winning strategies (Lenskold, 2009). Every business organization is very much concern about earning profit and thus everything should be financially accountable (Srivastav et al.1998; Lamberti & Noci 2009; Ambler & Roberts 2005; Ringham 2005; Berger et al.2006). In marketing there has been lot of investment over years but it's still difficult to justify it in the balance sheet of the company. In this paper, we are exploring the approaches towards marketing ROI that can be used by furniture industry of Bangladesh. It is obvious that earlier there was no liability on the part of 'marketing activity' like Sponsorships, Branding, Advertising, Sales promotion etc. but now organization has started thinking towards marketing accountability seriously. Major problem faced is that marketing does not having any common method or standard to measure financial marketing outcome as there is difference in approaches and operation of business organizations.

Marketing activities always tried to justify their efforts by saying that brand awareness, brand loyalty has been increased and reflecting same on non financial outcomes like brand index, brand equity and talking about increased brand awareness, but this has not been made them more liable or accountable that is why marketing function executives are losing their credibility and are unable to give any financial outcome which is significant in today's world. Intangible promises have been made but still it was not calculated to prove them, only 17% of marketers could succeed to measure real outcome or return on their marketing investment and they are having comprehensive method or system to measure MROI (Stewart 2009).

2. OBJECTIVES OF THE STUDY

In this paper we try to find out what are the approaches are adopted by marketing executives of furniture industry to manage marketing action and to make it more financially accountable. What kind of marketing activity they have and how they are involved to manage return on investment at local or territory level. Following are the objectives of the paper:

- To assess marketing activities adopted by the company.
- To evaluate the Marketing Promotional ROI measurement approaches adopted by the company
- To evaluate financial implications of the methods and approaches adopted by the company as above.

3. LITERATURE REVIEW

The ability to measure marketing performance has always been a major concern for among the CEOs and top executive of any industry. It is found that ability to measure marketing performance effects marketing functions as well performance of the CEOS of the company (Sullivan 2007; Rust *et al*. 2004). "Pressure is being place on marketing to justify their expenditure and translate them into likely financial outcome, which is the language of business firm" (DW. Stewart 2008). In 2002 a study of marketing executives for ROI said that it was biggest challenge in front of marketing executives to find out return on investment (ROI) or how to measure ROI against marketing activities (Accenture's Insight Driven Marketing report 2001). The study listed the four most prevalent metrics that marketers use: Response Rate (79%), Revenue Growth (78%), Customer Retention (69%), and Profit Generation (69%). That leads into a question that whether these achievements are due to mainly marketing promotional efforts or by other marketing functions. As the sales and service team both claims credit for the same for which marketing could have claim. So it is difficult to find out whether an increased sale is due to the promotional effort or due to the effort of sales team or by customer care team or efforts of channel partners. 90% of marketing executives wants to measure marketing ROI and 80% out of them are not having any method to measure. It is the biggest challenge for marketing executive managers and is matter of concern for them to justify their marketing investment so that further budget could get approve and could justify their role in the organization. The current tools are not capable enough to calculate marketing ROI and marketers are forced to apply it as they are not having any universal method to measure marketing ROI (Philip Kotler, 2004). Though ROI is a critical measure for marketing, but maximizing ROI does not mean maximizing profit all the time (Lenskold 2009). Companies have been observed to focus more on short term goal or ROI not for long term ROI as it is very critical to measure the ROI for long term impact like customer satisfaction, brand building, corporate image & customer satisfaction, even these are also very important activities which help to gain profit in long term.

As per by Lenskold (2009) ROI can be measured & justifying by considering theses three components; Customer life time value, Total number of customer, Marketing expenses.

Customer life time value is net present profit generated from the customer against the marketing investment and it captures buying behavior of the customer which can be valuable measurements for the marketing investment.

Total number of customer is number of customer retained or added or generated due to marketing activities. This is basically lead generated from the marketing activities or number of customer interacted on that basis we can calculate number of sale generated and customer added. Theses customer interaction could help to compare the outcome with other marketing activities, through which it is an easy to know the impact of these marketing activities. With help of customer life time value and number of customer we can calculate cost per sale and lead generated and converted and can make benchmark for performance improvement.

Anne Klein (2003) says that Marketing ROI is best tool to find out best place to invest in marketing. It is difficult to calculate ROI as it is very difficult to track (Klein. *et al.* 2003). MROI start from your campaign and need to track response around the campaign. Once tracking system is developed well to know about the response in terms of revenue or in terms of awareness then the next step is to calculate the following variables:

- Expense of the program
- Revenue generated
- Profit earned
- Contribution margin

It is important to note that though marketing activities has both short and long term gains the business organizations mostly emphasize on calculating the short term gains not long term gain (Seggie *et al*.2007). The management should also focus towards on long term gain as it gives more wealth for business organizations. It is not easy to calculate brand image or loyalty of customer which do not change in shorter period of time as yields financial outcome later by increasing customer retention and acquisition (Mark Solcansky, 2010). David Stewart (2009) argues in his research paper that the marketing ROI has been major concern for each and every business organization as well as for academician. There has not been yet developed any standard methods or metrics to calculate marketing ROI .David finds in his study that each and every organization have its own method of calculating marketing ROI or return on Marketing investment, but in most of the cases 70% of Marketing officers could measure to short term impact of marketing activity not for result which is expected to after some period of time. He also categorized marketing ROI basically two categories:

- Short term performance evaluation
- Long term performance evaluation

Short term effect of marketing activity can be generated with help of promotional campaign like price discount or on spot sale which can be calculated either in case of long term impact of marketing like Branding; ATL (Above The Line) etc. It is not easy to calculate as such campaign as they cannot yield result instantly.

From the table 1 of the concept matrix we can understand the number of research and studies has been done in the area of Marketing ROI and Marketing Performance Measurement, it is suggested that numerous methods and approaches has been defined to make marketing more financially accountable.

4. RESEARCH METHODOLOGY

Case Study Approach: Explanatory case study methodology has been adopted to examine and verify the current status of Otobi Ltd's marketing campaign success measurement in Bangladesh. Company in Consideration: the company in consideration is Otobi Ltd. which is one of the leading furniture companies of Bangladesh. It has 35% market share among the branded furniture enterprises of the country. The company is operating through 10 retail showrooms and 60 exclusive dealer outlets all over Bangladesh. The marketing organization chart is explained in figure 1.

The furniture industry of Bangladesh consists of two types of sectors, organized and unorganized sector. The organized sector includes branded furniture and unorganized sector include roadside and informal seller. The rapid growing furniture sector of Bangladesh constitutes approximately 70,000 enterprises all over the country. As they are performing various marketing campaigns to boost up their overall sales and profit, ROI is playing a vital role for measuring those marketing campaigns. ROI can be calculated in simplest form:

$$\mathrm{ROI} = \frac{(\text{Net Present Value of Profits \& } \mathit{Expenses} - \text{Investment})}{\text{Investment}}$$

Let's say, Otobi in a campaign duration invested Tk 75,00,000 in marketing spending and generated Tk 1,50,00,000 in revenue from different channels. Then the ROI would look like this:

$$\mathrm{ROI} = \frac{(\text{Tk } 1{,}50{,}00{,}000 - \text{Tk } 75{,}00{,}000)}{\text{Tk } 75{,}00{,}000}$$

If the answer then multiplied by 100 to get a percentage, then the ROI will be 100 percent. Here investment represents marketing expense & NPV profit & expenses is resulting flow of profit and expense.

5. RESEARCH FINDINGS

As it has been said earlier the prospect of this industry is very lucrative and prominent more and more investment is coming in this industry hence making anyone's market share more vulnerable. As a result, marketing executives mostly from organized furniture industry are very much concern about their marketing campaigns thus measuring performance of their campaigns.

Budget has been allocated from the corporate office of the business organization on campaign basis and allocation is based on the possible lead generation from the marketing activity. Responsibility of the campaign manager towards a campaign of the company includes:

- Promotion of the brand and product.
- To ensure the proper utilization of the branding material and also the placement of the branding items, so that it reaches its target segment.
- Organizing territory wise BTL activity identifying location, costing and advertisement and below the line support.
- Actively involved in media negotiation and planning.

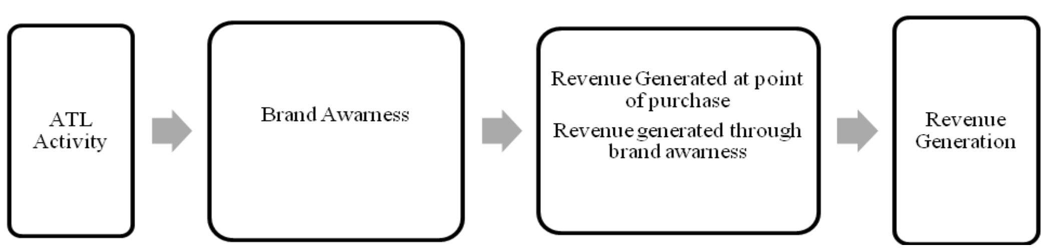
- Devising & implementing pre & post marketing activities for successful launching of new products.
- Ensuring maximum return on investment against marketing and communication activities.

6. PROPOSED MARKETING ACTIVITY AND FREQUENCY

Marketing executives were involved in planning and implementing following activity even these activities were below the line in nature (BTL), BTL communications is used by the organizations to build brand as well as to create awareness amongst the consumer or in market, gives the marketer the ability to tailor their messaging in a more personal manner to the audience. BTL promotions are highly measurable, giving marketers valuable insights into their return-on-investment. In the table 2 it is clearly mentioned that for which activity they could be able to measure ROI or they have some method or process to calculate ROI against theses activity. We can also understand that they have some methods to measure ROI for all the five major marketing activity.

Proposed Measurement Methods:

1. ATL activity outcome and its measurement process diagram: ATL stands for "Above The Line", meaning the advertising is going to be arranged around a wider target audience. e.g. Newspaper, television, radio or billboards. It is applicable when the message is for a broader range of consumers. In furniture industry, ATL activity is quite common as it is a regular marketing spending for any organization. It is quite difficult to measure the ROI for any ATL marketing while ATL is mainly used for Brand awareness and measuring the performance of the brand happening only through ATL.
   Objective:
   a) Increasing Brand visibility.
   b) Increasing Brand visibility.



ROI calculation for ATL marketing activity: Measuring ROI of ATL activity is not an easy one to do. Enterprises can follow the following method for their effective outcome.

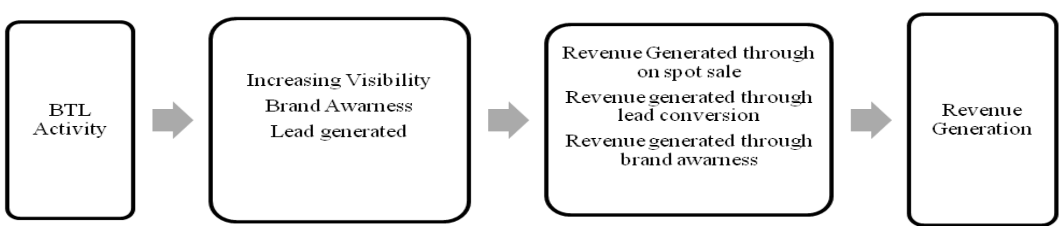
{Average incremental sale generated for two months after ATL activity at point of sales / Total investment for the ATL activity} + Incremental retailers participation (Non financial but as the number of retailers will added in distribution network revenue will grow).

If we take an ATL activity of Otobi Ltd., a 40 CI advertisement on the first page of the newspaper will cost BDT 6,00,000. If the newspaper has a daily coverage of 3,50,000 pcs and it is assumed that each paper is read by 3 persons then the coverage will be reached upon 11,50,000 persons per day. If we take 0.5% conversion rate and assume that average ticket size is BDT 1,000 then the sale will be increase by BDT 57,50,000. If the average net profit is 20% on sales then the revenue will be BDT 11,50,000 and the ROI on this ATL activity will be 192% .

2. BTL activity outcome and its measurement process diagram: BTL or "Below The Line" suggests that the advertising is going to target a specific group of potential customers. Marketers take various BTL activity such as, Banner, Festoon, X-stand, Dangler, Leaflet, PVC banner both given in show room and for distributor.

   Objective:

   a) Increasing visibility
   b) Brand awareness
   c) Lead generation



ROI calculation for BTL marketing activity: As BTL activities for any marketer is quite common function to perform, hence the ROI can be calculated to measure the performance of their campaigns.

{Incremental sales from previous year's campaign – Investment made on BTL activity / Investment made on BTL activity}

If we take an example of a BTL activity of Otobi Ltd. having 70 showrooms with a regular walk in customer of 200 per day. For BTL marketing campaign, Otobi Ltd. has made an investment of Tk 3,50,000 for 70 showrooms. After applying BTL when the visibility increases to the customer, the regular walk in customer increases to 400 per day during campaign. So, it enhances 200 extra customers through BTL activity. If we consider the conversion rate of 10% then the lead generated through BTL activity stands 20*30= 600 customers per month. If the average ticket size is Tk 1000, then the sale increase by Tk 6,00,000. We can calculate the ROI using the formula:

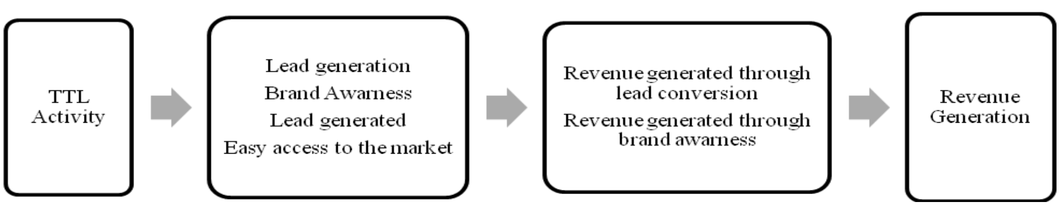
$$\text{ROI} = \frac{(\text{Tk } 6{,}00{,}000 - \text{Tk } 350{,}000)}{\text{Tk } 3{,}50{,}000}$$

So, the desired ROI for BTL campaign of Otobi is 71.42%

3. TTL activity outcome and its measurement process diagram: TTL stands for "Through The Line". TTL is an integrated approach for ATL and BTL marketing effort for the organization. TTL can be used with using Bulk SMS, Google My Business, Facebook boosting, Animation video etc.

   Objective:

   a) Lead generation
   b) Query response
   c) Brand awareness
   d) Easy access to the market



ROI calculation for TTL marketing activity: Now a day every potential consumer using internet through their gadgets. Taking this scenario into consideration the marketing managers often try to promote their product and service through TTL. Hence the measurement of such campaign is also very important. It can be measured as:

{Incremental sales through lead conversion and brand awareness / Spend on TTL activity}

Let us suppose Otobi Ltd. invests Tk 50,000 in TTL activities for the purpose of increasing sales and brand awareness. If this campaign engages 1,00,000 potential customers and suppose the conversion rate is .2%, then out of these 1,00,000 engagement, the new customer is 200. If the average ticket size is Tk 1000, then the sales increase by 200*1000 = Tk 2,00,000. So the ROI for TTL activity is 300%.

Synthesized findings of the study: Following findings can be drawn:

- Result for the enhancement of Brand image can't be measured.
- No proper standards have been maintained by the marketing executives to measure marketing performance of their campaign.
- Short term evaluation of Marketing ROI.
- Incremental sales can be the result of other department's activities of an organization.

7. MANAGERIAL IMPLICATIONS

As discussed with marketing executives of the leading furniture company following implications have been found while calculating marketing performance measurement.

Budgeting	Budgeting is measure major issues and company is focusing more on cost cutting rather spending more which has directed marketing towards being more financially accountable, earlier budget were allocated annually basis and end of the year manipulations have been made to justify outcome of the marketing initiatives.
Available Methods	No standards methods are available through which ROI can be calculated for distinct marketing activity as there are sometimes common scenario for different marketing projects.
Frequency of Activity	Frequency of activity is another constraints for marketing to calculate ROI, focus shifted from one activity to another activity and pressure generated to justify the current activity and so on which in case lacks focus towards marketing performance measurements.
Lack of proper planning	Most of the marketing activity initiated due to pressure generated by sales team where there is focus only activity initiation and implementation rather planning.
Functional Issues	Sales have been increased drastically after three or four months of the activity without any promotion which may in case result of earlier marketing action.
	60% of generated lead has been converted within two or three months of the activity started & that is considered not as a part of MARCOM initiative and added in sales account.

8. RECOMMENDATIONS

In current day's context and considering the nature of Furniture industry, the scope of ATL remains into the conservative end; it more works as a mare tool for Brand Building and Brand recall. An effective Communication strategy to maximize ROI from different campaigns can be availed through a comprehensively integrated campaigns run by the BTL & Digital tools. Smart content and themes do play a role on furniture market with an undeniable reality of efficient product designing and adaptation of these lifestyle products on current context. Also a comprehensive Distributor Management System & Incentives/ Discounts should collaborate with the Measurement and Maximization of ROI.

9. CONCLUSION

From the above discussions we can understand that marketing ROI has been measure concern for marketers as increasing scrutiny of marketing activities has increased their demand. The approach in consideration of the given company is applicable only for the companies which is having organized branded enterprises at operational and functional level. The measurement is based on by assuming a certain baseline in given time frame, and which is more of giving short term conversion, longer impact of marketing actions is still difficult to measure and which is further are of research.

REFERENCE

1. Mishra, S. and Mishra, M. (2010). Current industry approaches towards Marketing ROI an Empirical Study. *European Journal of Business and Management*, Vol 3, No.6, Pp-86-101
2. Srivastava, R. K., Tasadduq A. S. and Liam, F. (1998). Market-Based Assets and Shareholder Value: A Framework for Analysis. *Journal of Marketing*, Vol.62, pp.2-18.
3. Lamberti, L. and Noci, G. (2009). Marketing strategy and marketing performance measurement system: Exploring the relationship. *European Management Journal*, Vol.28, pp.139-152.
4. Ambler, T. and Roberts, J. (2005). Beware the silver metric: Marketing performance measurement has to be multidimensional. *Center for Marketing Working Paper*. No 05-709.
5. Ringham, L. (2005). Return on marketing investment: A practical end to end approach for linking marketing investments to shareholder value: White Paper. *Australia: Knowledge Management.*
6. Berger, P. D., Eechambadi. N., George Morris, Lehmann, Donald R., Rizley R. and Venkatesan R. (2006), From Customer Lifetime Value to Shareholder Value: Theory, Empirical Evidence, and Issues for Future Research. *Journal of Service Research*, vol.2, pp.156-167.

7. Stewart, D.W. (2009), Linking marketing Actions to financial outcomes, *Journal of Business Research*, Vol.62, pp.636-643.
8. Sullivan. D. O. and Abela, A.V. (2007), Marketing performance measurement ability and firm performance, *Journal of Marketing*, Vol.71, pp.79-93.
9. Rust R.T., Roland T., Lemon, Katherine N. and Zeithaml, V. A. (2004). Return on Marketing using Customer Equity to Focus Marketing Strategy. *Journal of marketing*, Vol.68, No.1, pp.109-27.
10. Stewart, D.W. (2009). Linking Marketing Actions to Financial Outcomes. *Journal of Business Research*, Vol.62, pp.636-643.
11. Kotler. P., (2004). A three-part plan for upgrading your marketing department for new challenges. *Journal of Strategy & Leadership*, Vol. 32, pp.4 – 9
12. Klein . A. and Swartzendruber. T. (2003). A user’s guide to marketing ROI: White Paper. *American Marketing Association*.
13. Seggie. S. H., Cavusgil. E and Phelanetl. S. (2007). Measurement of return on marketing investment: A conceptual framework and the future of marketing metrics. *Industrial Marketing Management*, Vol.36, pp.834-841.
14. Solcansky. M. and Simberova. I. (2010). Measurement of marketing effectiveness. *Economics and management*, pp.755-759.
15. Databd.co, (2019). Databd’s official website [online] Available at https://databd.co/profiles/industries/profile-timber-and-furniture [accessed 20 December, 2019]
16. Wikipedia.com, (2019). Wikipedia’s official website[online] Available at https://en.wikipedia.org/wiki/ATL_%26_BTL_Agencies [accessed 22 December, 2019]
17. Lenskold, J. D. (2003). *Marketing ROI: the path to campaign, customer, and corporate profitability*, Mcgraw-Hill Education

Appendix:

Figure-1: The Marketing Organization Chart of Otobi Limited.

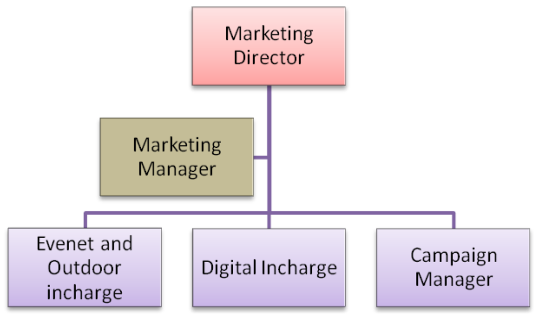


Table-1: Concept Matrix of ROI.

Author	Topic								Approaches					
	Marketing ROI using Customer equity	Customer Life time value	Marketing ROI using share holder value	Financial outcome of Marketing	Long term and Short term evaluation of Marketing	Marketing performance measurement	Marketing ROI industry specific companies	Non Financial outcome of the Marketing	Markov switching Matrix	Shareholder value	Balance scorecard	Marketing intermediary	Budget allocation	Return on Customer (ROC)
Kaplan Norton et al. (1996, 2001)	N	N	N	Y	N	N	N	Y	N	N	Y	N	Y	N
Srivastav et al. (1998)	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N
Almquist & Wyner (2001)	N	N	N	N	N	Y	N	N	N	N	N	Y	Y	N
T Rust et al. (2004)	Y	N	N	Y	N	Y	N	N	Y	N	N	N	N	N
Ringham (2005)	N	N	Y	Y	Y	N	N	N	N	Y	N	Y	N	N
Ambler & Roberts (2005)	N	N	N	Y	N	Y	N	N	N	N	N	N	N	Y
Paul. D. Berger et al. (2006)	N	Y	N	Y	N	Y	N	N	N	Y	N	Y	N	N
Seggie et al. (2007)	N	Y	N	Y	Y	Y	N	Y	N	Y	Y	Y	Y	N
Stewart (2009)	N	N	N	Y	Y	Y	N	N	N	N	N	Y	N	N
Lamberti & Noci (2010)	Y	N	N	Y	N	Y	Y	N	N	N	N	N	Y	N

Table-2: Activities that can be measured by ROI.

Sl No.	Marketing Activity	Frequency	ROI Measures
1	ATL Activity	Once in a quarter	Yes
2	BTL Activity	Once in every two months	Yes
3	TTL Activity	Once in every two months	Yes

Trends of Information Technology and IT-Enabled Services Outsourcing in Bangladesh

Atikul Islam Liton[1]
M Ashikur Rahman[2]

Abstract: *Information Technology-Enabled Services (ITeS) need greater comprehension as the global economy becomes more and more service-oriented. IT offers a growing number and variety of services. In addition, IT allows the development of new services previously untouched in diverse fields. Today, ITeS has been more than outsourcing services because of the catalysing aspect of Intenet technology. This article illustrates the enabling nature of ITeS with its entailment of IT, thus contributing to the betterment of humanity. The scope of this paper is not only for academia but also for everyday people in business, government practitioners and readers. In various fields, such as trade, banking, medical services, Government and education, writers from a range of nations and regions with diverse backgrounds provide insightful theories, studies, observations and practices. Through the application of Internet-based activities in business, Government and everyday life, this book opens up a new horizon. For those who sail to the new frontier of service-oriented economies, Information Technology-Enabled Services acts as a navigator.*

Key words: *Information Technology, Outsourcing, ITeS, Bangladesh.*

1. INTRODUCTION

Information Management is a service allowed by information technology that helps the organization to increase service quality (ITeS). ITeS is often referred to as web-enabled services or remote services that cover all activities that use information technology to increase an organisation's effectiveness. These services provide a wide variety of job choices, including opportunities in all offices, such as call centers, payrolls, logistics management, processing of income claims, medical billing, coding, medical transcription, legal databases, back office operations, content creation, GIS (geographical information system), web services and services for human resources (HR), etc [1]. ITeS is characterized as the outsourcing of information technology processes that covers various

[1] Faculty, Department of CSE, University of South Asia, Banani, Dhaka-1213.
[2] Assistant Professor, Department of CSE, University of South Asia, Banani, Dhaka-1213.

areas such as finance, HR, administration, health care, telecommunications, development, etc. According to the ICT Industry White Paper 2017, over 1,500 IT companies are flourishing in Bangladesh and can largely be classified into three groups; those specializing in customized software and application development (55 percent) and ITES/BPO (17 percent) and those with multi-functions (34 percent). More than 400 IT companies currently export to over 60 countries, with main clients being the United States and the United Kingdom [2]. ITeS provides end-users with multiple services built into a single distribution mechanism. The services may include Medical Transcription, Customer Relationship and Management, Data Entry and Data Processing, Software development, Data Warehousing, IT desk services, Enterprise Resource Planning and Telecommunication Services [3].

2. LITERATURE REVIEW

Outsourcing IT and IT Enabled Services (ITES) is relatively a new business sector in Bangladesh. Over the past few years, rapid growth has been seen in this market. This is due to the steady growth in the IT outsourcing industry worldwide. However, the global economic crisis has led to a reduction in IT budgets for corporate enterprises. While demand for global outsourcing of IT services has been steadily increasing, cost optimization is the primary driving force of this impulse. With new service delivery paradigms, including cloud computing and multiple outsourcing, elevated costs are expected to change the outsourcing industry globally. ICT is the cornerstone of every digital effort which encompasses a broad variety of Information & communication Technology (ICT), networking and telecommunications technologies [4].

The country is successfully leveraging this rising industry and has earned $800 million in 2017 by exporting ICT products and services (BASIS, 2020). According to Bangladesh Bank sources, the ICT sector in Bangladesh comprises of Hardware division holding 65% of market share, and Software division holding 15% of the total market. The ITES 15% and Internet and Network Services 5% covered the rest of the market share. Similarly, the local entrepreneurs of IT are always looking for international opportunities to leverage the global trend of IT business. As a result, Bangladesh now has become one of the most prospective outsourcing platforms in the world [5].

The PMO's Access to Information (A2I) program has developed the portal incorporated websites of 4,550 union offices, 14,640 Upazila offices, 4,032 district offices, 455 divisional offices, 64 district council offices, 488 Upazila Parishad offices, 55 ministries and divisions, 345 departments, and 414 city or municipal corporations. It contains 20 lakh contents, more than 40,000 images, information of all the educational institutions, governmental organizations and their contact persons, government gazette and forms etc

[6]. In 2017, the sector produced an estimated annual revenue of USD 1.0 billion, expected to increase to USD 4.7 billion by 2025 (Everest Group 2017). In FY2016-17, export earnings have increased steadily to USD 200 million (BASIS). Revenue from the industry is mostly produced by software development and ITES. ITES, like BPO, contributes to over half of BASIS' total sales [3].

The objectives of this study, by considering the above scenario, are stated below.

- To evaluate the present status and trends of IT/ITES in Bangladesh
- To explore potentials and export opportunities
- To analyze SWOT of the IT and ITES Services Outsourcing
- To identify constraints and opportunities of IT/ITES in Bangladesh

3. RESEARCH METHODOLOGY

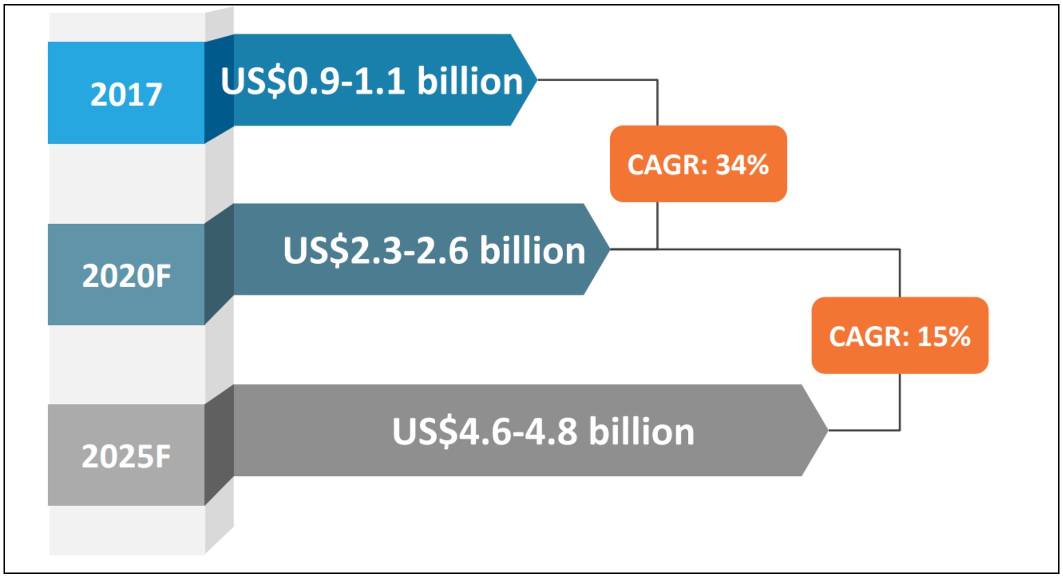
The research began with an examination of current literature. Primary data was gathered by assimilating responses from 25 IT professionals who were presented with standardized questionnaire followed by interviews. There were interviews with fifteen freelancers and ten IT/ITES entrepreneurs. Secondary data was collected from written documents, journals, legal and policy-related reports, BASIS, BBS, NBR, EPB, etc. Tabular and graphical studies have been conducted to derive the outcomes and make suggestions accordingly.

The researchers had to face a lot of obstacles during the entire duration of the study. The most significant drawback is that full national statistics are inaccessible. It has been found that various statistics from different sources are available. There is also a disparity in these figures owing to the use of various data collection methodologies. Needless to say, there is no single source for these statistics to be obtained. The limited research budget was another big drawback. Owing to budget constraints, the study team recruited only three data collectors. . They were not able to cover all the districts of Bangladesh for data collection purposes.

4. FINDINGS AND ANALYSIS

4.1 Current trends of IT& ITES Industry in Bangladesh

There are various types of research, reports and analysis in Bangladesh about IT and ITES services as well as outsourcing. Outsourcing as a possible field for Bangladesh to pursue was exposed in these studies with various goals and perspectives. These studies address issues such as the global outsourcing trend, Bangladesh's position in this sector, the current potential and threats to Bangladesh, etc. Basically, these documents provide a clear context to understanding this field for an in-depth review of government policy recommendations.



Source: Everest Group Research 2017

Figure 1: Bangladesh IT services (ITeS) industry domestic market size.

4.1.1 BPO Services

Business Process Outsourcing (BPO) services include the execution of business activities by an external supplier of services. As BPO plays a significant role in improving business efficiency, BPO is also included in IT services. The BPO industry is highly organized, and hence various kinds of jobs are outsourced in Bangladesh. Bangladesh has expertise in reducing costs with a firm control on the quality of the service [7].

4.1.2 BPM Industry

The IT BPM (Business Process Management) sector has been fueling the development of Bangladesh. In addition to contributing to the country's Gross Domestic Product (GDP) and exports, the growth of the IT-BPM industry has provided a wide range of economic and social benefits to Bangladesh, including job creation, increased income levels and promotion of exports. It has put Bangladesh on the world map with a picture of a knowledge-based and technologically advanced economy. This sector is one of the most massive ventures capitalist investments and has been credited with facilitating the entrepreneurial projects of many in the nation. In terms of revenue and contribution to Bangladesh's GDP over the last decade, the IT-BPM industry has almost doubled [8].

4.1.3 Software and ITES Industry in Bangladesh

According to a BASIS poll, there are over 800 registered software and ITES (IT Allowed Service) companies in Bangladesh. There are a few hundred other unregistered small and home-based tech and IT companies doing business in both local and international markets. Figure 2 shows the Bangladeshi Tech and ITES Industry's share of the enterprise, sales, total human resources working in the industry and industry revenue [6].

4.1.4 Software and ITES Industry in Bangladesh

According to a BASIS poll, there are over 800 registered software and ITES (IT Allowed Service) companies in Bangladesh. There are a few hundred other unregistered small and home-based tech and IT companies doing business in both local and international markets. Figure 2 shows the Bangladeshi Tech and ITES Industry's share of the enterprise, sales, total human resources working in the industry and industry revenue [6].

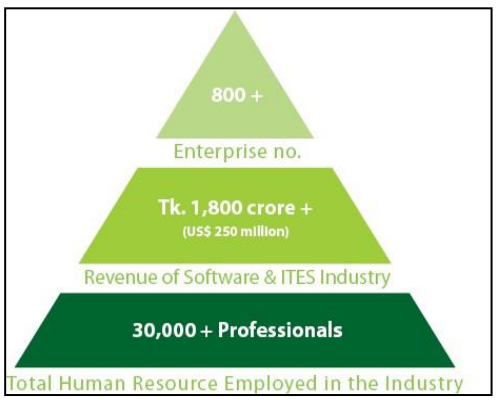


Figure 2: Structure of Software and ITES Industry

It is estimated that the total industry size is around Tk. 1,800 crore (250 million US). In this sector, approximately 30,000 professionals, mainly IT and other graduates, are employed. Although the contribution to overall job creation is not significantly high compared to other conventional mainstream industries, the software and IT service industry is one of the top graduate employment sectors in the country when viewed in terms of generating high-quality employment (average monthly salary over Tk. 15,000 per month). According to a new survey conducted on three hundred of its member companies by BASIS. The analysis was performed on the essence of the industry, the volume of business and the size of businesses. About 70 percent of businesses are found to be interested in software creation and maintenance for their customers. A number of them are also active in providing their clients with various IT-enabled services at the same time. Almost half of the companies surveyed engage in the provision of a variety of IT-enabled services (data/form processing, graphic/web design, content management, etc.) in total [9]. People or staffs are the main strength of Bangladesh in outsourcing these services. Bangladesh is considered a lucrative place by the skilled, trainable and young workforce who can acquire the requisite skill sets to succeed in the global scenario. On the other hand, the ICT sector has been designated a 'thrust' sector by the Bangladesh government. The establishment of a separate Ministry of ICT (Ministry of Science and Information & Communication Technology), the formulation of favorable legislation and the implementation of Government IT projects are encouraging measures for local/international investors in the Bangladesh ICT industry. In addition to policy growth, the Government maintains close contacts with various industry organizations such as BASIS, BCS, BCC and ISPAB, some of the primary bodies in Bangladesh working to boost the ICT industry. There is no doubt that all of these initiatives together build and create a more pleasant atmosphere to explore the existing potential of Bangladesh's IT and IT Allowed Services Outsourcing [8].

4.2 Opportunities and Challenges of Information Technology Enabled Services

An increasingly competitive environment is being created by changing economic and business conditions, rapid technological advancement, the proliferation of the Internet, and globalization. Technology's position has evolved from helping to transforming businesses. In order to satisfy their need for high quality and cost-competitive technology solutions, multinational businesses are increasingly turning to offshore technology service providers. As such, in an attempt to build and maintain a smooth, profitable, sustainable and scalable company, a business may face a wide range of risks and challenges [10]. Some of the problems confronted include:

- Ability to build and sustain a truly world class global distribution model that would allow a company to offer the best shore-based services to customers. This will entail round-the-clock delivery capabilities across several time zones, access to a wide pool of highly qualified technology practitioners and a system of knowledge management to reuse solutions where appropriate.
- In order to help customers gain market differentiation or competitive advantage and thus capture a greater share of the technology budgets for customers, build and extend a reliable, comprehensive, best in class end to end solutions and service offerings
- Ability to scale as the probability exists. This will entail continuous infrastructure improvement and the accelerated recruitment, training and deployment of new professionals.

- During the economic downturn, control sales and spending, increase a company's capacity to withstand market pressures, commoditization of services and lower usage rates
- Managing fluctuations in exchange rates and counterparty risk in treasury operations
- To eliminate reliance and the risk of losing significant market share, extend customer list across business verticals.
- Maintain superior and advanced project management methodology in line with global quality standards and ensure timely, reliable and precise implementation to achieve the highest level of customer satisfaction.
- Ensure the effective incorporation of the organization’s inorganic growth opportunities through geographies from time to time [11].

4.3 SWOT Analysis of the IT and ITES Services Outsourcing

SWOT analysis is a strategic method of planning used in a study or project to determine the strengths, limitations, opportunities and risks involved. It requires determining the goals of the study to determine the external and internal variables that are beneficial and unfavorable to achieving those goals [12].

Table 1: Internal analysis of Strengths and Weakness of the IT and ITES services

Strengths	Weakness
▪ Demographic Dividend ▪ Lower cost of doing business compared to other competing countries ▪ Availability of Skilled workforce ▪ Time zone advantage ▪ Incentives took by Government in terms of Tax and other benefits ▪ Bangladeshi students studying overseas in IT-related subjects ▪ Bangladeshi skilled professionals are working abroad. ▪ The increasing number of Bangladeshi university graduates in IT-related subjects ▪ Cost value proposition ▪ In contrast to other similar outsourcing destinations, English performance ▪ In all global IT programming, competition, fast learners and adopters of new technology, the Bangladeshi participants do well. ▪ Friendly Govt. Policy	▪ Absence of comprehensive laws and legislations ▪ Lack of proper exposure to international markets ▪ Image Branding ▪ Local Infrastructure for IT and ITES ▪ Untapped market in terms of supply perspective ▪ Cultural difference ▪ Inadequate Government incentives for IT industry growth ▪ Lack of fluency in non-English languages like French, Spanish, Italian, etc. ▪ Limited Domestic Market

A study of SWOT helps to elucidate competitive benefits. The following strengths, drawbacks, opportunities and risks to be considered for future policy changes are shown in the SWOT review of the IT and ITES services outsourcing sector:

Table 2: Internal analysis of Opportunities and Threats of the IT and ITES services

Opportunities	Threats
▪ Governmentt initiatives ▪ Low wage level ▪ Political stability ▪ Exploring Foreign Market ▪ Sufficient Workforce ▪ Growth of matching outsourcing market ▪ The huge number of Educational Institutions offering IT related courses ▪ Advantage on the time difference ▪ Identified by the Government as Thrust Field. ▪ The capitalization of NRBs employed in the high-tech sector overseas ▪ ICT users are rising quite rapidly ▪ Stable growth local and regional market ▪ Outsourcing business segment left by India, etc. as they shift towards higher segments	▪ Absence of comprehensive laws and legislations ▪ Lack of proper exposure to international markets ▪ Image Branding ▪ Local Infrastructure for IT and ITES ▪ Untapped market in terms of supply perspective ▪ Cultural difference ▪ Inadequate Government incentives for IT industry growth ▪ Lack of fluency in languages other than English like French, Spanish, Italian etc. ▪ Limited Domestic Market

4.4 IT and ITES Challenges faced by Bangladesh

The power outage is a topmost obstacle problem in this computer driven sector. The operation of the business requires an uninterrupted supply of electricity. Electricity load shedding is a common constraint for all industries. Therefore, high electricity load shedding force enterprises to use alternative power supply like generators which increase costs. Another big concern is Foreign Exchange Management strategy. This strategy hinders businesses when it is necessary to pay for the importation of software, books, etc. Businesses are also worried about the cost of the Internet. Many developers claim that Internet prices are much higher than those of other competing countries. Lack of Country Image or Branding Promotion is one of the significant issues that many entrepreneurs believe is fixed. It is important to note that the slogan of Digital Bangladesh has dramatically promoted the image of the country in the IT market. A further Branding Strategy is required now. Access to finance is another significant problem. Loans from banks are difficult to obtain. Information on 17 companies reveals that at the beginning of the operation, only one of them took bank loans. The performance of the service sector is not as evident as the goods industry, which is a real issue. Moreover, companies still lack sufficient financial reporting, which further discourages bankers from offering loans. Any organization has hardly achieved business growth from bank loans [13]. In particular, for programmes that need specialized skills, manpower is another issue. Many businesses claim that due to lack of funding, they could not expand. One of the main challenges facing the IT/ITES industry in Bangladesh is the high turnover of employees, especially in highly skilled sectors such as software development. There is an increased and consistent demand for IT/ITES experts in developed countries. The visa requirements in countries like Canada, USA, UK etc. is much more lucrative. So, experts are migrating from Bangladesh to developed countries for higher education, better earnings as well as standards of living [14]. The private sector also needs to play their role to retain their skilled employees by a better working environment. Introduction of post-retirement benefits like provident funds, standard salaries and other compensation packages like profit bonus, lunch, medical allowance etc [15]. There is also a shortage of suitable facilities. While the Government provides high-tech parks and other facilities, companies need to get adequate incentives and promote the socio-economic environment around such parks so that experts can lead safe and healthy livelihoods around the park. Company-related rules and regulations often have to be much simpler to some degree to obstruct the business, licensing procedure, import procedure. Other barriers listed in the table above, however, are minor. While opening business key licenses/permits required by an entrepreneur include Trade License, Certificate of incorporation, Memorandum of Association, VAT Registration Certificate, Tax Identification Number, which different departments of the Government. Besides, the Export registration certificate is required for export purpose, and perdition from Board of investment is required from the Board of Investment for forming joint venture companies. Enterprises require simplification of procedures in obtaining those certificates and procedure [16].

4.4.1 Challenges for Freelancing

Information on 15 freelancers showed that the cost of accessing internet bandwidth, smooth payment transactions, lack of sufficient infrastructure, foreign exchange policy, shedding of energy loads, Internet bandwidth (speed), business-related government rules and regulations, access to finance are vital issues. As the Government deals with internet bandwidth, the key problem for freelancers is the seamless payment transaction, which is the conventional banking system's delay or hassles in obtaining payment that discourages both marketplaces and freelancers. The primary solution, as the freelancers felt, is the implementation of PayPal. Proper visibility is another major concern for freelancers. In Bangladesh, freelancers are now gaining industry recognition as well [17].

5 RECOMMENDATIONS

This study has made an insight analysis on IT and IT Enabled Services Outsourcing sector of Bangladesh focusing on the potential and difficulties faced by this sector and accordingly made some recommendations as mentioned above which can be summarised as follows:

5.1 Government initiatives

- Government should ensure the cost of the Internet at a reduced price at the user level and make available to all districts. Besides, BASIS or similar concerns may identify the real Online Professionals and recommend to the Government to provide them with high-speed Internet at a lower price.
- Priority should be given to establishing Information and Technology (IT) Village/Software Technology Park (STP) in divisional level ensuring socio-economic infrastructure which could be the milestone for the development of IT sector as well as industrialization in Bangladesh.
- Government as well as business associations may take initiatives for building awareness among the stakeholders regarding the internationally recognized jargons like Business Process Outsourcing (BPO), Business Process Management (BPM), Knowledge Process Outsourcing (KPO), Knowledge Process Management (KPM), Legal Process Outsourcing (LPO) etc. needs to be introduced in addition to ITES to make the nature of service more visible to the foreign clients.
- Initiatives to be taken by government to attract Pay Pal in Bangladesh for ensuring the international online transaction smoother especially for the freelancers of Bangladesh.
- In order to recognize the real freelancers, BASIS, BCS, BCC or similar issues, including Government, should coordinate awareness-building programmes between different bank officials on the basic concept of freelancing.
- Government may take the initiative to provide a proper environment for the skilled Bangladeshi professionals who are working abroad who should be encouraged to return Bangladesh or to collaborate with Bangladeshi entrepreneurs.
- Government may invest more for Research and Development in this sector and conduct studies from time to time in collaboration with other associations and research organizations for policy reforms and new policy recommendations.
- Government should consult with all the stakeholders before recommending new or reforming existing acts, rules and policies.

- Government should focus on professional training as it is more important than traditional education. So, government may establish need-based specialized training centers and institutes to generate more workforces for this sector.
- Government may utilize Bangladesh's foreign mission abroad regarding Image building and branding. In consultation with Bangladesh's foreign mission, BASIS may start taking such initiatives for creating image and branding.
- Above all, the Government needs to priorities the impediments faced by this sector and undertake concrete follow up actions.

5.2 Value Added Service (VAT) management

- To facilitate the continued growth of this sector, VAT on e-commerce (4%) needs to be exempted.
- In order to encourage IT/ITES companies as well as new entrepreneurship, VAT on house rent for IT/ITES, companies could be discounted as an incentive.

5.3 Private sector's initiatives

- The necessary step needs to be taken to include more hands-on ICT related topics to attract the students from the very beginning with a view to realizing the importance of IT and ITES in future professional life.
- Free e-learning resources of outsourcing and freelancing should be available for all so that the interested persons can get easy access to that information and motivate themselves for working in this sector
- Initiative to be taken to establish some advanced Science and Technology Institute which would guide the nation for adopting new technology and make more workforces for this sector.
- Companies and associations may take initiatives regarding knowledge management which will help to retain the knowledge in the company, even when these knowledgeable persons leave the organization.
- It is important to develop and train a highly-skilled talent pool of technical graduates and freelancers to work in this field.
- Freelancers, as well as entrepreneurs, should also be recognized by the Govt. as well as by the other associated organizations to make them feel more encouraged to work for the betterment of this sector.

6. CONCLUDING REMARKS

Bangladesh has a fair collection of vulnerabilities as an emerging source for IT and ITES outsourcing destinations and as a developing market. Most of these stem from the country's lack of expertise, know-how and appropriate investment. The Government has initiated different plans, programmes and projects to keep these vulnerabilities in mind in order to promote IT industries. Government 'thrust market' measures for ICT include income tax exemption, value-added Tax and customs duty for the ICT industry, setting up national ICT policy, setting up an ICT incubation centre, long-term equity fund and short-term funding of working capital, enactment & copyright law, etc., organizing the ICT National Taskforce (the chair is the Prime Minister), etc. Under intense oversight by the relevant government departments, many pilot programmes are being formulated and implemented. The Government is building special Hi-Tech and Software Technology Parks to facilitate all the infrastructural supports needed by outsourcing companies. The future of the outsourcing industry for IT and ITES is very bright as long as it overcomes the above-described obstacles, vulnerabilities and threats. The government requires a joint action plan to priorities the challenges faced by this sector as described in this study and numerous other studies and to pursue specific follow-up steps to make all these strategies, policies and initiatives a fruitful one.

REFERENCE

1. R. Haque, “Bangladesh Beckons: An emerging destination for IT/ITeS outsourcing,” 2012.
2. M. Rashid, “Destination Bangladesh,” BIDA, no. August, pp. 1–36, 2019.
3. N. C. Georgantzas, “Information Technology Industry Dynamics,” 2011. doi: 10.4018/978-1 60566-128-5.ch013.
4. Deloitte, “Digital inclusion and mobile sector taxation in the Democratic Republic of the Congo,”2015. [Online]. Available: https://www.gsma.com/ mobilefordevelopment/ wpcontent/uploads/ 2016/01/ gsma-digital-inclusion-and-mobile-sector-taxation-in-the-democratic-republic-of-the-congo-report.pdf.
5. M. H. Hasan, “Business opportunities within the it and telecommunication industry,” 2006.
6. F. Hossain, “Waves of IT enabled services in Bangladesh,” Daily-Sun, 2015.
7. H. Karthik, “Betting on the Future – The Bangladesh IT-ITeS Industry is Poised for Growth,” 2017.
8. P. M. Madhani, “Global Hub: IT and ITES Outsourcing,” SCMS J. Indian Manag., vol. 5, no. 2, pp. 108–114, 2008.
9. Netherlands Bangladesh Business Platform, “ICT Sector Study Bangladesh, Bridging the Gap between Dutch and Bangladeshi ICT sectors,” Netherlands Bangladesh Bus. Platf., no. January, 2014.

10. A. I. L. M. A. R. T. Rahman, "Mining Weighted Association Rules Using Probabilistic and Combinational Approach," Int. J. Sci. Res., vol. 6, no. 2, pp. 475–479, 2017, doi: 10.21275/ART20163652.
11. Banco Mundial, "World Bank's Enterprise Survey Understanding," 2010.
12. S. Marshal, "Outsourcing moves to Bangladesh," Crain's New York Business, 2007.
13. B. Miller and R. D. Atkinson, "Digital Drag: Ranking 125 Nations on Taxes and Tariffs on ICT Goods and Services," SSRN Electron. J., no. October, 2017, doi: 10.2139/ssrn.3079839.
14. M. Ashikur, S. M., and S. Maruful, "Intrusion Detection System for Wireless ADHOC Network using Time Series Techniques," Int. J. Comput. Appl., 2017, doi: 10.5120/ijca2017913408.
15. S. El Arifeen et al., "Community-based approaches and partnerships: Innovations in health-service delivery in Bangladesh," The Lancet. 2013, doi: 10.1016/S0140-6736(13)62149-2.
16. Taxamo, "Bangladesh VAT on digital services: some services attract reduced rate," Global VAT Complience, 2020. https://www.globalvatcompliance.com/bangladesh-vat-on-digital-services-some-services-attract-reduced-rate/.
17. A. Author, "Why Bangladesh is one of the best outsourcing destination?," Royex Technologies, 2016. http://www.royex.com.bd/blog/37/why-bangladesh-is-one-of-the-best-outsourcing-destination?

Household Socioeconomic Status, Maternal Diet and Infant and Young Child Feeding (IYCF) Practices in Raozan, Bangladesh

Sajia Afrin[1]

Abstract: *Introduction: Household socioeconomic status (SES) is one of the major determinants of maternal and child undernourishment. The study aimed to evaluate the associations between household SES, quality of maternal diet and infant and young child feeding practices in Raozan, Bangladesh. Methods: A cross sectional study was carried out among 113 mother-infant pairs with infant and young child (IYC) aged <24m in different contiguous villages of Raozan Upazila, Chittagong, Bangladesh. Information regarding socio-demographic characteristics, maternal diet and young child feeding practices were collected utilizing standard questionnaire. Data management and analysis were completed using SPSS software. Results: Households with higher socio-economic status (SES) were positively associated with mothers' intake of calcium and vitamin tablets on regular basis and with maternal BMI ($p<0.05$). However, maternal diets, which were only risky and fair, showed no statistically significant association with households SES level ($p=0.19$). Higher levels of maternal education (12-15y) were correlated with exclusive breastfeeding for the first 6 months ($p=0.03$) and achievement of minimum dietary diversity ($p=0.05$). The prevalence of wasting in IYCs was more common (60%) in lower SES households. The responsive feeding behaviors were poor for all IYCs, more than 50% mothers using negative verbal methods to encourage their IYCs to eat. Conclusion: The study found that the quality of maternal diets and IYCF practices were relatively poor in Roazan Upazila. To improve the situation, community-based interventions are needed, targeting mothers especially with poor socioeconomic status.*

Keywords: *Maternal diet, household socioeconomic status, core WHO complementary feeding indicators, responsive feeding behaviors, nutritional status, infant and young child feeding.*

1. INTRODUCTION

Maternal and childhood malnutrition are important health concerns for many developing countries including Bangladesh. The rate of malnutrition among children is considerably

[1] Faculty, School of Public Health and Life Science; University of South Asia.

high in Bangladesh, about six million reported to be malnourished [1]. However, child nutritional status has improved steadily over the past decades. The level of malnourishment has decreased among children under 5 by; stunting 43% in 2007 to 31% in 2017, underweight 41% in 2007 to 22% in 2017, wasting 17% in 2007 to 8% in 2017 [2]. Children aged from birth up to two years are particularly vulnerable because during this period the nutrient demand rapidly changes and nutrient inadequacy may affect their physical growth, cognitive and other development [3]. A study in Malawi showed that during the first 24 months, children have less resistance to infections and are highly vulnerable compared to children, especially if they are undernourished. This can negatively affect the younger ones' health, and can cause a high level of morbidity and mortality [4].

Poor infant and young child feeding (IYCF) practices are major contributors to infant mortality, underweight, stunting and wasting. The World Health Organization (WHO) recommends that infants should be exclusively breastfed until six months from their birth[5], and complementary foods such as solids and semi-solids should be introduced when the infants reach the age of six months [6]. Both breast milk and complementary foods are important at these early stages to meet requirements for optimal growth of IYCs. Although the promotion of these feeding practices should reach all households with infants, in South Asian countries effective interventions are still needed to reduce poor feeding behaviors. According to Bangladesh Demographic and Health Survey 2017-2018, the rate of exclusive breastfeeding were sixty-five percent, a level that is remarkably higher than 2014 [2]. Moreover, according to recommended infant and young child feeding practices the rate increased 34% in 2017 than 23% in 2014 [2]. However, significant percentages are still need to meet to fully cover children of whole Bangladesh. Some determinants such as, lack of knowledge, maternal age, scarcity of foods in households, childcare deficits, maternal education, cultural beliefs and health care utilization were examined in various studies in South Asia, and found to be associated with appropriate IYCF practices [7]. Additionally, socioeconomic status (SES) is also considered another major determinant [7].The impact of maternal education is twice that of paternal education [7] and, household wealth and income also show significant associations with inappropriate IYCF practices [7] which adversely affect infants and young child's growth. Mothers with young children are also vulnerable to undernourishment. According to the Bangladesh Demographic and Health Survey (BDHS), in 2014, 30% of Bangladeshi women were undernourished or thin (BMI <18.5), with rural women more likely to be undernourished than urban women; i.e. 33% vs. 20%, respectively [8]. Maternal under nutrition is another alarming situation, as undernourished mothers are at high risk of giving birth to infants with low birth weight

[8]. Under nutrition among mothers is caused by severe food insecurity, inadequate food consumption during pregnancy and lactation, poor health care services and inadequate dietary micronutrient intakes. Socioeconomic status is one of most important determinants of maternal under nutrition. Mothers from lower income families are highly vulnerable to nutritional insufficiencies during their pregnancy and lactation because, at that time, their need for food and nutrients increase [9]. Due to poverty, when foods and nutrients are unavailable in the home, mothers tend to eat less for the sake of other family members and become unhealthy [9]. Sometimes, because of low income, families also cannot afford nutritious food for mothers. Additionally, in less educated families, sometimes family members do not realize which or how much nutritious foods are needed for lactating mothers' health. In order to examine the associations of socioeconomic factors with maternal and child health, a study was conducted in Raozan Upazila of Chittagong. The study aimed to investigate the associations between household socioeconomic status (SES) and maternal diet with their IYCF practices.

2. METHODS AND MATERIALS

2.1. Study population

One hundred and thirteen infant and young children aged 0 to 24 months, and their mothers or other caregivers were recruited in the study following convenience sampling method.

2.2 Data collection

Twelve undergraduate students were trained as interviewers. Four local community people guided them in groups of three to visit households and collect data. The data were collected for 10 days inMay2014.

Prior to the interview, oral consent was obtained from each mother/caregiver and the study objectives, potential uses of the information and maintenance of confidentiality were explained to them. Two sets of questionnaire were used to collect data on a) IYCF practices, b) maternal diet and c) household socio-economic status. Information regarding IYCF was collected using the "Infant and Young Child Questionnaire" developed following the WHO guideline [5] [11] [12], whereas "The mothers' questionnaire" designed following WHO guideline [12].

2.3 Exposure variable

2.3.1 Household socioeconomic status

Socioeconomic status (SES) is defined as both absolute and relative levels of wealth, which may be reflected in measures of income, household assets, occupational status and most importantly non-material resources such as education [10]. To measure SES, this study elicited information pertaining to ownership of land, toilet facilities, farm animals, whether families were living in a rented or owner-occupied housing, household assets, education levels of the head of the households, and occupations of the head of the households. Principle component analysis (PCA) was used to generate a composite SES score for individual households based on data collection on multiple variables (e.g.: household assets, housing wall materials, latrine facilities, household head educational levels). The generated scores were then divided into quartiles and the households were categorized as low SES (i.e.: PCA score (25 quartile), medium SES (i.e.: PCA score 25^{th} -75^{th} quartile), high SES (i.e.: PCA score >75^{th} quartile)[10].

2.3.2 Outcome variables

a) Maternal diet

The 24-hour diet recall method was used to assess the maternal dietary intake pattern[11]. The household amount and metric measurements of each of the consumed food items were documented following standard procedure (e.g. demonstration of different sized utensils and conversion to metric measurements in mL or using digitized kitchen scale). A WHO healthy food score was used categorize and evaluate the adequacy of diet in meeting the nutritional requirement of the mothers [11]. The food score (FS) is a summary measure derived from 24-hour diet recall. It is comprised of ten questions, a respondent receives 1 score on each question if she fulfill the adequate requirements. The more the variety of diet, the higher the score, and the greater the probability that the respondent was receiving adequate micronutrients from her food consumption. A respondent's food score ranged between a minimum of 0 and maximum of 10 [11]. The WHO cut-offs were used to categorize the food scores (FS) as "risky (FS<3)" "fair (FS=4-7)" "good (FS=8-9)" and "excellent (FS=10)". In addition, information related to maternal intake if micronutrient supplementation e.g. iodized salt, calcium tables, fortified yogurt, vitamin, zinc, and iron tablets were recorded.

b) Infant and Young Child Feeding (IYCF) practices

IYCF practices were assessed following WHO guidelines. Among the five core indicators of IYCF as defined by WHO (i.e. early initiation of breastfeeding, exclusive breastfeeding for 6 months of age, continued breastfeeding at one year, introduction of solids, semi-solids or soft foods at 6 months of age and minimum dietary diversity [5], the EFB rate was assessed for children aged 0-5 months, the CF rate was assesses for children aged 6-45 months following WHO definitions of indicators [5].

The data collected through 24-hour recall of food consumption was used to assess the minimum dietary diversity of CF among children ages 6-23 months of age. Furthermore, nutrient density (i.e. the ratio of amount of energy from a nutrient to the total energy), and adequacy of some key nutrients of the consumed diet were estimated to evaluate if a child met the WHO requirements for kilocalories and micronutrients for IYCs of different age groups[5]**.**These included vitamin A, zinc, iron and calcium.

To calculate energy intake and nutrient density based on the infants' 24-hour recall, Nutritionist Pro Diet Analysis Software version 5.0.0 was used. Moreover, a food frequency interview was also conducted querying 21 types of foods given to the IYCs to see how frequently IYCs were fed those foods. These foods included rice, wheat, roots, yellow/orange fruits, other fruits, green vegetables, other vegetables, fruit juice, meat/poultry, candy, sugar, egg, dairy and biscuits.

2.4. Statistical Analysis

After coding the questionnaires, data were entered into SPSS version 20.0and data were analyzed. Primarily descriptive analyses such as frequencies, means, and standard deviations were carried out for all variables. Bivariate analyses were performed to see associations between independent variable (i.e. household socioeconomic status) and dependent variable (i.e. maternal diet, IYCF practices). The IYCF factors considered for analyses were 24-hour recall, food frequency, IYC's energy and some nutrient intakes, and caregivers' responses to responsive feeding questions. Cross tabulation, chi-square and fisher's exact tests were performed to determine association between maternal educational levels and WHO core feeding indicators for IYCs. The significance level was set at $p < 0.05$.

3. RESULTS

3.1. Demographics of the respondents

Among the study participants of 113, 57.5% were Muslim and 42.5% were Hindu, and the distributions of male and female IYCs were 46% and 54%, respectively. The mean age of IYCs was 10.64 (± 6.83) months, with 37.2% of them in the 12-24 m,16% in 9-11 m, 17% in 6-8m and 30.1% in 0-5mage groups (see Table 1). In terms of maternal diet, 55.8% mothers had fair, while 44.2% mothers had risky diet. The mean age of mothers was 24.83 (±4.4) years and 33.45 (±6.6) years for fathers. The mean number of years of schooling among mothers was 7.73(±3.4) years.

3.2. Association of household socioeconomic status and maternal diet

The association between socioeconomic status and maternal diet showed poor relationship with no statistical significance (p>0.05). Maternal diet (i.e. fair, risky) were same in both low and high SES households while 53% of mothers from medium SES households had risky and 47% had fair diet (see Table 2).

Table 2: Household socioeconomic status and quality of maternal diet

Maternal Diet

Household SES	**Risky**	**Fair**	**P-value**
Low (n=28)	10 (35.7)	18 (64.3)	
Medium (n=57)	30 (52.6)	27 (47.4)	0.194
High (n=28)	10 (35.7)	18 (64.3)	

Not significant (p>0.05).

When n <5 in the cells, Fisher's Exact Test was used; otherwise Pearson Chi-Square was used.

Among the five vitamins and minerals (see Table 3), calcium (*p*=0.004) and vitamin (*p*=0.003) showed significant consumption in frequency between low, medium and high SES households. Almost 36% of mothers from high SES households consumed more calcium tablets regularly, while only 14% mothers from low SES and 7% from medium SES. Similarly, 36% of mothers from high households consumed vitamin tablets as their regular diet compared to only 10% of low and 7% of medium SES. High percentages of mothers from low and high SES consumed more zinc and iron tablets as irregular than regular basis (see Table 3).

Among the five core indicators of IYCF practices, exclusive breastfeeding up to six months (*p*=0.034) and minimum dietary diversity (*p*=0.049) showed significant practices between mothers with primary, secondary and higher secondary or more year of schooling (see Table 4). 64% mothers with>10 years of schooling breastfed their infants and young child exclusively till 6 months, while only 21% mothers from primary schooling (0-5y) and 34% mothers from secondary schooling (6-10y) did so. Similarly, mothers with >10 years of schooling provided better complementary foods to their IYCs in terms of minimum dietary diversity. About 91% mothers with >10 years of schooling provided at least four or more food types from 24-hour recall, while 57 % (n=39) of mothers from secondary level and 50 % (n=17) of mothers from primary level did so.

To assess the complementary feeding patterns, a food frequency table (see Table 5) presented information about IYCs' intakes of different food items daily or more than once daily. Most of the food items showed no significant differences between mothers of low, medium and high SES groups in terms of providing different food items at least daily to the IYCs aged 6-23 months. About 50% of the IYCs received rice, oil and sugar daily or more than once daily. At least daily consumption of protein sources (i.e. egg, dairy, and fish) ranged from 6% to 29%. Consumption of potatoes demonstrates statistically significant associations with all SES groups (p <0.05), but consumption of grains and beans were poor. Fruits (i.e. orange and yellow fruits) were more consumed by IYCs' with high SES (21%) than SES groups, and statistical significant association was observed (p<0.05). The data summarizes that high SES families had higher percentages of giving protein sources daily, while low and medium households groups provided more grain, roots, bean, vegetables and fruits (not yellow fruits), sugar, oil and junk foods (biscuit, candy) to their IYCs as daily or more than once daily basis.

The 24-hour recall of food consumption evaluated the amount of kilocalories and micronutrients that IYCs had eaten in the last 24-hours(see Tables 6 and 7). IYCs of different age groups did not receive adequate kilocalories and micronutrients from the foods that they had eaten in last 24 hours. In terms of IYCs' not receiving kilocalories, significant differences were observed (p<0.05) among IYCs ranged 12-23m. About 67% IYCs aged 12-23m from low SES households did not receive enough kilocalories, compared to 64% from medium SES and 50% from high SES. Though the 12 to 23month old IYCs showed significant associations between energy intakes and SES groups, almost one-third (N=34, 30%) of IYCs in that group did not received enough kilocalories. IYCs not receiving adequate kilocalories in low SES households gradually increased with age from 6-8m (0%), 9-11m (57%) and 67% 12-23m (67%). Among medium and high SES the trend was slightly changes but proportion were not satisfactory.

Moreover, only a few IYCs of different age groups met the required micronutrient intake levels from complementary foods for iron, zinc, calcium and vitamin A (see Table 7). Among the four micronutrients, consumption of iron by the IYCs aged 12-23m showed significant differences between low, medium and high SES households (p<0.05).

4. DISCUSSION

The study aimed to understand associations between household socioeconomic status (SES) on quality and quantity of maternal diet as well as IYCF practices in Raozan Upazila, Chittagong.

Household SES showed poor association with quality of maternal diet, in which all mothers had fair and risky diet. Moreover, mothers' regular consumption of calcium and vitamin tablets showed significant associations, while iodized salt, zinc and iron tablets showed no associations. The results illustrated that most of the lactating mothers were not choosing their foods wisely. However, the study stands alone in which another parallel study was carried out in another rural setting near Jamalpur , in which maternal diet and adequate micronutrient intakes were reported as poor and other factors associated with maternal diet such as poverty, and lack of nutritional information were least developed [14]. In Jamalpur, majority mothers of rural setting were also reported to have risky and fair diet which was similar to this study [14]. However, most of the mothers of Jamalpur have consumed more iodized salt, but the percentages of others micronutrients' consumption were low during their lactation period [14].

When assessing five core WHO feeding indicators of breastfeeding and complementary feeding, three indicators showed no statistically significant differences between mothers with different educational level. WHO recommends that newborn infants should breastfed within the first hour after birth [4].Early initiation of breastfeeding is important as it ensures newborn infants receive colostrum (first milk), which is rich in protective factors [15]. This study showed that approximately 37% mothers of Raozan village behaved consistently with this indicator. Compared to the Bangladesh Demographic Health Survey (BDHS) 2017, initiation of early breastfeeding was less common than other parts of Bangladesh [16]. However, in some South Asian countries such as: India, Nepal, and Srilanka, the practice remained similar followed since only approximately half or fewer mothers initiated breastfeeding within the first hour after birth [17].

Regarding exclusive breastfeeding for six months, this study found that mothers with >10 years of schooling had better practices (66%) exclusive breastfeeding than mothers having less education. In comparison, an almost similar exclusive breastfeeding rate was observed in the BDHS 2017[16]. Moreover, similar to this study, exclusive breastfeeding rates were similar in Nepal (65.5%) [18] and in West Bengal, India (57.1%) [19].

For the 24-hour recall of food consumption, this study found that the quality and quantity of complementary food was poor. Majority of the IYCs from different SES households did not receive adequate kilocalories and micronutrients. Only a few IYCs met requirements of kilocalories and micronutrients intake from their complementary food according to WHO recommendation. A study in Matlab, Bangladesh, showed that the amount of energy from complementary food offered to infants was about 74% [20]. The mean intake of vitamin A from complementary food groups was 48% of the required nutrient for children aged 9-12m [20]. Moreover, zinc intakes were 40-45%, while iron intakes account for only 8-9% of the reference nutrient intake [20]. Therefore, this poor quality of complementary food intake might explain why Bangladesh has a high prevalence of under nutrition among IYC.

The first two years of life are critical years for a child's growth and development. During this period, due to nutritional inadequacy, children may experience impaired cognitive development, compromised educational achievement in their life and may lead to low economic productivity. Moreover, mothers having inadequate diet and nutrients during their lactation and pregnancy period may lead to underweight and unhealthy mothers. In this study, the quality of maternal diet and IYCF practices were poor in Raozan villages and higher SES households was not highly associated with adequate maternal diet and better IYCF practices.

5. CONCLUSION AND RECOMMENDATION

This study showed that there is a major problem in maternal diets' and IYCF practices in Raozan villages, and even mothers in higher SES households did not have adequate diet or adequate vitamins and minerals consumption during their lactation period. In addition, mothers with higher SES households did not practice good IYCF behaviors any better than low or medium SES households' mothers. To combat this situation, awareness programs and community-based interventions are needed to improve mothers' awareness of uptaking adequate food and other micronutrient intakes. Also, in order to improve current feeding behaviors to enhance IYCs growth and health in Raozan villages, interventions are needed incorporating exclusive breastfeeding, the quality and quantity of complementary food and responsive feeding behaviors targeting mothers' irrespective household SES level, especially those who live in rural setting with lower socioeconomic status.

REFERENCE

1. Save the Children. MALNUTRITION IN BANGLADESH: NEW REPORT PUBLISHED. [Cited 2015 March 8]. Available from: https://bangladesh.savethechildren.net/news/malnutrition-bangladesh-new-report-published
2. BDHS, 2019. Bangladesh Demographic and Health Survey 2017-2018. Ministry of Health and Family Welfare. Dhaka, Bangladesh.
3. AcuinCS, K.G.L., Liabsuetrakul, T., Achadi, E.L., Htay, T.T., Firestone, R. and Bhutta, Z.A., (2011). Maternal, neonatal, and child health in Southeast Asia: towards greater regional collaboration. The Lancet, 377(1), pp.516-525.
4. Makoka, D., (2013). The Impact of Maternal Education on Child Nutrition: Evidence from Malawi, Tanzania, and Zimbabwe.American Journal of Public Health, 84, pp.1-32.
5. WHO | Indicators for assessing infant and young child feeding practices - Part I: Definitions [Internet]. [Cited 2013 Apr 12]. Available from: http://whqlibdoc.who.int/publications/2008/9789241596664_eng.pdf
6. Butte, N.F., Lopez-Alarcon, M.G. and Garza, C., (2002). Nutrient adequacy of exclusive breastfeeding for the term infant during the first six months of life. World Health Organization, pp. 1-47

7. Khan,R.E.A. andRaza, M.A., (2013). Child malnutrition in developing economies: a case study of Bangladesh. Quality & Quantity Journal, 10, pp.1-20.
8. Muiruri, J., Hulcome, P., Schumacher, B., Parveen, M., Bilkes, F. andMehjabeen, S.S., (2015). WFP Bangladesh Nutrition Strategy 2012-2016.Mat and Child Nutr, pp.1-28.
9. McTavish, S., Moore, S., Harper, S. and Lynch, J., (2010). National female literacy, individual socioeconomic status, and maternal health care use in sub-Saharan Africa. Social Science & Medicine, 10, pp.1-23.
10. Vyas, S. andKumaranayake, L., (2006). Constructing socioeconomic status indices: how to use principle component analysis.The London School of Hygiene and Tropical Medicine, 10, pp.460-468.
11. WHO | Healthy food and nutrition for women and their families- Part- I: Trainers' instructions including overheads and handouts.2001. [Cited 2013 Nov 13].Available from: http://www.euro.who.int/__data/assets/pdf_file/0020/152237/E73470.pdf
12. World Health Organization, (2014). Early initiation of breastfeeding. 2014. Retrieved from: http://www.who.int/elena/titles/early_breastfeeding/en/.
13. WHO. Guiding Principles for Complementary Feeding of the Breastfed Child. [Internet]. [Cited 2013 May 11]. Available from http://www.who.int/nutrition/publications/guiding_principles_compfeeding_breastfed.pdf
14. Shahrin A, Richards J. Improving Nutritional Status for Women in Low-Income households. Center for Policy Research. 2012; 8:1-101.
15. World Health Organization. WHO. Early initiation of breastfeeding. 2014. Retrieved from: http://www.who.int/elena/titles/early_breastfeeding/en/
16. National Institute of Population Research and Training (NIPORT), Mitra and Associates, Macro International Calverton. Bangladesh Demographic and Health Survey 2017. NIPORT, Mitra and Associates and Macro International: Dhaka Bangladesh and Calverton, MD. 2017;1-56.
17. Dibley MJ, Roy SK, Senarath U, Patel A, Tiwari K, Agho KE, et al. Across-country comparisons of selected infant and young child feeding indicators and associated factors in four South Asian countries. Food Nutr Bull. 2015;31(2):366–75.
18. Khanal V, Sauer K, Zhao Y. Exclusive breastfeeding practices in relation to social and health determinants: a comparison of the 2006 and 2011 Nepal Demographic andHealth Surveys. BMC Public Health. 2013;13 (958):1-13.
19. Sinhababu A, Mukhopadhyay DK, Panja TK, Saren AB, Mandal NK, Biswas AB. Infant- and Young Child-feeding Practices in Bankura District, West Bengal, India. J Health Popul Nutr.2010; 28(3):294-299.
20. ICDDR,B. An overview of under-nutrition in Bangladesh. Health and Science Bulletin. 2014; 9 (1):9-16.

Tables

Table 1: Descriptive characteristics of the study population, (N=113)

Characteristics	**N (%) / mean±SD***
Religion	
Hinduism	48 (42.5)
Islam	65 (57.5)
IYC sex	
Male	52 (46)
Female	61 (54)
IYC age groups	
0-5m	34 (30.1)
6-8m	19 (16.8)
9-11m	18 (15.9)
12-24m	42 (37.2)
Breastfeeding Practices	
Yes	107 (94.7)
No	6 (5.3)
Growth faltering	
Underweight, ≤-2 SD of WAZ	35 (31.0)
Stunted, ≤ -2 SD of HAZ	11 (9.7)
Wasted, ≤ -2 SD of WHZ	46 (40.7)
Maternal diet	
Risky	50 (44.2)
Fair	63 (55.8)
Household socioeconomic status	
Low	28 (24.8)
Medium	57 (50.4)
High	28 (24.8)
IYC mean age in months	10.64± 6.8
Mothers' age in years	24.83±4.4
Fathers' age in years	33.45±6.6
Mothers' education (years)	7.73±3.4
Fathers' education(years)	7.45±3.9

* Categorical variable: n (%)*Continuous variable: mean±SD

Table 2: Household SES and mothers' regular and irregular consumption of micronutrient supplements

Vitamins and minerals	Consumption frequency	Household SES, N (%)			
		Low, (n=28)	**Medium, (n=57)**	**High, (n=28)**	**P-value**
Iodized Salt	Regularly	28 (100)	56 (98.2)	28 (100)	1.000
Calcium tablets	Regularly	4 (14.3)	4 (7.0)	10 (35.7)	0.004*
	Not regularly	24 (85.7)	53 (92.9)	18 (64.3)	
Vitamin tablets	Regularly	3 (10.7)	4 (7.0)	10 (35.7)	0.003*
	Not regularly	25 (89.3)	53 (92.9)	18 (64.3)	
Zinc tablets	Regularly	1 (3.6)	2 (3.5)	2 (7.1)	0.837
	Not regularly	27 (96.4)	55 (96.5)	26 (92.9)	
Iron tablets	Regularly	1 (3.6)	7 (12.3)	3 (10.7)	0.501
	Not regularly	27 (96.4)	50 (87.7)	25 (89.3)	

Significant (*p-value=<0.05) results. When n <5 in the cells, Fisher's Exact Test was used; otherwise Pearson Chi-Square was used

Table 3: Maternal educational levels and five core indicators of IYCF practices

Core WHO Indicators	Maternal Education, N (%)			
	Primary, (n=34)	Secondary, (n=68)	Higher secondary and more, (n=11)	P-value
Early initiation of breastfeeding (n=113)	13 (38.2)	24 (35.3)	4 (36.4)	0.623
Exclusive breastfeeding for 6m (n=113)	7 (20.6)	23 (33.8)	7 (63.6)	0.034*
Introduction of complementary food at 6-8m (n=54)	13 (38.2)	33 (48.5)	8 (72.7)	0.135
Minimum dietary diversity at 6-23m (n=66)	17 (50.0)	39 (57.4)	10 (90.9)	0.049*

*p-value = <0.05. When n <5 in the cells, Fisher's Exact Test was used; otherwise Pearson Chi-Square was used.

Table 4: Household socioeconomic status and IYCs consumption of food items in daily or more than once daily

Food Items	Household SES, N (%)		
	Low, (n=28)	Medium, (n=57)	High, (n=28)
Rice	18(64.3)	33 (57.9)	12 (42.9)
Wheat	0 (0)	2 (3.5)	2 (7.1)
Grain	3 (10.7)	3 (5.3)	0 (0)
Roots*	16 (57.1)	17 (29.8)	6 (21.4)
Bean	2 (7.1)	2 (3.5)	0 (0)
Orange and yellow vegetables	6 (21.4)	4 (7.0)	2 (7.1)
Other vegetables	2 (7.1)	4 (7.0)	2 (7.1)
Orange and yellow fruits*	4 (14.3)	2 (3.5)	6 (21.4)
Other fruits	5 (17.9)	5 (8.8)	3 (10.7)
Fruit juice	2 (2.7)	1 (1.7)	2 (2.7)
Dairy	7(25.0)	7 (12.3)	8 (28.6)
Egg	3 (10.7)	2 (3.5)	3 (10.7)
Fish	4 (14.3)	7 (12.3)	6 (21.4)
Sugar	13 (46.4)	21 (36.8)	8 (28.6)
Oil	13 (46.4)	25 (43.9)	10 (35.7)
Junk food (biscuit, candy)	16 (57.1)	27 (47.4)	8 (28.6)

* p-value = <0.05. When n <5 in the cells, Fisher's Exact Test was used; otherwise Pearson Chi-Square was used

Table 5: Household SES and N (%) of IYCs not achieving kilocalorie adequacy from complementary food by IYCs age groups

Age group, m (n1, n2, n3)	Amount of Kcal	Household SES, N (%)			P-value
		Low, (n=28)	Medium, (n=57)	High, (n=28)	
6-8 (3, 9, 7)	<200	0 (0)	7 (77.8)	2 (28.6)	0.549
9-11 (7,9,2)	<300	4 (57.1)	7 (77.8)	1 (50.0)	0.818
12-23 (9,25,8)	<550	6 (66.7)	16 (64.0)	4 (50.0)	0.023*

Significant (*p-value < 0.05) n1=# of IYCs from low SES households, n2= # of IYCs from medium SES households, n3= # of IYCs from high SES households When n <5 in the cells, Fisher's Exact Test was used; otherwise Pearson Chi-Square was used.

Table 6: Nutrient intake requirements by age group and number of IYCs from different SES groups (in brackets) meeting requirements

Nutrients	6-8m (n=19)	9-11m (n=18)	12-23m (n=42)
Iron, mg	6.8 (0,0,1)	6.8 (0,1,1)	3. 8 (2,13,3)**
Zinc, mg	2.2 (0,0,1)	2.3 (0,2,0)	2.4 (0,3,3)
Calcium, mg	336 (0,0,2)	353 (0,1,1)	196 (0,3,3)
Vitamin A, μgRE	13 (0,1,2)	42 (2,0,1)	126 (0,4,0)

Significant difference (**p-value < 0.05)

n1= # of IYCs from low SES households, n2= # of IYCs from medium SES households, n3= # of IYCs from high SES households

When n <5 in the cells, Fisher's Exact Test was used; otherwise Pearson Chi-Square was used

Economic Impact of Rohingya Crisis on Bangladesh: Evidence from GDP Perspective

Nazmun Nur Eva[1]
Salehin Chowdhury[1]
Anisul Islam Sajib[2]

Abstract: *Rohingya issue has become the national crisis for Bangladesh which should come under the consideration especially from the economical perspective as it is impacting on the host country's economical condition. Using qualitative method, this study is an attempt to find out the outflow needed to host the Rohingya refugees which can be used in several developing ongoing projects in Bangladesh as well as how to ensure the sustainable return and reintegration. This study mainly focused on paper based resources using secondary data and the research is qualitative in nature. The main purpose of the study is to identify the changes in information relating to economical conditions particularly on GDP, local income and price of the local commodities which have a micro and macro level effect for the rohingya matter. We have found out the impact on national economy of Bangladesh in terms of financial way due to rohingya issues.*

Keywords: *Economical impact, Migration, GDP, Sustainable return.*

1. INTRODUCTION

Rohingyas of Myanmar has been recognized as migrants for Bangladesh as it is the close destination for Rohingyas to move forward. Though the concept of migration has been an alarming concept for the recent century due to the consideration of terrorist involvement in different countries like Syria, Iraq, Mayanmar etc. A tribal group from the Raskhine state of Mayanmar named Rohingya is now called as 'illegal Bengali immigrants' has gained the category of migrants. As Bangladesh is the closest neighboring country for them, so Bangladesh has become their ultimate destination for migration .Despite having so many difficulties and as lower middle income country Bangladesh has received the Rohingyas in well manner. This Rohingya emigration may not only affect the economy immediately but also created enough difficulties for Bangladesh, especially in tourist

[1] Lecturer, South Asia School of Business, University of South Asia
[2] Assistant Professor, South Asia School of Business, University of South Asia

provinces. At least a million Rohingya used to reside in Myanmar, which has marginalized the ethnic group for decades by refusing to recognize them in an official capacity. Insurgent attacks have drawn a fierce response from Myanmar's military, and sent hundreds of thousands of Rohingyas fleeing to other countries particularly in Bangladesh. The realistic possibility of sending back Rohingyas back to Rakhine state where they belong and to assure their Myanmanar Nationality though supervision of UN remains in a big dilemma. Bangladesh is a small, low-lying, under-resourced and overcrowded country and its leaders and citizens are growing impatient with the fallout of Mayanmar's purge of the Rohingya. This crisis has already begun to suffer Bangladesh in so many ways.

2. DEMONSTRATION OF THE PROBLEM

To recognize the economic impact, the Rohingya migrants' circumstances need to be understood from the beginning. From the historical perspective, it is evident that the Rohingyas have been enforced to become immigrant from their region to neighboring region. The appearance of forced migration can be due to the armed clashes between Rakhine Buddhists and Rohingya muslims; the Mayanmar military occupation at the borderstate which was justified by the name of 'Development' as they wished to take hold of the land for natural resources and do extraction work which is originally permitted them for any kind of misuses. As a result, the insecure condition of their livelihood which enforced them to migrate internally for secured future and better life.

Considering the report information which is published by Centre for Policy Dialogue, Bangladesh and other government authority, approximately 205 thousand Rohingyas have been already living in the two vital areas of Cox's Bazaar and they have come in various times since 2005 to 21017.The total estimation was around 400 thousand unlawful Rohingya migrant is exist in Cox bazaar, Bandarban, Khagrachari and Rangamati who has entered in Bangladesh after 2005 but still roaming out for their continued existence.

The rapid boost of total population in the coastal provinces which is an immense source of earnings through tourism and it is now at in hazardous situation. As a result, is directly effecting on the GDP of Bangladesh. As a least developing country Bangladesh is facing difficulty for handling the big number of population of own country as well as the huge population of Rohingya migrants. As an outcome of this crisis, Bangladesh is already experiencing negative impacts from different sectors like-economical, political, and social and security for tourists has hampered.

Bangladesh's GDP per capita is a meager $1,909 as of December 2019. However, in 2019 the national economy grew by 8.15 percent, and the country has made remarkable progress toward the Millennium Development Goals. While extensive international humanitarian relief has poured in to support the refugees, that doesn't cover all the economic costs to the government or to the border region's Bangladeshi citizens. The influx's full effect may not be apparent for some time.

3. OBJECTIVE AND STUDY METHODOLOGY

Economics is a compound area under discussion for which we need to understand the negative impact of Rohingya on Bangladesh's economic situation. Complex economic result in a simplistic way has been used in this article. The main Objective of the study are to understand the changes in the economic data specially the GDP, local wages and the price of the local commodities which is affecting by the Rohingyas.

This study is qualitative in nature and the research design is descriptive and the research approach used is deductive. For all intents and purposes, data was gathered mainly from secondary sources. Primary source is the agreement between Bangladesh & Mayanmar of 1993 on Rohingya repatriation. This is mainly a secondary data -based research where most of the information has been collected from published credible sources like online based-journal articles, newspaper, official reports and web portals and preciously conducted research papers which gave a better knowledge to carry out the article work. From research perspective it is sort of content analysis.

4. LITERATURE REVIEW

If the crimes inflicted upon Bengalis, Bosnians and Rohingyas perpetrated by the Serbs, Pakistanis and Buddhists of Myanmar in the years of 1971, 1996 and twenty century were not the war crimes against humanity or genocide, no destruction of human societies and communities cannot be considered as holocaust. In fact the Palestinians and Rohingyas have been going through must be considered as holocaust against Muslims, who as a one-fourth of human race. Muslims are under the indiscriminate attack from every side, including their own tyrannical and dicta-torial regimes supported by the big Western military corporate circles and their governmental machinery. At the time when Australia has been detained asylum seekers and closing refugee camps for helpless people who arrive by boat in camps on Manus Island and Nauru, a small Pacific nation, we have kept open our arms wide open for about two million Muslims many of whom are already in our territories.

Serbian military General Ratko Mladic was arrested in 2012 while he was picking up strawberry. This is the man under whose leadership many thousands of innocent Bosnian Muslim Men and boys, during the early years of 1990s, were persecuted in the football fields so that no future generation of Bosnian Muslims could stay in the former Yugoslavia. “Former Bosnian Serbian commander Ratko Mladic has been sentenced to life in prison, for genocide and war crimes during the Balkan conflict more than two decades ago. The presiding judge of the International Criminal Tribunal for the former Yugoslavia (ICTY) on Wednesday [November 22, 2017] found that the 74-year-old general “significantly contributed” to genocide committed at Srebrenica. Previous judgments of the tribunal in the Netherlands already ruled that the massacre of about 8,000 Muslim men and boys in Srebrenica was genocide. Judge Alphons Orie ruled that the perpetrators of the crimes committed in Srebrenica intended to destroy the Muslims living there. The crimes committed rank among the most heinous known to humankind," he said.”58

In the recent past, military warfare or even preemptive wars were very profitable business for the perpetrators. That scenario has been changing very fast. Making the developing countries dependent on foreign investments, powerful and industrialized can make more profit by exploiting cheaper land and labor from Third World countries. Still former imperialist powers are slow in learning this lesson, while countries like China and India have been taking this lesson seriously.

We as a nation and State has been strongly denouncing Israeli occupation of Palestinian territory and demanding the two-state solution for solving the underlying conflicting issues between Palestinians and their occupants, the Israelites. But since Balfore Declaration of 1917 it was clear that Palestinians would not be able to live or survive in their homeland. All Muslim countries were very supportive to Palestinians, who could neither return nor live in their homeland with peace even for a day since 1948. Why Muslim countries and their leaders have been failing their people so miserably. How can we expect that things would be different in relation to Myanmar Muslims?

United Nations, the UNHCR or any other agency of the UN has utterly failed to persuade Myanmar to come to a table of negotiation to agree with some specific terms and conditions of the repatriation of more than one million Rohingya refugees from Bangladesh to their own birth-places, which were burned or destroyed beyond any recognition of their real owners and dwellers. Unilaterally Bangladesh could not achieve anything from Myanmar in this core issue of repatriation. There is no agreement between UNHCR, Myanmar and Bangladesh. UNHCR has continued to engage with both governments in negotiations on two separate Memoranda of Understanding (MoUs), meant to ensure that any future returns are conducted in line with the international standards of voluntariness, safety and dignity. According to the UNHCR the conditions in Myanmar are not yet conducive for returns to be safe, dignified, and sustainable. The responsibility for creating such conditions remains with the Myanmar authorities, and these must go beyond the preparation of physical infrastructure to facilitate logistical arrangements. The purported arrangement deals between Bangladesh and Myanmar on November 23, 2017 and January 16, 2018 could not be considered as realistic or implementable.

For eyewash in the middle of 2018 Myanmar picked up a Rohingya family of five from the no men’s land and declared that the repatriation agreed upon has already begun. Of course, Bangladesh remained powerless to change the minds of Myanmar government to take back their people from Bangladesh. The ineffective foreign policy of Bangladesh has made this repatriation possibility fairly uncertain. Near about a quarter of a million Rohingyas Muslims were driven out from their homeland in 1978 and they had to take shelter in Bangladesh. It was China that convinced Myanmar that the then Bangladeshi authorities were desperate to see that Yangon took back their citizens. Failure to listen the diplomatic call of Beijing might be too bad about which Myanmar was quite aware all along. The success of China's mediation with its own formulated “special counter measure” led to an agreement that was signed quickly by both the countries. (Bangladesh and Myanmar) on the July 9, 1978. Myanmar had to take back all Rohingya Muslim refugees from Bangladesh, which succeeded to get the recognition of Rohingyas as citizens of Myanmar. General Ershad making himself ‘colorless’ friend of foreign countries kept that status quo going. But since 1982 Myanmar government changed the citizenship law and made the Rohingya Muslims as foreign people in their birthplace, Rakhine State of Myanmar. China now has a vested interest in mediating between India and Pakistan to resolve the Kashmir issue because of its nearly USD 50 billion investment in the china-Pakistan Economic Corridor that passes through PoK(Pakistan occupied Kashmir) . China's recent mediation between Myanmar and Bangladesh over Rohingya issue shows the increased ability of Beijing in resolving conflicts beyond its borders to maintain regional stability. Since the introduction of newly devised wicked citizenship law, Yangon had started to call Rohingya Muslims as foreign citizens with Bengali heritage coming from Bangladesh. They were told to prove that their forefathers were the citizens from the year of 1823.

1991-92, Bangladesh with its weaker positions in the face of Myanmar aggressive policies, Dhaka found itself helpless to make Myanmar again on similar type of bilateral agreement as we had witnessed in 1978. This time Yangon was very reluctant to seat with Bangladesh for any bilateral resolution of problems of repatriation. Myanmar had been reiterating that Rohingya Muslims were not their citizens, who could be taken back as stateless people happened to catch up in no men’s land between its territories and Bangladesh. A bilateral meeting held in April, 1992, as a result of tremendous effort of

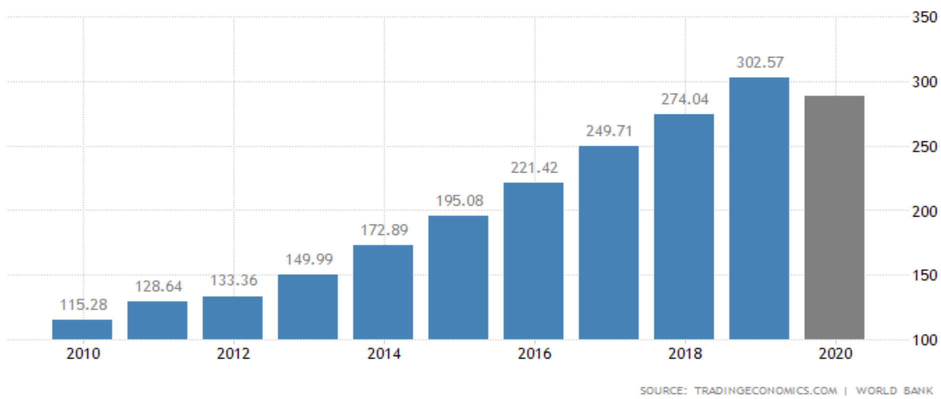
Dhaka, which had to agree with all conditions with Myanmar to repatriate a bulk of Rohingya Muslims to Myanmar, where they lost all of their fundamental rights. In 1991 influx of the hundreds of thousands of refugees from Myanmar to Bangladesh had been tackled on an ad hoc basis. This partial success of repatriation had created an illusion that Myanmar did not have any whole scale plan to drive out all its Muslim citizens from Arakan and beyond. In 1992 Bangladeshi government succeeded to send back some of the refugees. That had been taken as false signal and unfounded hope that the Rohingya crisis could be resolved through negotiations and peaceful means. It was not until June 1994 that UNHCR was given proper access to the camps in Bangladesh. The section also focused on the evolution of UNHCR's role from pure material assistance to promotional activities with all its implications. The discussion was rounded up with a brief exploration into the change of circumstance in the country of origin which facilitates the ground.

Economic Condition of Bangladesh before Rohingya Migrants In 2017

Bangladesh has gotten its independence from Pakistan in 1971. As a war-torn country, it had to start off from scratch. However it has done considerable progress in its economy and also democratic system. The rising ready-made garments sector has boosted up its economy a lot and also made a way for its female population to be empowered and also contribute to the GDP. But the total number of populations is way big compared to any other country within a small geographical area which makes it the world's 8thlargest populous country. 21 In the meantime, the ever-increasing numbers of Rohingya migrants are taking over its only seaside areas since the 90s and it continues. Despite the claims of corruption at the governmental departments Bangladesh has exhibited continuous progress in all the sectors. For the sake of analysis, if the last four fiscal years' statistics (2015-16 to 2018-19 provisional) are considered, the current picture of development and progress can easily be comprehensible. The sectoral growth rate of GDP in the last four years has been positive and continuous. The overall growth especially in the sector of manufacturing industries, electricity, gas and water supply, health and social work sectors, and community, social and personal services are markedly encouraging.In order to understand the economic situation just before the August 2017 Rohingya migration the previous two fiscal years sectoral growth rate of GDP and Per Capita GDP and GNI have been tabulated here. The information presented here is collected from the Bangladesh Bureau of Statistics and Finance Ministry. Bangladesh has managed to earn its GDP growth at a fair rate in the last four years where it increased its Per Capita GDP from US $ 1,385 (2015-16) to 1,675 (2017-18) (see Table 2); and it has experienced considerable achievement in the Per Capita GNI as well, which is US $ 1,465 (2015-16) to 1,751 (2017-18). It has a sharp growth in its GDP from 7.11% to 7.86% (2017-2018) (See Table 1)23. The smooth and steady growth in the GDP indicates

Bangladesh is progressing towards the Millennium Development Goals of the United Nations; even though, the total economy of Bangladesh is not that sufficient enough to support the refugees or even support all those Bangladeshi citizens who are residing at the border region of the country and hosting the refugees as well. However, the world has opened its arms to these refugee people and donating extensively for a humanitarian cause with all forms of relief and supports. The donations which are in most of the cases made in US Dollars have also added up to the GDP of the country.

Figure 1: GDP of Bangladesh from 2010 to 2020



Source: Author, 2018

The Gross Domestic Product (GDP) in Bangladesh was worth 302.57 billion US dollars in 2019, according to official data from the World Bank and projections from Trading Economics. The GDP value of Bangladesh represents 0.25 percent of the world economy.

Microeconomic impacts Impact of price changes on poverty

Refugees are selling large quantities of in-kind assistance received as relief items. Local shopkeepers reported depressed prices of products that were leaking out of the camps. Refugee purchases of other products, on the other hand, push prices up. The net effect suggests slightly decreased price pressures on the food products most relevant to the poor. The estimated poverty rate using the price-adjusted poverty line thus remains unchanged. However, the unchanged census rate does not imply there has been no impact on poverty at all. One way of measuring impact is through the poverty gap ratio. The estimates show that, when we take only price effects into consideration, the poverty gap ratio as a result of the influx has declined slightly—by 0.48 percentage points in Teknaf and 0.45 percentage points in Ukhiya. Impact of wage changes on poverty: Wages for agricultural and other unskilled work are depressed, both in Teknaf and Ukhiya of Cox's Bazar and in Naikhongchhari of Bandarban. This is because the Rohingya are working as day labourers at a lower wage rate than host community workers. Our estimates show that, because of declining wages, headcount poverty in Teknaf and Ukhiya has increased by 2.73 and 2.63 percentage points, respectively. That is, with no impact on wages, headcount poverty in Teknaf would be 21.82 per cent instead of 24.5 per cent. In Ukhiya, poverty incidence would have fallen to 25.8 per cent from 28.5 per cent. Because of declining wages, poverty gaps have risen by 1.9 and 1.4 percentage points in Teknaf and Ukhiya. More than 70 per cent of respondents in Teknaf and 50 per cent in Ukhiya reported falling wages as the principal way in which they had been affected by the influx.

Macroeconomic impacts of the refugee entry

We attempted to capture the links between the host and the refugee economies through various transmission channels and to obtain a measure of the overall impact on the economy. We captured these effects by using the Local Economy-Wide Impact Evaluation methodology (Taylor, 2013). Generally, the starting point for capturing these local economy-wide effects is the construction of a Social Accounting Matrix (SAM) for a given geographic area and the wider economy. A SAM provides a comprehensive picture of the economic structure and comprises, among other factors, the distribution of value-added among sectors. A SAM can also capture the total impact of an exogenous demand shock (e.g. one associated with any particular sector/output) through its direct and indirect effects. Indirect effects result from production link effects (both backward and forward) and consumption links (i.e. increased income that generates demand for products of other sectors). We constructed a local-level data SAM for 2017 using the data of three economies: Rohingya, immediate host (Teknaf/Ukhiya) and remote host (Cox's Bazar), to assess the spill-over effects triggered by the refugees. The data SAM was converted into SAM models for policy simulation. We simulated impacts on host communities based on 1) aid inflow to refugees; 2) aid inflow plus cost of deforestation; and 3) aid inflow plus the cost of both deforestation and depletion of groundwater specific to the host community. Note that these simulations come with a number of caveats, related mainly to obtaining data and over-estimating of aid/under-estimating forest losses. When just aid inflows are considered, the economy-wide impact of US$1 of aid is US$2.70. When we consider the costs associated with loss of forest and water resources, this reduces to US$2.3 The simulations suggest the deleterious impacts are more localized than the aid impact. Cox's Bazar and Bangladesh may be generating static gains in the short run. The losers are the host community. Therefore, the hit of the Rohingya arrival may not have affected the economy directly which would require some time but has already caused trouble for its only coastal regions, towns and beaches where is called Cox's Bazar. This place is happened to be known for its touristic attractions and cultural heritage of the indigenous people who have been living there for a long time. Now the whole place has been remaining occupied by the foreign aid workers and as well as Rohingya people. But the businessmen of that particular region especially the hoteliers are growing with the locales that have gotten opportunities to work with them as well as with the foreign aid agencies.24

Economical Impact of Rohingya Migrants on Bangladesh after 2017

Most of the European counties are now with negative population growth. The European countries could easily accommodate and assimilate millions of non-Europeans in their countries. As civilization builders, Europeans cannot be so hesitant to accept a few million refugees or internally displaced people from around the world. Countries like Turkey and Iran have successfully accommodated about 8 (eight) million refugees from Syria and Afghanistan respectively. For the revitalization of human resources of those two Muslim countries, their refugee-friendly strategies, policies and laws have played tremendous positive role. These two countries have a common advantage in this regard. None of these two important Muslim countries have ever been colonized directly by any European powers or nations.

As discussed earlier the Rohingyas have taken shelter at the coastal region of Bangladesh, a district called Cox's Bazaar which is prominent for its tourism and agriculture-based businesses. Due to the Rohingya exodus, the hotel business is suffering at this area as they have claimed to a loss in hotel reservations about 40% even if in the pick season of their business compared to the previous year.25 Due to a sudden increase in the demand of foods and other supplies, and the imminent supply shortage, price hike hit everybody in the region.26 In order to survive, the Rohingya people have been taking over the local wage market for cheap rate (charging only 300 taka instead of 550 taka which is local standard) which creates dissatisfaction among the local wage earners.27 In addition to that, the displaced population of Myanmar for their shelter and firewood supplies has destroyed around 1500 acres of social forest in Cox's Bazaar, which involved 2000 local poor and unemployed people with an anticipated 45% benefit of the forest trees.28 Some other forests and hilly areas are also supposed to be destroyed by the migrants for shelter. The problem doesn't end here in Cox's Bazaar as the Rohingya tried to leave from the country as migrant workers to Middle Eastern countries which caused diplomatic and other forms of crisis. Before 25 August exodus Rohingya has been present in Bangladesh for quite a long time. They have tried to get a voter identity card and manage their passport illegally in order to migrate as workers to the Kingdom of Saudi Arabia, for example. According to The Daily Star news report, about 700 Rohingya refugees had gone to Saudi Arabia who was later arrested by authorities and awaiting for deportation as Saudi officials were pushing Bangladesh to take them back. This kind of events particularly hampers Bangladesh's overseas labour market and image as well.29 The overall consequences are so immense as Rohingya migrants bring crisis along with themselves. The sudden migration has already affected local food market with the higher price of the products, depression at the daily wages which affected the local wage earners, basic rights and needs such as education, health and security are hampered for all; as well as being vulnerable to natural calamities like flood and landslide at those areas during rainy seasons.30

Despite the fact that expectations associated with the transition process in Myanmar are high - they must not compromise a detailed and objective analysis of the current realities. Development cooperation (DC) project strategies aiming to solve protracted refugee situations in Myanmar and its neighboring countries must continuously monitor which causes of displacement continue to exist - unchanged or in a different form - to react adequately and flexibly on them. The framework prescribed by the Constitution and the currently prevailing power structures reinforce the marginalization of internally displaced people and returnees in Myanmar. If the international community wants to adopt countermeasures, it must raise up the protection of human rights, reintegration and compensation measures to binding indicators of success for its coordinated and coherent DC-measures. By supplying legal advice on conflicts about land rights and the depletion of resources, DC can contribute to creating legal certainty for IDPs and refugees again. DC can also help to expand existing health and education infrastructure in those areas that have not been accessible to the government for a long time and that are controlled by armed groups. This infrastructure will benefit host communities, internally displaced people and refugees alike. Protracted displacement has led to transnational labor migration, diversification, networking and urbanization. DC needs realistic scenarios that not only include refugee repatriation but also take into account social change. Bi-national training opportunities (for instance with Thailand) and labor market initiatives would open up sustainable income perspectives to refugees and migrants within the respective country and contribute to the economic development of both countries.

Impact on National Economy

Bangladesh has never accepted such a huge number of refugees; as a result, it had to revise its budget to manage the helpless people for the 2017-18 fiscal years. It has been considered as: 'one of the fastest refugee exoduses in modern times, involving at least 60% of the former Rohingya population of the whole of Rakhine State, and resulted in the creation of the largest ever refugee camp.'31 The response came in after the UN's

"2017 Humanitarian Response Plan" (HRP) activated by UN OCHA to handle the Rohingya crisis.32 Even though, it was anticipated that after a period of time the crisis would attack the national budget as foreign aids slow down and the crisis still remains. This has eventually impacted Bangladesh national budget as the parliament had to reduce its own development budget and relocate to the Rohingya fund for the 2018- 19 fiscal year.33 For example, to protect Bangladesh's touristic zone and also a continuous revenue-generating place, it has planned to invest US$ 300 million for developing residential facilities at 'Bhasan Char' of Noakhali district and relocate there all the Rohingya refugees who are residing at Ukhia and Teknaf Upazila of Cox's Bazaar district.34 With the help of international donor agencies, Bangladesh has planned to complete this project where their own funding is USD 120 million.35 United Nations Office for the Coordination of Humanitarian Affairs initially planned to support the crisis with US$ 434 million for the period of September 2017 to February 2018.36 This particular donation was aimed at supporting all existing and incoming Rohingya refugees and also the local communities of Cox's Bazaar. Until January 21, 2018, almost 70.3% of the fund was invested while the policymakers have still been worried about the urgently required fund as per their year-based estimation (see table 3).37 Using per capita income based forecasting method both Policy Research Institute (PRI) and South Asian Network on Economic Modelling (SANEM) have prepared an estimation for the requirements of the fund for a single year where they estimated approximately US$ 1 billion. On the other hand, the Center for Policy Dialogue (CPD) estimated US$ 882 million for a ten-month period up to June 2018 in light of UN OCHA's HRP fund estimation.38

Labour market

The labour force participation rate (LFPR) in Cox's Bazar as a whole is estimated to be 54.8 per cent, about 3.4 percentage points lower than the national average of 58.2 per cent. However, the LFPRs in Teknaf and Ukhiya upazilas are a little higher than the district and national averages (BBS, 2018).The female LFPR in Cox's Bazar is almost 10 percentage points lower than the national average of 36.3 per cent (BBS, 2018). Lack of education and training, prevalence of early marriage and patriarchal social norms are some of the factors contributing to women's limited labour market participation (Rahman and Islam, 2013; Mahmud and Bidisha, 2016). Inadequate workplace infrastructure (e.g. toilets, childcare facilities) and a poor, gender-insensitive, public transport system also act as hindrances to women's labour force participation (Khatun, 2018).

Income and consumption Wages in Cox's Bazar, at about Tk. 11,317 per month, are just below the national average or the median wage . This is nearly a third less than wages in Dhaka, and Cox's Bazar ranks 49th out of 64 districts in this regard . These low wages probably reflect the lack of industrial jobs and possibly of rural non-farm employment opportunities. However, the daily wages for agricultural labour in Chattogram division are higher than the national average agricultural wage rate . In Cox's Bazar, a large number of people are engaged as wage labourers in fishing and salt production. Workers in these sectors are likely to be paid higher wages than those who work in agriculture. Official statistics report gender-based wage gaps for all districts in Bangladesh.16 On average, male agricultural wage labourers earn Tk. 435 per day, including food, whereas female workers get Tk. 350. Data provided by the World Bank show that the per capita income of Cox's Bazar (US$534) is close to the national district-level average after the top four districts are excluded. Bandarban, however, with a per capita GDP of US$290, is one of the poorest districts. Data from the HIES 2016 show that both per capita income and consumption in Cox's Bazar are comparable with the corresponding national averages. Bandarban's per capita income and consumption are much lower than those of Cox's Bazar and the national average (BBS, 2017c).

Infrastructure

Electricity connectivity in Cox's Bazar and Bandarban is far below the national average: 82.5 per cent of 0 10 20 30 40 50 60 70 80 Ukhiya Teknaf Chattogram Bandarban Cox's Bazar Bangladesh Total Male Female Impacts of the Rohingya Refugee Influx on Host Communities / Page 51 Bangladeshi households have electrical connections but only two thirds of households in Cox's Bazar and Bandarban (BBS, 2018). For Teknaf and Ukhiya, the comparable figures are around 60 per cent and 40 per cent.

Trade and investment

Economic activities in Cox's Bazar are mostly concentrated in Cox's Bazar Sadar and Chakaria, in terms of both number of establishments and persons engaged. Economic activities in Teknaf are at twice the level of those in Ukhiya, in terms of both establishments and persons engaged. Major non-agricultural activities are concentrated in wholesale and retail trade (47.5 per cent), manufacturing (14 per cent), hotels and restaurants (7.5 per cent) and transport and storage (7 per cent). Most manufacturing establishments in Cox's Bazar are oriented towards the domestic market; only 3 per cent are export-oriented (BBS, 2013b). Several public sector investment programmes are currently underway, including special economic zones (SEZs) and tourism parks, large coal-based thermal power 17 Supplied by the Local Government Engineering Department (LGED). 0 20 40 60 80 100 120 Use of improved drinking water source Use of sanitary latrines that are not shared Safe disposal of child's faeces % of households Cox's Bazar Banadarban Chattogram Bangladesh Impacts of the Rohingya Refugee Influx on Host

Communities / Page 53 plants at Matarbari and Maheshkhali and construction of a liquefied natural gas (LNG) plant. Bandarban lags far behind in terms of economic activities (BBS, 2016a).

5. CONCLUSION

What has happened at Rakhine State in Myanmar? The United Nations has expressed a clear warning after its investigation is concluded as genocide might have taken place but the other countries have remained silent to the crisis even the International Criminal Court, ICC has no jurisdiction over there since Myanmar does not recognize it.50 It is not a good sign because no one seems to be responding to the world's worst humanitarian crisis in time. However, being an over populated and limited resourceful country, Bangladesh has proven its generosity by providing shelter and support to those displaced people.51 But the problem seems to be remained unsolved as Myanmar did not show any sign of taking their people back no time soon.52

REFERENCE

1. Ahmed, Bayes, Orcutt, Miriam, Sammonds, Peter, Burns, Rachel, Issa, Rita, Abu-Bakar, Ibrahim and Devakumar, Delan, "Humanitarian Disaster for Rohingya Refugees: Impending Natural Hazards and Worsening Public Health Crises." The Lancet Global Health 6, no. 5, May 1, 2018, e487–88. https://doi.org/10.1016/ S2214-109X(18)30125-6.
2. Ahsan, Syed Badrul. "The Rohingya Crisis: Why The World Must Act Decisively" Asian Affairs 49, no. 4, October 29, 2018, pp. 571–81. https://doi.org/10.1080/ 03068374. 2018.1528791.
3. Alam, Jobair, "The Current Rohingya Crisis in Myanmar in Historical Perspective", Journal of Muslim Minority Affairs 39, no. 1, January 2, 2019, pp. 1–25. https://doi.org/10.1080/13602004.2019.1575560.
4. Alam, Jobair, "The Rohingya of Myanmar: Theoretical Significance of the Minority Status", Asian Ethnicity 19, no. 2, April 3, 2018, pp. 180–210. https://doi.org/10.1080/ 14631369.2017.1407236.
5. Alam, Mayesha, "How the Rohingya Crisis Is Affecting Bangladesh and Why It Matters," The Washington Post, February 12, 2018, Online edition. https://www.washingtonpost.com/ news/monkey-cage/wp/2018/02/12/how-the-rohingya-c%E2%80%A6.
6. Arase, David, "China's Two Silk Roads Initiative: What It Means for Southeast Asia", South-east Asian Affairs, 2015, 25–45. http://www.jstor.org/stable/44112796.
7. Bangladesh Shangbad Shangstha, "Bangladesh, Turkish Premiers Agree to Work Together on Rohingya Crisis", The Daily Star, December 19, 2017. https://www.thedailystar.net/country/ dhaka-ankara-sign-2-memorandum of understanding -to-boost-cooperati-on-bilateral-relation-between-bangladesh-bd-and-turkey-1507315.

8. Bashar, Iftekharul, “New Challenges for Bangladesh”, Counter Terrorist Trends and Analyses 4, no. 11, 2012, pp. 10–13. http://www.jstor.org/stable/26351100.
9. Bhatia, Abhishek, Mahmud, Ayesha, Fuller, Arlan, Shin, Rebecca, Rahman, Azad, Shatil, Tanvir, Sultana, Mahmuda, Morshed, K. A. M., Leaning, Jennifer and Balsari, Satchit, “The Rohingya in Cox’s Bazar”, Health and Human Rights, 20, no. 2, 2018, pp. 105–22. https://www.jstor.org/stable/26542064.
10. BSS, “PM Hailed as ‘Mother of Humanity’, Shajahan | The Asian Age Online, Bangladesh”, The Asian Age, October 4, 2017. http://dailyasianage.com/news/88866/pm-hailed-as-mother-of-humanity-shajahan.
11. Chamie, Joseph, “International Migration”, Foreign Policy Association, Great Decisions, 2016, pp. 35–50. http://www.jstor.org/stable/44214820.
12. Crabtree, Kristy, “Economic Challenges and Coping Mechanisms in Protracted Displacement: A Case Study of the Rohingya Refugees in Bangladesh”, Journal of Muslim Mental Health 5, no. 1, March 31, 2010, pp. 41–58. https://doi.org/10.1080/15564901003610073.
13. Department of Immigration and Passports, BD, “Myanmar National’s Registration», Daily Report - Date: 04/06/2018.” Government. www.dip.gov.bd, June 5, 2018, http://www.dip.gov.bd/site/news/
14. Dey, Sudip, “Adverse Rohingya Impacts on Bangladeshi Economy and Its Solutions”, American Journal of Trade and Policy; Vol 4, No 3 (2017): 12th Issue, December24, 2017, 129–32. https:// journals.abc.us.org/index.php/ajtp/ article/view/ 1067.
15. Editor, “The Economy… the Hidden Side behind the Rohingya Muslim Crisis – Rawabt Center.” Rawabet Center for Research and Strategic Studies (blog), October 20, 2017. https://rawabetcenter.com/en/?p=3872.
16. Harmachi, Abdur Rahim, “‘Myanmar Will Destroy Bangladesh’s Economy with Rohingya Crisis: Muhith’”, Online News. bdnews24.com, October 15, 2017. https://m.bdnews24.com/en/detail/wb-imf/1408057.
17. Hasan, Kamrul, ‘Locals Unhappy about Losing Labour Market to Rohingyas’, Dhaka Tribune, December 11, 2017. https://www.dhakatribune.com/ bangladesh/ nati-on/ 2017/12/11/ locals-labour-market-rohingyas/.
18. Hazis, Faisal S., “Malaysia in 2017”, Southeast Asian Affairs, 2018, pp. 201–18. https://www.jstor.org/stable/26492778.
19. Htusan, Esther, “Myanmar: 71 Die in Militant Attacks on Police, Border Posts”, Online News, The Spokesman Review, August 25, 2017. http://www.spokesman.com/sto-ries/2017/aug/25/myanmar-71-die-in-militant-attacks-on-police-borde/.
20. Islam, Aynul, “Economic and Social Impact of the Rohingya Crisis”, Institutional Current Event Analysis, ULAB, Dhaka: Center for Enterprise Society, ULAB, January, 2018.

https://webcache.googleusercontent.com/ search?q=cache: Orugs Andy8wJ:https://ces.ulab.edu.bd/wp-content/uploads/sites/ 18/2015/07/ULAB CES Current Event_Analysis_Rohingya-Jan-2018. pdf+&cd=1&hl=en&ct=clnk& gl=tr.

21. Kallol, Asif Showkat, "Doing the Math on the Rohingya Crisis", Dhaka Tribune, November 10, 2017. https://www.dhakatribune.com/uncategorized/ 2017/11/10/do-ing-the-math-on-the-rohingya-crisis.
22. Khatun, Dr. Fahmida, "Implications of the Rohingya Crisis for Bangladesh", Organizational Presentation presented at the A dialogue on «Addressing Rohingya Crisis: Options for Bangladesh» at CPD, Centre for Policy Dialogue (CPD), November 11, 2017.
23. Kuri, Ranajit Chandra, "Bhashan Char Being Prepared for Rehabilitation of the Rohingya", Dhaka Tribune, September 27, 2017. https://www.dhakatribune.com/ bangladesh/nati-on/ 2017/09/27/bhashan-char-prepared-rehabilitation-rohingya.
24. LASZLO, Emese Laura, "The Impact of Refugees on Host Countries: A Case Study of Bangladesh under the Rohingya Influx", Master's Thesis, Aalborg University, 2018. https://projekter.aau.dk/projekter/files/281553531/Thesis.pdf.
25. Mahmud, Tarek, "Rohingya Influx: 15-Year-Old Forestation Project Destroyed in 57 Days", Dhaka Tribune, October 21, 2017. https://www.dhakatribune.com/ bangladesh/2017/10/21/rohingya-influx-15-year-old-forestation-project-destro-yed-57-days/.
26. Manshanda, Rita, "Gender Conflict and Displacement: Contesting 'Infantilisation' of Forced Migrant Women", Economic and Political Weekly 39, no. 37, 2004, pp. 4179–86. http://www.jstor.org/stable/4415535.
27. Meyer, Eric, "With Oil And Gas Pipelines, China Takes A Shortcut Through Myanmar", Forbes, February 9, 2015. https://www.forbes.com/sites/ericrmeyer/ 2015/02/09/oil-and-gas-china-takes-a-shortcut/.
28. Ovi, Ibrahim Hossain, "How Much Does it Cost to House Rohingya Refugees?" Online News Portal, Dhaka Tribune, September 14, 2017. https://www.dhakatribune.com/ bangladesh/ 2017/09/13/ cost-house rohingya refugees/.
29. Palma, Porimol, Azad, M Abul Kalam, "Rohingya Trouble in Jobs Abroad", The Daily Star, February 11, 2009, online edition. https://www.thedailystar.net/news-detail-112441.
30. Penna, Michele, "How China Has Used Myanmar's Rohingya Crisis to Its Advantage", World Politics Review, January 3, 2018. https://www.worldpolitics review.com/ articles/ 23901/ how-china-has-used-myanmar-s- rohingya-crisis-to-its-advantage.
31. "Provisional Estimates of Gross Domestic Product of Bangladesh 2018-19 (p)", Bangladesh: BBS, GoB, April, 2019. http:// bbs.portal.gov.bd/ sites/ default/files/files/bbs.portal.gov.bd/page/057b0f3b_a9e8_4fde_b3a6_6daec3853586/GDP_2018_19p_web%20-02-04-2019.pdf.
32. Rahman, Khalid, "China and SAARC: Connectivity — Need for an Enabling Environment", Policy Perspectives 11, no. 1 (2014): 47–56. https://doi.org/10.13169/polipers.11.1.0047.

33. Online News Portal. Deutche Welle, DW.com, April 4, 2019. https://p.dw.com/p/3GFDR.
34. “Rohingya Refugee Crisis” UNOCHA, September 21, 2017. https:// www.unocha.org/ rohingya-refugee-crisis.
35. Sahana, Mehebub, Jahangir, Selim, Anisuzzaman, Md., “Forced Migration and the Expatriation of the Rohingya: A Demographic Assessment of Their Historical Exclusions and Statelessness”, Journal of Muslim Minority Affairs 39, no. 1, January 2, 2019, pp. 44–60. https://doi.org/10.1080/13602004.2019.1587952.
36. Shahnawaz, Muhammad Shahrukh, “China and South Asia: Threats, Strategies, Cooperation and Expectations”, Pakistan Horizon 64, no. 2, 2011, pp. 65–80. http://www.jstor.org/stable/24711178.
37. SHIN, Aung. “Second Gas Column Discovered in the Bay of Bengal”, The Myanmar Times, February 14, 2016. https://www.mmtimes.com/business/18976-second-gas-co-lumn-discovered-in-the-bay-of-bengal.html.
38. SINGH, Daljit, “Introduction”, Southeast Asian Affairs, 2018, vii–xvi. https://www.jstor.org/stable/26492765.
39. South, Ashley, “Burma: The Changing Nature of Displacement Crises”, RSC Working Paper Series, Conflict Violence and Displacement in Burma , Oxford, UK: Refugee Studies Centre, QEH, University of Oxford, UK, February 2007. https://www.rsc.ox.ac.uk/publications/burma-the-changing-nature-of-displacement-crises.
40. Special Correspondent, “Cox`s Bazar Tourism Sector Faces Serious Setback”, The Daily New Nation, November 14, 2017, online edition. http://thedailynewnation.com/news/154542/coxs-bazar-tourism-sector-faces-serious-setback.html.
41. SUMPTER, Cameron, FRANCO, Joseph, “Migration, Transnational Crime and Terrorism”, Perspectives on Terrorism 12, no. 5, 2018, pp. 36–50. https:// www.jstor.org/ stab-le/26515430.
42. “The World Bank: Bangladesh” Organization, The World Bank, 2019. https://data.worldbank.org/country/bangladesh.
43. TISDALL, Simon, “World’s Awkward Silence over Rohingya Genocide Warnings.” The Guardian, January 3, 2018, sec. World news. https:// www.theguardian.com /world/2018/ jan/03/worlds-awkward-silence-over-rohingya-genocide-warnings.
44. “Total Population by Country 2019”, Organization, World Population Review, Accessed April 10, 2019. http://worldpopulationreview.com/countries/.
45. Tran, Clara, “South-East Asian Migrant Crisis: Who Are the Rohingya Fleeing Myanmar by Boat?” News, ABC News, May 21, 2015. https:// www.abc.net.au/ news/2015-05-21/ explainer-who-are-the-rohingya-fleeing-myanmar/6487130.

46. UNHCR Staff, “100 Days of Horror and Hope: A Timeline of the Rohingya Crisis”, UNHCR The UN Refugee Agency, December 1, 2017. https://www.unhcr.org/news/stories/2017/12/5a1c313a4/100-days-horror-hope-timeline-rohingya-crisis.html.
47. WARE, Anthony, LAOUTIDES, Costas, “Myanmar’s ‘Rohingya’ Conflict: Misconceptions and Complexity”, Asian Affairs 50, no. 1, January 2, 2019, pp. 60–79. https://doi.org/10.1080/03068374.2019.1567102.
48. YHOME, K., “The Burma Roads”, Asian Survey 55, no. 6, 2015, pp. 1217–40. https://www.jstor.org/stable/26364333.
49. ZHENDONG, Pu, “China-Myanmar Oil and Gas Pipelines to Lower Energy Costs”, Online News Portal, China Daily, June 6, 2013. http://www.chinadaily.com.cn/m/guizhou/2013-06/06/content_16590423.htm.
50. Khan, Maimul Ahsan. 2016. Addressing the challenges of Rohingya Refugees: Repatriation issues.https://green.edu.bd/wpcontent/uploads/2019/01/Addressing-the-Challenges-of-Rohingya-efugees_Repatriation-Issues.pdf
51. Ellis Petersen Hannah & Myanmar and Azizur Sheikh (2019) Bangladesh to start sending back thousands of Rohingya. https:// www.theguardian.com/world/2019 /aug/16/myanmar-and-bangladesh-to-start-sending-back-thousands-of-rohingya
52. Ellis Petersen Hannah & Myanmar and Azizur Sheikh (2019) Rohingya refugees refuse to return to Myanmar without rights guarantee. https:// www.theguardian.com/world/2019/aug/21/not-without-our-rights-rohingya-refugees-refuse-to-return-to-myanmar
53. 2019 Joint Response Plan for Rohingya Humanitarian crisis. https:// www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/ files/2019_jrp_for_rohingya_humanitarian_crisis_compressed.pdf
54. Rudolf, Markus (2018) Return to a peaceful Myanmar? Parting with an illusion: how to handle forced displacement in Myanmar from the perspective of sustainable development cooperation. https:// www.ssoar. info/ssoar/handle/ document/ 62612? locale-attribute=en#
55. 1995, Action on Rohingya. http:// www.burmalibrary.org/reg. burma/archives/ 199507/ msg00237.html
56. Executive Committee of the High Commissioner’s Programme (2019) Update on UNHCR’s operations in Asia and the Pacific. https:// www.unhcr.org/5d8dcb767.pdf
57. Gilbert Geoff, The International Law of Voluntary Repatriation, UNHCR. https:// www.unhcr.org/en-lk/5ae079557.pdf
58. https://green.edu.bd/wp-content/uploads/2019/01/Addressing-the-Challenges-of-Rohingya-Refugees_Repatriation-Issues.pdf
59. https://www.ssoar.info/ssoar/handle/document/62612?locale-attribute=en#
60. http://www.burmalibrary.org/reg.burma/archives/199507/msg00237.html

61. Myanmar and Bangladesh to start sending back thousands of Rohingya https://www.theguardian.com/world/2019/aug/16/myanmar-and-bangladesh-to-start-sending-back-thousands-of-rohingya
62. Rohingya refugees refuse to return to Myanmar without rights guarantee. https://www.theguardian.com/world/2019/aug/21/not-without-our-rights-rohingya-refugees-refuse-to-return-to-myanmar.
63. Vested interest of China and India. Along with the conflict of interest of other nations. https://economictimes.indiatimes.com/
64. Micro and Macro economical effects for rohingya issues on Bangladesh https://www.undp.org/

University of South Asia Journal, Volume 5, Issue 1, December 2019, ISSN: 2411-3077

Analyzing the Variability of Growth of the Capital Market in Bangladesh: An Empirical Study on the Dhaka Stock Exchange Limited

Fakir Tajul Islam[1]
Dewan Mazharul Islam[2]

Abstract: *A capital market is important for supplying funds to businesses from the savers of the fund. In a financial system, the capital market always works as a pivotal part of the total financial structure. In this study, based on the last 23 years of historical data, the growth of capital market based on the Dhaka Stock Exchange is analyzed. The key variables used in this study are DSE general index, total turnover, the total number of companies, and total issued capital. Descriptive statistics, tabular analysis, financial models and growth trend analysis are used to estimate and evaluate the growth of the capital market. The findings showed that confidence in the mind of investors pays a key role in the growth of the capital market in Bangladesh. Furthermore, political stability, economic growth, and investor awareness are also found important for the growth of the capital market.*

Key words: *Growth, Variability, Capital Market, Dhaka Stock Exchange, Bangladesh*

1. INTRODUCTION

In most market economies, investors choose from different financial securities to invest their money. And the attractiveness of the securities depends on the riskiness and compensating payoffs. The capital market is that collection of interest groups who trades these long term financial securities and also impact market dynamics with other non-trading activities. In Bangladesh, the capital market listing is viewed as an opportunity gainer. So it becomes a daunting task for banks to get the entity ready for public listing. Everyone is solely focused on the rate the IPOs will be issued. If an alternate source promises to get an IPO approved by the regulators at the desired premium, the prospect invariably prefers to switch (Rashid 2018). The capital market in Bangladesh consists of two full-fledged automated stock exchanges- the Dhaka Stock Exchange (DSE) and the Chittagong Stock Exchange (CSE). These two stock exchanges are the most important

[1] Assistant Professor, South Asia School of Business, University of South Asia.
[2] Lecturer, Department of Maritime Science; BSMRMU; e-mail: islam6279@gmail.com

intermediary of the capital market, though there are other participants. Bangladesh Securities and Exchange Commission (BSEC), as the watchdog regulates the stock exchanges of the country (Bangladesh Bank 2017). Analyzing different economic indicators, Bangladesh is an emerging economy to invest and grow businesses. Capital market influence the economic growth is inevitable and crucial in the long run. It is analyzed and found that the activities in the stock market positively influence impact an economy (Hossain and Islam 2019). Now the investment in the capital market from the developed countries has been increasing in the last few years. Especially, large firms of the United States have invested significantly in the last two years. It is a good sign, as the dependence on banking and the financial sector has been reducing in these years. Foreign investors are now quite interested in the power sector, especially alternative energy sources. They are also interested in our manufacturing and pharmaceutical companies as these companies are now entering the capital market. There are many stocks that are undervalued due to the weakness of the capital market knowledge and its dynamics. The luring return is even higher than the stock return of other frontier and emerging markets in the world. The Bangladeshi capital market has a very high prospect if it flourishes in the right direction. It necessitates analysis of the market dynamics and its growth determinants. It may result to improve and develop the market in the long run.

2. LITERATURE REVIEW

The capital market in Bangladesh is an important part of the financial system in Bangladesh. Various literatures are explored and review in this sector to know the dynamics of growth of the capital market in Bangladesh. In Europe, various regulations on retirement savings had a significant impact on capital market growth (Rapp and Kaserer 2014). In that study on Europe, there were certain drivers which strengthen the capital market growth, which included securitization and financial regulation, technological progress of the business institution, the intensity of financial innovation, and financial market structures also. Islam et al. (2017) evaluated the institutional and macroeconomic determinants of Dhaka Stock Exchange performance, where they found that consumer price index (CPI), gross domestic product (GDP) and total market capitalization affect capital market performance significantly. In this way, it infers that these variables may become the determinants of the growth of the market as well.

Amu et al. (2017) observed that the capital market growth can bring economic growth positively in Nigeria, though market capitalization growth was not affective economic growth significantly. To analyze the capital market and economic growth relationship, Coskun et al. (2017) opined that there is a unidirectional causality running from variable of capital market growth to the variable of economic growth. The people involved in the capital market have a lack of awareness about the functionality of the stock market. It is the result of the absence of illiterate investors in the stock market in Bangladesh. On the basis of the growth potential, only the blue-chip stocks are most phenomenal in the last five to six years, compare to the small and mid-level stocks in the stock exchanges (Rashid 2018). In the last few years, the growth of big corporations including multinational and local manufacturing firms has led to an imbalance between the stock market growth and real economic growth. The capital market did not respond to the expansion in the business activities (14 percent) in 2017-18 fiscal years with GDP growth of 7.9 percent (Haque 2019). So this is the gap where the significance of this study lies. Analyzing different economic indicators, Bangladesh is an emerging economy to invest and grow businesses. Capital market influence on economic growth is inevitable and crucial in the long run. It is analyzed and found that the activities in the stock market positively influence impact an economy (Hossain and Islam 2019).

This study aimed to find out the reasons behind the imbalance between economic growth and capital market growth. Though it was not possible to bring economic growth variables into this study, the capital market growth has been analyzed to find out their dynamics over the last two decades.

The result showed that the profitability is very significantly influenced by the independent variables. NPLs and LLPs maintained by the commercial banks negatively related with the profitability of the business, especially LLPs shown statistical significance to impact on profitability negatively. It is better to take the LLPs and NPLs in the minimum level for maximum profitability of banks.

3. RESEARCH METHODOLOGY

This study is based on the past data published by Bangladesh Bank and other regulatory bodies in Bangladesh. The data was taken from the year 1996 to 2019. This study incorporates both quantitative and qualitative data. Different literature published in various journals, books, reports, and also in the newspapers.

3.1 Variables

There are different types of capital market intermediaries to analyze the growth of the capital market. Those intermediaries include stock exchanges, merchant banks, stock dealers and brokers, credit rating companies and Investment Corporation of Bangladesh. In this study, the most important intermediary of the capital market, the stock exchange is chosen for the capital market growth analysis. A total of four variables is taken to analyze the growth of the capital market in Bangladesh. Though there are two stock exchanges, the Dhaka Stock exchange is more inclusive than the Chittagong Stock exchange. For this reason, only DSE data is used in this study. The variables of the study are:

DSEGI= DSE General Index

DSETO= Total Turn Over in DSE in (Tk. in crore)

DSETC=Total Issued Capital in DSE (Tk. in crore)

DSENC= Total Number of Companies in DSE

3.2 Financial Model

In this research analysis, the financial model used for estimating the growth rate of the different variables of the Dhaka Stock Exchange is as follows:

Growth Rate = $\frac{Value_{t+1} - Value_t}{Value_t} \text{ X } 100$ --(1)

The corresponding financial models are

DSEGI Growth Rate = $\frac{\text{DSEGI}_{t+1} - \text{DSEGI}_t}{\text{DSEGI}_t} \text{ X } 100$ ---(1a)

DSETO Growth Rate =$\frac{\text{DSEGI}_{t+1} - \text{DSEGI}_t}{\text{DSEGI}_t} \text{ X } 100$ --(1b)

DSETC Growth Rate = $\frac{\text{DSEGI}_{t+1} - \text{DSEGI}_t}{\text{DSEGI}_t} \text{ X } 100$ ---(1c)

DSENC Growth Rate = $\frac{\text{DSEGI}_{t+1} - \text{DSEGI}_t}{\text{DSEGI}_t} \text{ X } 100$ ---(1d)

3.3 Tools of Analysis

Descriptive statistics are used for analyzing the growth rate of different variables of capital market growth in Bangladesh. Besides that, tabular analysis, chart and graphs are also used for understanding and evaluating the trend of the growth of the capital market.

4. RESEARCH ANALYSIS AND FINDINGS

Based on the previously mentioned financial model, all four variables are analyzed for estimating their growth rate individually. In the following table, the growth rates are listed and summarized.

4.1 The growth rate of four variables

Using the financial model discussed in the previous section, the growth rates of the variables are estimated. The turnover of the DSE was very vulnerable in the past years. These growth rates will be analyzed using descriptive statistics and graphical trend analysis in the subsequent sections.

All the variables were very volatile since 1996; the growth rates were fluctuating frequently in the last 23 years of DSE history. In some years, the growth rates were found negative due to the turbulent state of the DSE market. Many investors lost their investment in that downtrend time of the market. DSE turnover (DSETO) was found the most volatile and fluctuating variable of growth of the capital market in Bangladesh. The other three variables, general index, total issued capital and the total number of companies were found more stable compared to turnover.

Table 1: The Growth rate of four variables in the last 23 years

Years	"DSEGI" General Index	"DSETO" Turn Over (Tk. in crore)	"DSETC" Total Issued Capital (Tk. in crore)	"DSENC" Total Number of Companies
1996-97	16%	332%	24%	6%
1997-98	-39%	-64%	8%	5%
1998-99	-19%	311%	2%	3%
1999-00	3%	-52%	8%	5%
2000-01	28%	97%	6%	2%
2001-02	11%	-29%	9%	6%
2002-03	5%	-12%	4%	1%
2003-04	59%	-19%	37%	3%
2004-05	30%	204%	8%	-3%
2005-06	-22%	-39%	23%	7%
2006-07	60%	258%	29%	1%
2007-08	40%	230%	30%	5%
2008-09	0%	65%	35%	5%
2009-10	104%	187%	48%	-9%
2010-11	-1%	27%	38%	-2%
2011-12	-25%	-64%	28%	4%
2012-13	-4%	-27%	13%	6%
2013-14	2%	31%	11%	4%
2014-15	2%	0%	13%	6%
2015-16	-4%	-100%	5%	1%
2016-17	28%	88%	8%	2%
2017-18	-4%	0%	9%	3%
2018-19	6%	-14%	4%	2%

Source: Authors' calculation

4.2 Descriptive statistics of the growth of the capital market based on DSE

The descriptive statistics of the growth rate of the four variables calculated before are shown in the following table. Descript statistics show us the ranges and deviation of the selected variables of the study. Besides that, the skewness and kurtosis also calculated in the assessment of statistics of the variables.

Table 2: Descriptive statistics of the four variables of capital market growth.

	DSEGI	DSENC	DSETC	DSETO
Mean	0.119761	0.027213	0.174019	0.612997
Median	0.025988	0.031873	0.111691	0.000261
Maximum	1.044235	0.071713	0.478822	3.319194
Minimum	-0.391408	-0.090000	0.024204	-0.996206
Std. Dev.	0.317938	0.036224	0.134884	1.286846
Skewness	1.111415	-1.629168	0.749864	0.848681
Kurtosis	4.439271	5.952643	2.252315	2.414311
Jarque-Bera	6.720289	18.52924	2.691209	3.089736
Probability	0.034730	0.000095	0.260382	0.213340
Sum	2.754507	0.625900	4.002444	14.09894
Sum Sq. Dev.	2.223856	0.028868	0.400260	36.43138
Observations	23	23	23	23

Source: Authors' calculation using Eviews v9.0

The standard deviation of the growth rates shows that the most variation found in the total turnover analysis. It is estimated at more than 128% for total turnover in crore taka in DSE. In this case, the growth rate of the number of companies was more stable, only 3.62% as its standard deviation. Skewness is a measure of a lack of symmetry in the frequency distribution. Kurtosis is a measure of whether the distribution is too peaked, meaning a very narrow distribution with most of the responses in the center (Hair et al., 2017). The DSEGI and DSENC are found substantially skewed as their value is between greater than +1 and less than -1. Considering the kurtosis, all the variable value is above +1, so the variable distribution is too peaked.

4.3 The growth trend in the capital market based on DSE

In 2017, the stock index had increased to 6000 from the value of 4000 due to the increasing confidence of investors. It has been observed that the sudden growth of the share market has come from the mid and low-level capital holders, who are mostly categorized as speculative investors. In the following figure, the growth of the DSE general stock index is shown. In the Y-axis, the growth percentage rates are given, while the X-axis shows the corresponding years of the growth rates.

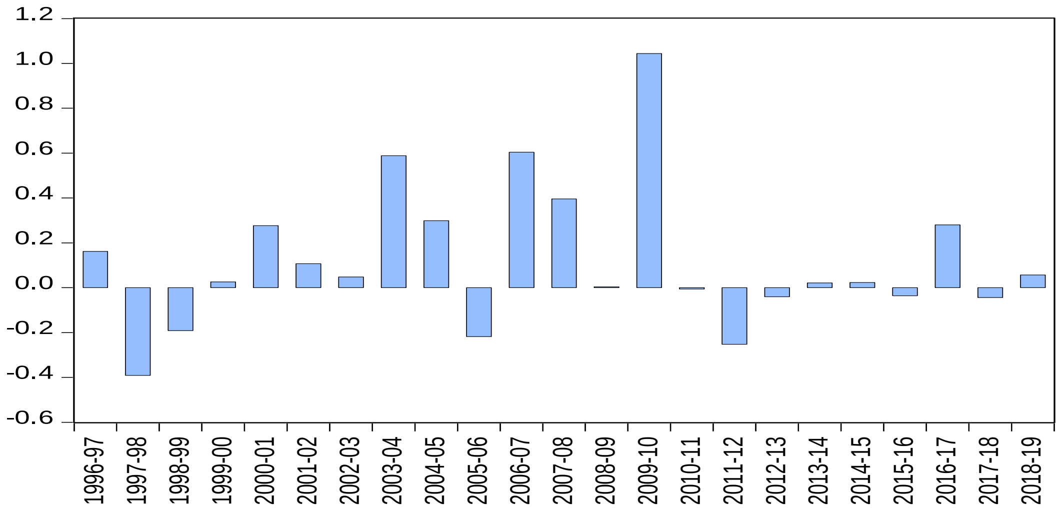


Figure 1: Growth trend of DSE General Index

Though the market index had some sudden fluctuation in its value, P/E ratio was found consistent in most of the stocks. For this reason, investors are suggested to follow the Price/Earnings ratio to choose the company's share for future investment. In the next figure, the growth trend of the total turnover of DSE is analyzed through a bar chart. It shows that except 2004-05, 2009-10, and 2010-11, all other years have experienced positive growth in the total turnover of DSE. In the last few years, the growth is somewhat lower compared to that of the 1990s.

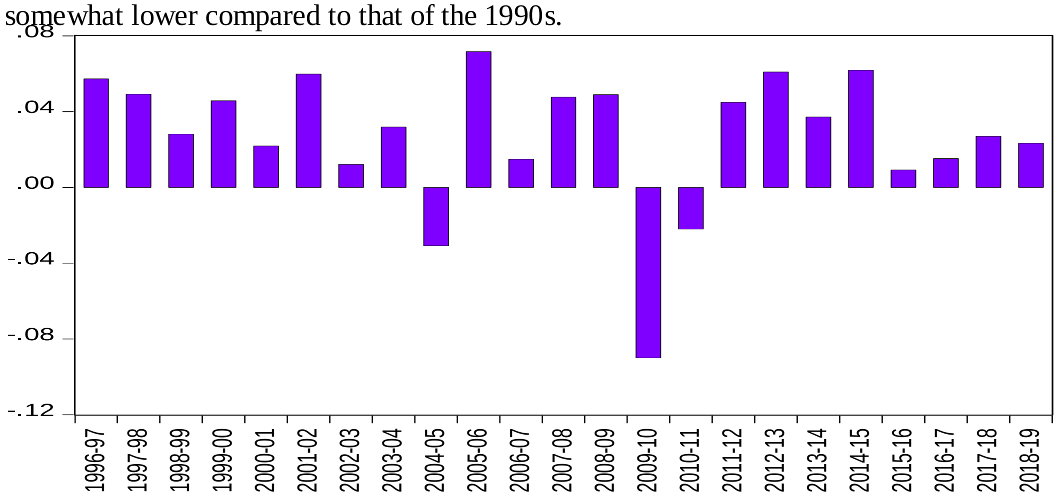


Figure 2: Growth trend of Total Turn Over in DSE

The growth of total issued capital was on top in the 2009-12 years, later it has been lowering to a very minimum level. Currently, the growth rate of total issued capital is around 2-3 percent. New companies should be enlisted in the stock exchanges, especially, the companies with good fundamentals and good operational records in the business. Now, the foreign companies that are operating in the country should be highly encouraged to come forward in the capital market.

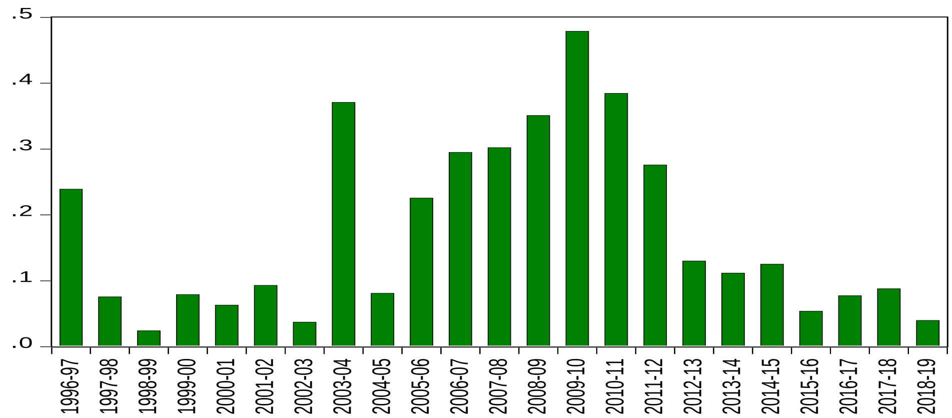


Figure 3: Trend of Growth of Total Issued Capital in DSE

After discussing a promising indicator of the growth of the capital market, the total number of companies seems to be more volatile, as the growth rates were not stable or did not follow any trend in the past years. From 2007 to 2009, there were many companies listed in the stock exchanges with political sanctions and liberalization of the policies to get enlisted in the capital market.

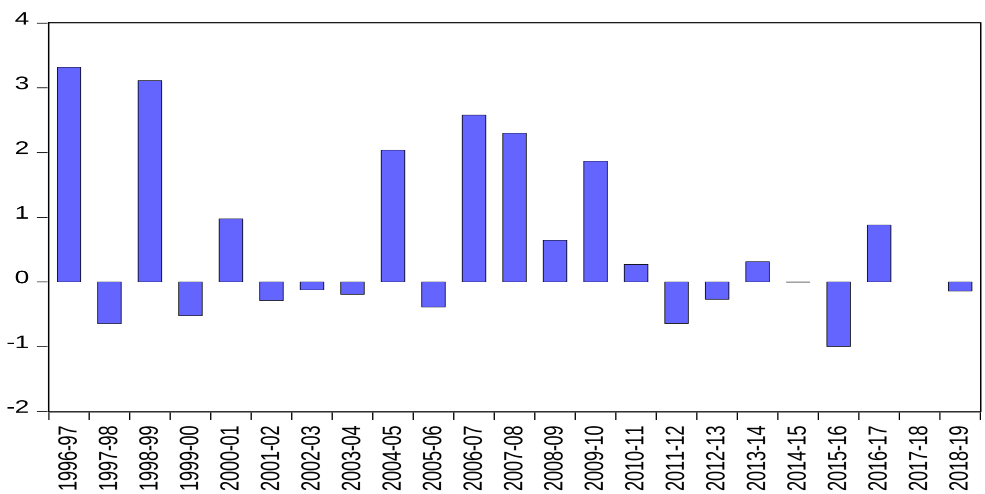


Figure 4: Growth trend of Total Number of Companies in DSE

The fluctuations and variability in the growth rates based on those four indicators are subject to few issues of the capital market of Bangladesh. A number of analysts and market players were asked about the factors behind these variabilities and fluctuations. The first factor is the investors' awareness of the market condition. Investors may become more confident if there are more companies including local and foreign, listed and transacted in the capital market. Moreover, the government-owned firms should be privatized to secure more positive growth of the market. So these all linked to investors' confidence. Secondly, one of the capital market instruments, mutual funds, can be a great source of confidence for investors in the market of information asymmetry. In this area, asset managers can play a major role in the audit and evaluate the better companies in the market.

The fluctuations and variability in the growth rates based on those four indicators are subject to few issues of the capital market of Bangladesh. A number of analysts and market players were asked about the factors behind these variabilities and fluctuations. The first factor is the investors' awareness of the market condition. Investors may become more confident if there are more companies including local and foreign, listed and transacted in the capital market. Moreover, the government-owned firms should be privatized to secure more positive growth of the market. So these all linked to investors' confidence. Secondly, one of the capital market instruments, mutual funds, can be a great source of confidence for investors in the market of information asymmetry. In this area, asset managers can play a major role in the audit and evaluate the better companies in the market. It is necessary to set a momentum to identify and unlock the catalysts of change in the current capital market in Bangladesh. To do so, we may take lessons from emerging and developed capital markets across the world. Many countries including Hong Kong, Malaysia, and Singapore capitalize demutualization and listing of exchanges to bring innovation in equity capital development. France initiated reform of the system to modernize its bond issuance system which spurred the growth of the bond market in that country. It is also emphasized to increase the education level of the investors and their awareness about the capital market investment. In addition to that, privatization of government holdings also increases the capital market size and functionality in the long run.

5. Conclusion

There is a dearth of effective application of the rules and regulations to control the capital market in Bangladesh. Lacks of investor's awareness and intensive rumor based market transactions have made the market more vulnerable to instability.

5.1 Recommendations

The recommendations derived from the analysis and findings of the four variables of capital market growth in Bangladesh are stated in the following:

- We should try to increase issuer participation by listing or privatizing government-owned entities, promoting capital markets for financing infrastructure and the development of fast-growing small companies outside of conglomerates.
- The asset management companies should audit their books of accounts in line with the aspirations of the financial reporting council.
- We should think of ways to help the listed companies, especially the large listed companies, to increase their revenue by reducing the multi-layer tax on dividends.
- We should think of ways to help the listed companies, especially the large listed companies, to increase their revenue by reducing the multi-layer tax on dividends.
- We need to build momentum by identifying and unlocking the catalysts of change in the capital market.

REFERENCE

1. Amu, C.U., Nwezeaku, N.C., and Akujuobi, A.B.C. (2017) Impact of capital market growth on economic growth and development in Nigeria. *International Journal of Information, Business and Management*, Vol. 9, No.1, pp. 244-257.
2. Bangladesh Bank. (2017). Capital Market Developments in Bangladesh [online]. Available at https://www.bb.org.bd/pub/quaterly/capital_market/oct-dec2017.pdf
3. Coşkun, Y., Seven, U., Ertuğrul, H.M., and Ulussever, T. (2017). Capital market and economic growth nexus: Evidence from Turkey. *Central Bank Review*, Volume 17, Issue 1, pp 19-29. https://doi.org/10.1016/j.cbrev.2017.02.003
4. Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). 2nd Ed. Thousand Oaks, CA: Sage
5. Haque, S. (2019). The need to transform the capital market [online]. Available at https://www.thedailystar.net/supplements/strong-institution-good-governance/news/the-need-transform-the-capital-market-1702090
6. Hossain, M.S., and Islam, M.S. (2019) "Stock Market Development and Economic Growth in Bangladesh: An Empirical Appraisal," *International Journal of Economics and Financial Research*, Academic Research Publishing Group, vol. 5(11), pages 252-258, 11-2019.

7. Islam, F.T., Mostofa, M.S. and Tithi, A.A. (2017). Macroeconomic and Institutional Determinants of Capital Market Performance in Bangladesh: A Case of Dhaka Stock Exchange. *International Journal of Academic Research in Finance, Accounting and Management Sciences*, Volume 7, Issue 1, pp. 306-311. DOI: 10.6007/IJARAFMS/v7-i1/2705.
8. Rapp, M.S. and Kaserer, C. (2014). Capital markets and economic growth: long-term trends and policy challenges [online]. Available at https://biva.mx/documents/30877/866719/BIVA+Capital+Markets+and+Economic+Growth.pdf/5569153f-4c9e-987e-e61f-3dfb9ebbaa53
9. Rashid, M. (2018). Bangladesh Capital Market: Looking Back, Looking Forward… [Online]. Available at https://www.daily-sun.com/post/300762/2018/04/08/Bangladesh-Capital-Market:-Looking-Back-Looking-Forward%E2%80%A6

Proposed Model on E-Maternity Service in Bangladesh

Tahsina Afsana[1]
Md. Ashraful Islam[2]

Abstract: *The world is getting more digitize day by day. Every sector in Bangladesh is getting more digitize and solve many problems with the efficient solutions. In Bangladesh, every year thousands of mother and baby have died because of the lack of maternity care and lack of ignorance. In this twenty first century, where scientists are making robots who can talk with people by it. It's very sad that the mothers in our country are still dying for lack of care and maternity service. So it's time to use such a system which can be take care of the mother at the very beginning of their pregnancy and after the birth it will also take care of the baby. E-maternity service is such a system and in this research we tried to analysis this system, as well as on the basis of the analysis we designed the E -maternity service system to introduce in Bangladesh.*

Keywords: *Maternity, E-maternity, Pregnancy, Service, Bangladesh.*

1. INTRODUCTION

In recent years, researchers and designers have given much consideration to the specific needs that arise as individual transition from one life stage to the next, and many technology products have been developed to address those needs. For example, several learning tools have been designed to aid children and their teachers as formal education begins. Despite this growing trend to research and design for specific life stages, few have investigated the life stage that begins when a woman become pregnant. Maternal and child health continue to be largely overlooked aspects of healthcare system leading to major risks associated with pregnancy and child birth. This could be associated to lack of awareness and inadequate health- care facilities such as skilled personnel, infrastructure and access to medicines and emergency care when needed. As per the maternal mortality fact sheet published by World Health Organization (WHO) in 2015, it is estimated that a little over eight hundred women die every day from treatable complications pertaining to pregnancy and most of these deaths occur in regions with low socioeconomic conditions.

[1] Msc Student, Bangladesh University of Professionals (BUP).
[2] Associate Professor and Dean, School of Engineering; University of South Asia.

Severe loss of blood, infections, high blood pressure, and transmission of sexually transmitted diseases to newborns, post delivery complications and unsafe abortion are some of the most commonly occurring preventable or treatable complications related to pregnancy and childbirth. Lack of adequate antenatal and postnatal care would lead to neonatal deaths which reflect the issues such as ; inequities in availability of emergency obstetric care, care after delivery, newborn care, training to improve overall health, diet intake, lack of preparation for an emergency such as selected blood donor, transportation system, new born feeding and care and hygiene behaviors (1). These issues can be solved by taking proper care during pregnancy and after the birth of baby. For solving these several problem maternity service is not enough. In this situation, an electronic device system is badly needed which will give a guideline in her daily life of a pregnant woman , change the whole experience of pregnancy and help to change the current perspective about pregnancy care and child care. In this research, we discuss the needs of women as they enter the "growing families" life stage-the time beginning when a woman becomes pregnant, through the first one year of her child's life. This study focuses on the nonclinical needs of women and families in the Bangladesh and its implications are for the development of personal technologies to aid growing families. Here are some particular objectives which will be served by this study are: To give a proper guideline, from beginning to end of the pregnancy for making them more confident. To give the right information with a shortest time period. To keep reminding all the checkup date, vaccination date of mother and baby to reduce mother's anxiety. To identify healthy foods for pregnant mother and her baby. To reduce the mortality rate by providing all the information about hospital, blood donor, the transportation system during emergency. To recognize with the baby's automatic birth registration system.

E-maternity services refer those maternal services which are functionalized by an electronic medium such as a mobile application or a software system. In this research, we are introducing a system for maternal care. This system will act like a second doctor for pregnant women. In developing country like Bangladesh, maternal care or antenatal care is always neglected due to ignorance. Bangladesh is a country with over one third of the population living in poverty and another one third living just above poverty level. The World Health Organization (2010) indicates that Bangladesh has poor prenatal and postpartum care, nutritional deficiencies, and the second highest maternal mortality and morbidity rates next to sub-Saharan Africa. (1) Women living in Bangladesh are at high risk for maternal mortality and morbidity in the postpartum period directly related to socio-economic status. In these circumstances, a total maternity care for everyday life beside a regular doctor checkup is very important and this work is done by "e-Maternity services" system. This system will help to reduce mortality rate and give a proper guide line from the beginning to end journey of pregnancy.

E-maternity services are a system which is designed by many attributes that helps pregnant women in her pregnancy period and after the birth of baby. In this system, it stored all the information in its database on the basis of input which will be operate by an admin. This system is consists of two interface, one is for the users and the other is for the admin. This system works by the help of the information given by the pregnant mothers. That information will keep in the system's database and the system works according to the information.

2. REVIEW OF THE LITERATURE

Maternal mortality ratio in Bangladesh is still very high, in this way, a priority health and development issue. This study aims to introduce a digital maternal care service along with the maternal health care situation in Bangladesh. The majority of childbirth takes place at home by unskilled persons in Bangladesh. Many researches already have done about this and the purpose of one of this research was to strengthen maternity care services through provision of skilled midwives and to explore people's perception of skilled birth attendants. As part of a quasi-experimental community trial conducted among selected urban area of Dhaka city, between January to December 2002, a group of skilled midwives were posted in selected urban centers to provide obstetric care services and some social mobilization activity in the community. Analysis of skilled midwives self-reported case records and monitory reports of the researchers was done on selected themes. Among the people the perception of the skilled midwife was not clear. They thought traditional birth attendants who conducts delivery over years were skilled midwives. Preparedness for obstetric emergency and birth planning was non-existent in the families. The skilled midwives were well accepted in the community but discouraged by center authority for home birth, apprehending that it will reduce their client flow and earnings. Non-cooperation by other health care providers was common (2). Maternal or child care is a core discipline of the specialty of Family Medicine. The scope of practice for family physicians in maternity or child care may range from only managing medical problems during pregnancy, prenatal care only, or comprehensive care of low-risk pregnancy to comprehensive care of high-risk pregnancy, including performing cesarean deliveries (3). Maternal health is important because we know that maternal health prevents disabilities and we also know that prevention is easier and more cost effective than setting up programs for people with disabilities. That's not even taking into consideration the incalculable costs to families of break ups, lack of education for children, marginalization, loss of income, and even loss of life. Women are the foundation of so many communities. Studies have shown that working with women, increasing their income and education, is the best way to positively impact a community. That is not only in Africa or Latin America – but in Canada as well. Any such program directed towards women will fall short if there is inadequate health care (4). Bangladesh has made significant improvements in the health of women and children and has achieved its Millennium Development Goal (MDG) 4 (to reduce child mortality) and is on track to MDG 5a (to reduce maternal mortality).(5) In 2010, the United Nations recognized Bangladesh for its exceptional progress towards MDG 4 and 5a to reduce child and maternal mortality in the face of many socioeconomic challenges.

The primary objective of the "Success Factors for Women's and Children's Health" was to identify factors both within and outside the health sector that have contributed to the reductions in maternal and child mortality in Bangladesh, with an emphasis on how improvements were made, what key policy and programmatic strategies were adopted, and how these were adapted and tailored to the unique context of the country. Consultations and input from key health and development stakeholders and experts ensured that the review represented a comprehensive synthesis of evidence, knowledge and experiences. Specifically the review strived to undertake: firstly policy analysis that focuses on content of policy, actors, context and processes secondly accurate synthesis of the factors, catalysts and contexts that contributed to reductions in maternal and child mortality thirdly an analysis of factors both within the health sector and outside of the health sector – with an emphasis on linkages between health and other sectors and lastly an examination of lessons learned and future priorities. About 31 lakh births per year occur in the country. Of these, about 11 lakh (37.8 percent) of births are in the health center and 2 million (62 percent to 2 percent) in the home of the inefficient midwife. In the time of childbirth and postpartum complications, there are 170 maternal deaths per lakh of births. That means thousand 270 mothers of babies die each year due to birth. In 2011, the child mortality rate was 35 per thousand, in 2015 it was 29 and the rate is decreasing in the following year. (6) Bangladesh is aiming for a fully digital government health service by 2016 (7). In 2012, all health facilities in rural areas were given wireless broadband and laptops, and government community health workers received tablet devices (8). With NGO support, this enables the collection of quality health data on subjects such as pregnancy, children under 5 and birth and death (9). Mobile phone and eHealth technology has been used to improve reporting, data collection, access to data, data storage and referrals. The Government's routine health information system (RHIS) has successfully piloted the use of electronic reporting at both the facility and community level. In pilot areas, this resulted in a 100% reduction in manually generated patient forms at sub-district facilities and 60% reduction in reports at the community level. Patients have benefited from new services, including a 24/7 mobile phone link for people in rural areas to an on-duty physician, and weekly text messages offering pregnancy advice to registered mothers (10). New technology now supports 28 telemedicine centres, with another 15 planned for 2014.(11) In education, school pupils are using the internet to hear online lectures from external teachers and to access eBooks online (12). In the agricultural sector, Grameen Intel Ltd. has begun providing farmers with customized information on seed selection, soil and fertilizers via mobile phone (13). The preliminary results of the Bangladesh Maternal Mortality and Health Care Survey (BMMS) released on 22 November 2017 in Dhaka showed that the maternal deaths were 196 per 100,000 live births in 2016 when the survey was carried out. It was 194 in 2010 when Bangladesh witnessed a steady decline in maternal deaths from 322 in 2001.But, in 2016, a total of 50 percent of births were attended by trained health professionals compared with only 27 percent in 2010.An analysis of the survey points to the 'low quality of care' for this increasing rate of mortality despite women seeking medical care. It comes as a shock to most health experts as Bangladesh was once globally acclaimed for cutting maternal deaths (14). There is considerable lack of awareness about maternal and reproductive health in Bangladesh. In this case there is no difference between young and old women. Poverty is not the main problem here. The lack of awareness among them is one of the reasons. If we raise awareness, it is possible to make further progress in preventing maternal death. Only increasing awareness and care in the delivery time are not the solution of this increasing mortality rate. Now it's time to handle the situation with technology and digital tools to create awareness and to take proper care. The world is getting more digitize day by day. So, why not the maternity care sector in Bangladesh. In many country like Australia, Netherland, England, USA has made their maternity care digitize as a result their mortality rate of mother and baby during pregnancy are very low. It's a time for us for creating such a system by which a mother will be taken care of with the technology. Unbiased information should be made available to all women to help them make their decision and develop their care plan. This should be through their own digital maternity tool, which enables them to access their own health records and information that is appropriate to them. "E-maternity service" is such a tool for the mother. The specific needs of information about pregnancy, child birth and early child rearing are unmet in our country. Technology or a digital tool is, in many cases, the most likely solution for those needs. Although many information about pregnancy is available on the internet but there is a strong needs of getting the right information at the right time. "E maternity service" will provide them that information at the right time and it's a great medium to create awareness in our country. When mothers in our country will be conscious at the very beginning of her pregnancy the mortality rate will be declined again in our country. And for the consciousness E maternity service will play a great role in our country like other countries.

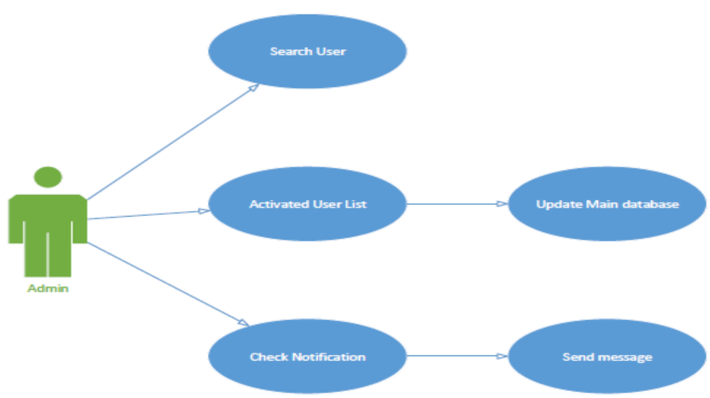
3. METHODOLOGY

For analyzing this system and to understand the working procedure, we have to divide the whole system into three diagrams. They are:

- Use Case Diagram (For admin)
- User Activity Diagram (For mother)
- User Activity Diagram (For baby)

Use Case Diagram (For admin)

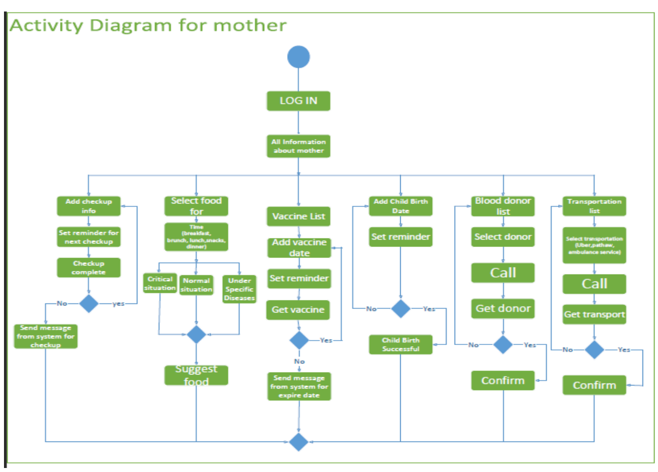
Use case diagrams are usually referred to as behavior diagrams which is used to describe a set of actions of a system in collaboration with one or more external user. The admin's working procedure has shown with a use case diagram. In use case diagram admin is the actor. Actor is the user that interact with the system. In use case diagram admin interact with our system to describe a set of actions of use cases. Use cases are represent different set of actions that a user or an actor may need. Search user, activated user list, update main database, check notification, send message are the use case of the system which will be needed by the admin.



Use Case Diagram (For Admin)

User Activity Diagram (For mother)

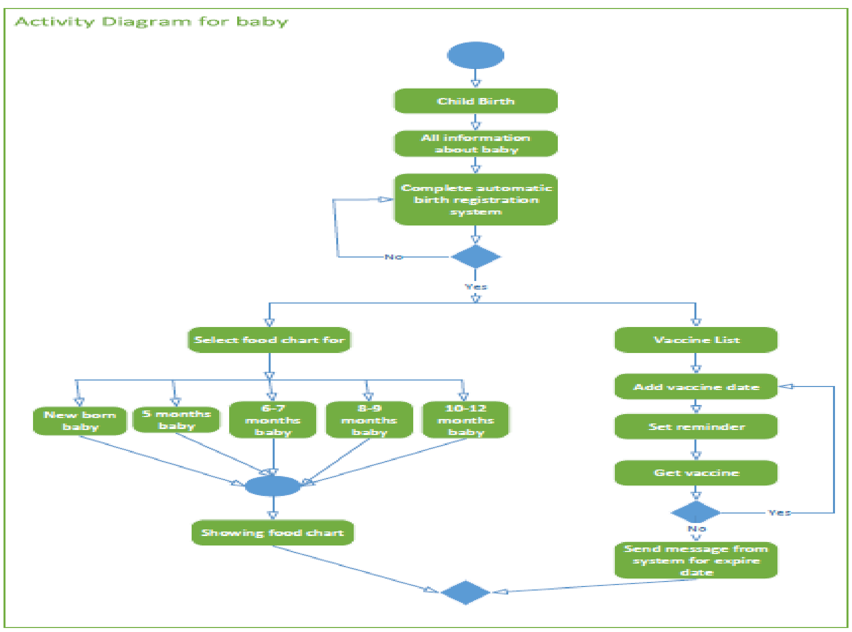
An activity diagram visually presents a series of actions or flow of control in a system which is similar to flowchart or data flow chart. In our system we use a activity diagram to show the data flow or working flow of the system. The activity has started at the initial point of the system. The user have to login to the system where all the information about the mother would store before. Then the activity or action state will start working with the action flow in the system. Add first checkup information of a mother and then set reminder for the next checkup. At the next checkup date, if the user would complete the checkup and add new checkup info the system will take the next reminder for checkups. If the user wouldn't complete the checkup, a message will come from the system for the expired date of checkup. And the system will not work until when the user has added the checkup info. This system suggest nutritious food items for everyday in breakfast, brunch, lunch, snacks, dinner. For this the user has to select food for the relevant time and also select under which condition of health, then our system will process all the info and give them suggestion for food. Vaccination process and Delivery section will work in the same way. First the user have to add the vaccination and set a reminder. Our system will give reminder for the next vaccination date if the previous vaccination has completed. If not, then a message will come from the system for the expire date of vaccination. The Delivery section will be work in this way. For any critical situation blood donor's information will be stored in the blood donor list and also stored some blood donor group or page link of facebook. The user have to select donor and then call. If the user get donor then they have to confirm the system and if not, the system will take them to the user list again. In transportation list, the system will be suggest the nearest transport system by UBER, PATHAO or in case of an emergency there will be a list of ambulance service. The user have to select the preferable transport system and then call. If the user get transport they have to confirm the system and if not, the system will take them to the transport list again. When all the process of the user activity diagram(for mother) have completed the process will be connected with the another user activity diagram(for baby) for further procedure of the system.



User Activity Diagram (For Mother)

User Activity Diagram (for baby)

The user activity diagram (for baby) will start working when the baby is delivered. After the delivery of the baby the information will require all the information about baby. When the user or the mother will give all the information related to the baby the information will require the completion of baby's automatic birth registration. At this process, if the baby's automatic birth registration system has done the system will allow the user to go to the next process. If a user wouldn't complete the baby's automatic birth registration, the system will not allow the user to proceed and send message to complete the automatic birth registration system. Now when a baby's automatic birth registration will be complete, the user can see the food chart for baby by selecting the food chart and then the system will show the food chart for the selected area. Now at this stage the activity diagrams are done partially for this partial study of the system. The process will not be completed, the process will be open for further study and research and adding more functions in future.



User Activity Diagram (For baby)

4. CONCLUSION

My intention with this research was to demonstrate the needs and potential technology solutions to the specific life stage that begins when a woman becomes pregnant. Although this study was a very small part of a vast process and exploratory by nature, but this system demonstrates the real and fundamental user needs of Bangladesh. The system which I proposed in this research, will be very beneficial and effective on the current circumstances of our country when our government is struggling for reducing the mortality rate during pregnancy of the mother and the baby. This system will take care of mother with technology from the beginning stage of the pregnancy, create awareness and make a mother conscious about her checkup, nutrition, vaccine, delivery, transportation system. In our country the main problem is ignorance about pregnancy in most cases. This system will provide some tool for mother and baby which will create awareness as well as will be helpful to lead a healthy life. The system which is articulated here will be served as starting points for others interested in researching and developing technology for the pregnancy life stage.

5. RECOMMENDATION FOR FUTURE WORK

The recommended future work for this research:

- In pregnancy the mothers and after the birth the babies would face a great difficulty for different kind of diseases. In future we will work for the diseases section.
- In this research we have introduced a new system and that is baby's automatic birth registration system. As it has not launched yet in Bangladesh so our work has limited with this system. In future we will modify this automatic birth registration system and we will connect this automatic birth registration system with the national database.
- I hope that others will use this research, add to it and begin to develop solutions that address the specific needs of pregnant mother and her baby.

REFERENCE

1. Importance of Maternal and Child health Training Programs, James Lind Institute , December 27,2016, https:// www.jliedu.com/blog/importance-of-maternal-and-child-health-training-programs/
2. Access to Skilled Care at Home during Pregnancy and Childbirth: Dhaka Bangladesh, Tasnim S, Rahman A, Shahabuddin AK, Int Q Community Health Educ. 30(1):81-7, 2009-2010
3. AAFP. (2012). Maternal/Child Care (Obstetrics/ Perinatal Care). *AAFP Policies*. http:// www.aafp.org/about/policies/all/ maternal-child.html. Accessed 1 July 2016.
4. The importance of maternal health, cbm, March 08, 2012, blog. cbmcanada.org/ general/the-importance-of-maternal-health/

5. Health Bulletin 2012. Dhaka: Directorate General of Health Services; 2012. http://dghs.gov.bd/bn/licts_file/images/Health_Bulletin/HealthBulletin2012_en.php (accessed October 2014).
6. Success Factors for Women's and Children's Health: Bangladesh, Ministry of Health and Family Welfare, Bangladesh, Partnership for Maternal, Newborn & Child Health, WHO, World Bank and Alliance for Health Policy and Systems Research. (2015). www.who.int/pmnch/knowledge/ publications/bangladesh.pdf
7. Perspective Plan of Bangladesh 2010-2021: Making Vision 2021 a Reality. Bangladesh: Government of the People's Republic of Bangladesh; 2012. http://www.plancomm.gov.bd/wp-content/uploads/2013/09/Perspective-Plan-of-Bangladesh.pdf (accessed October 2014).
8. Bangladesh Demographic and Health Survey 2007. Dhaka: National Institute of Population Research and Training, Mitra and Associates, and Macro International; 2009. http:// dhsprogram.com/pubs/pdf/ FR207/FR207 [April-10-2009]. pdf (accessed October 2014).
9. Birth Registration in Bangladesh. Geneva: The United Nations Children's Fund; 2010. http:// www.unicef.org/bangladesh/ Birth_Registration (1). pdf (accessed October 2014).
10. Service Overview. In: Aponjon: MAMA Bangladesh. Bangladesh, 2014. http://aponjon.com.bd/Content.php? MId=36&SubMId=24 (accessed October 2014).
11. Bangladesh Health Bulletin 2013. Mohakhali: Government of the People's Republic of Bangladesh: Ministry of Health and Family Welfare; 2014. http:// hpnconsortium.org/admin/essential/HB_2013_final_-_Full_version_1March14.pdf (accessed October 2014).
12. Access to Information: Multimedia Classroom. In: Prime Minister's Office. Bangladesh, 2013. http:// a2i.pmo.gov.bd/ content/multimedia-class-room (accessed October 2014).
13. Grameen Intel Social Business. Dhaka, Bangladesh; 2014. http://www.grameen-intel.com/products/ (accessed October 2014).
14. https:// bdnews24.com/health/2017/11/22/shock-as-survey-finds-maternal-deaths-up-in-bangladesh.

Study on Jute and Acrylic Blended Wear Is Comparatively Better than 100% Jute Wear

Md. Asib Iqbal[1]
Nazmina Chowdhury[1]
Md. Taher Ali[2]
Sonia Akter[2]

Abstract: *Fabrics constructed with jute-acrylic blended yarns are good for clothing used for winter wears. Necessary chemical treatments are given to modify their chemical properties. Knitted fabric with the commercially available jute and acrylic yarn and chemically modify the fabric in order to improve its properties and appearance, mainly its crease resistance, drape, bursting strength and thermal conductivity and to interpret the results as well as to sew the garments.*

Key words: *Degradable, Woollenisation, Retting, Polishing, Respectively and Crease.*

1. INTRODUCTION

Jute is a long, soft, shiny vegetable fiber that can be spun into coarse, strong threads. It is produced primarily from plants in the genus Corchorus, which was once classified with the family Tiliaceae, and more recently with Malvaceae. The primary source of the fiber is Corchorusolitorius, but it is considered inferior to Corchoruscapsularis.[1] Jute has many advantages as a home textile, either replacing cotton or blending with it. It is a strong, durable, color and light-fast fiber. Its UV protection, sound and heat insulation, low thermal conduction and anti-static properties make it a wise choice in home décor. Also, fabrics made of jute fibers are carbon-dioxide neutral and naturally decomposable. These properties are also why jute can be used in high performance technical textiles.[2] Acrylic fibers are synthetic fibers made from a polymer (polyacrylonitrile) with an average molecular weight of -100,000, about 1900 monomer units. For a fiber to be called "acrylic" in the US, the polymer must contain at least 85% acrylonitrilemonomer. Typical comonomers are vinyl acetate or methyl acrylate. DuPont created the first acrylic fibers in 1941 and trademarked them under the name Orlon.[3] Acrylic is lightweight, soft, and warm, with a wool-like feel.[4] As acrylic is a synthetic fiber, the larvae of clothes

[1] Scientific Officer, Bangladesh Jute Research Institute, Dhaka-1207
[2] Department of Textile Engineering, The Peoples University of Bangladesh.

moths are unable to digest it. However, acrylic fibers that are blended with wool or soiled may be eaten as a consequence of having blended fibers.[5]

Finding a new material with desired properties, it is easier to explore into a deep insight of what is available, the natural fibers. Almost all natural fibers are biologically degradable and possess excellent wearable properties. Researchers are being carried out in two phases, one to find high tech materials for advanced applications and the other to enhance the properties of nature gifted materials to common usage. Acrylic is a synthesized fiber, which possesses properties similar to wool and is extensively used for the manufacturing of sweaters in a cost effective manner. This could give a vast production with reduced market costs. Still usage of acrylic is common because of its easy care. The thermal maintenance of the fiber is also excellent so that it could give warmth of above what had been expected. Acrylic being a man-made polymer fiber it also suffers the same non-biodegradable problem. This would become a serious issue in near future and works to find materials that could replace this are done at a least magnitude. Research papers have been published that explores the desirable properties such as high strength, fiber length, tenacity, etc. Jute also possesses a certain degree of thermal retention that can be improved, which makes it suitable for the production of much cost effective winter wears. The main limitation of the fiber that inhibits its usage is its brittleness which yields high haired yarn when spun and also gives harsh feel when worn. Jute has many advantages as a home textile, either replacing cotton or blending with it. It is a strong, durable, color and light-fast fiber. Its UV protection, sound and heat insulation, low thermal conduction and anti-static properties make it a wise choice in home décor. Also, fabrics made of jute fibers are carbon-dioxide neutral and naturally decomposable. These properties are also why jute can be used in high performance technical textiles.[6]

2. MATERIALS AND METHODS

Fabric manufacturing: The fabric is knitted in flat bed knitting machine with the different particulars.

Chemical processing: Wetting agent=1%, Caustic soda= 10% and Acetic acid=1.5%**.** In order to modify the surface characteristics of the jute and acrylic, it is subjected to various treatments with chemicals to improve the feel and hand without affecting other desirable properties. Based on the previous studies made it was reported though woollenisation enables lateral swelling of fibers, a great strength loss occurs due to the excessive removal of pectin that acts as the binder molecules. Hence, it is important to assess the properties and feel of fabrics treated. So, the samples are to be processed in two categories one with woollenisation and the other without that. It has performed in BJRI lab.

Washing: The yarns are initially soaked well with detergent (2%) in order to remove the contaminations, M: L ratio is 1: 10 temperature $80^{o}c$ for 30 minutes. Raw jute during retting process undergoes biological degradation of binding materials and the residue is in the dispersed form within the molecules of jute. Also it is composed of micro dust particles that inhibit the process in advanced stages. The samples are weighed initially and then wetted before impregnating in the wash bath. The samples are processed with following concentrations of liquors:

Scouring: Scouring is the process of removing the foreign contaminants in the material such as grease, stains etc and is accomplished with Caustic soda in common, for cotton fibers. Jute fiber is very sensitive to caustic soda and major implications such as structural variations, drop in tensile strength are reported. Hence, utilization of strong alkali is eliminated and mild alkalis such as sodium carbonate, potassium carbonate are utilized for scouring process of jute/cotton blends. Initially, the fabric samples are weighed in order to assess the Dimensional Stability of the material when subjected for various chemicals.

Woollenisation: It is the process of subjecting jute acrilic blended material with strong concentrations of Caustic Soda, inferred with the occurrence of lateral swelling and longitudinal shrinkage, as a result of which the fiber is softened to touch and develops a high degree of crimp. It was reported that the woollenisation effect is enhanced with increase in concentration and decrease in temperature but a pronounced decrease in weight up to 15% and in strength of about 40%. Also the color of the fiber changes from pale yellow to brown. The optimized concentration that can be used is derived from various articles and the parameters are set. The degree of Woollenisation increases with decrease in the bath temperature and is efficient under cold conditions. However, the strength loss becomes excessive under these conditions. One sample in each blend is subjected for woollenisation treatment, under specified parameters to assess the quality of woollenised and non-woollenised fabric.

Bio-polishing: Applications of biotechnology in textile processing industry in the form of enzymes is gathering momentum in recent days due to their reliability, specific activation conditions, reusing if effluents and single bath processing methods. Bio-polishing is found more appropriate in improving the surface characteristics to bring out the soft feel and comfortness during wear. Literature comprising Enzymatic Polishing of Jute is limited.

Dyeing: Dimilarities in the properties of jute and acrylic and their constituent material make it is not possible to apply the same dye for them. All dyes that are applicable to jute and in this consideration, hot brand reactive dyes and basic dye are used due to their shade depth and fastness properties. The samples are dyed in open bath beaker dyeing machine. Sodium chloride salt is added in two weights after every 20 minutes dyeing for better exhaustion of dye into the fibers. After dyeing the samples are subjected for hot and cold wash and finally dried.

Observations: It was observed that the feel of the woollenised samples, when dehaired and consecutively singed provides desirable results. Other non-woollenised samples are also good but still the feel and strength based parameters are lesser than that of woollenised one. Hence for processing the fabric in bulk for garmenting purpose, the woollenised recipe is used and the fabric is subjected for various tests to obtain its technical properties.

Testing: There are three tests to be conducted on the original and processed jute cotton fabric to assess its performance. They are: Crease recovery, Drape and Bursting strength.

Crease recovery: This test could be done with the disc type equipment called Shirley Crease Recovery tester. The fabric has to be cut for the specified dimensions, to be kept under specified pressure and to be mounted between the clamps. The angle to which the sample recovers is noted. The specified conditions to conduct this test are:

- Test room temperature - 27ºC
- Test room RH% - 65%
- No of specimens - 8 (wale and course wise)
- Specimen dimensions - 2" x 1"

Drape: This test is conducted in equipment called Drapemeter, which consists of two round discs. The large disc to prepare samples and the shorter one to mount the samples. It has a light source from bottom to project the area occupied by the samples. The projected area is marked in a paper of uniform gsm and is weighed. Then the drape coefficient is calculated as follows:

F = (Ws – Wd)/(Wd – WD)
Where,
Ws - Weight of actual projected area

Wd - Weight of specimen
WD - Weight of supporting disc.

- Test room temperature - 27º C
- Test room RH% - 65 %
- No of specimens – 6
- Specimen dimensions - 10" circular

Bursting Strength

The bursting strength can be found out by following the procedure mentioned in IS 1966 – 75. The specified test conditions are as follows:

- Test room RH: 65 ± 2 %
- No of specimens : 6

Thermal conductivity test

The Thermal Conductivity Coefficient of the jute cotton fabrics are evaluated using two disc tester at the Physics Laboratory, PSG College of Technology. The fabric is mounted between the two discs and the upper disc is heated with hot water. Thermometers at each disc are noted keenly so that the time for every centigrade fall is obtained with a stop clock.

3. RESULTS AND DISCUSSION:

This chapter deals with the results of various tests conducted for the chemically modified jute acrylic blended fabrics. Crease resistance of modified jute acrylic blends: Crease resistance angle for processed fabric in 40/60 and 50/50 blend decreases by 27.31 % and 32.33% respectively than that of original fabric. Decrease in crease resistance improves the creases in fabric that imparts smooth feel.

- Drape coefficient of jute acrylic blends
- Weight of supporting disc, Wd: 5.67
- Weight of specimen, Wd : 2.08

Drape co efficient of 40/60 blend increases by 21.02% compared with original whereas in 50/50 blend it is only 3.4% that of original. This increase enables the fabric to be best suited for apparel sewing.

Bursting strength of jute-acrylic blends: Bursting strength of the 40/60 blend decreases by 12.02% with original whereas it gets a pronounced increase by 10.04% in 50/50 blend when compared with the unprocessed original fabric. The subjective wear trial technique is used for the assessment of comfort and hand related properties of the garment constructed with the modified jute acrylic blended fabric. Ten persons are trained to assess the fabric parameters initially and by conducting a model hand test method, three persons whose results were within the acceptable limits are chosen for the wear study. The persons were asked to wear the garment for 20 minutes inside a room with controlled temperature of 20$^{o.}$C and were given evaluation sheets to obtain the personal measurements of comfort and other properties. The subjects were directed to carry their daily activity in the room and for every 5 minutes they are questioned about the parameters and the reports were established. The results obtained were best compare to 100% jute sweater.

4. CONCLUSION

From all condition,

Based on the results and discussion, the following conclusions are made:

Table 1: Crease resistance, Drape coefficient and bursting strength of 40/60 blend and 50/50 blend

S. L. No.	Properties	40/60blend	50/50 blend
01	Crease resistance	27.31	32.33
02	Drape coefficient	21.02	3.4
03	Bursting strength	12.02	10.04

Crease resistance angle for processed fabric in 40/60 and 50/50 blend decreases by 27.31 % and 32.33% respectively than that of original fabric. Decrease in crease resistance improves the creases in fabric that imparts smooth feel.

- Drape coefficient of jute acrylic blends
- Weight of supporting disc, Wd: 5.67
- Weight of specimen, Wd : 2.08

Drape co efficient of 40/60 blend increases by 21.02% compared with original whereas in 50/50 blend it is only 3.4% that of original. This increase enables the fabric to be best suited for apparel sewing.

Bursting strength of jute-acrylic blends: Bursting strength of the 40/60 blend decreases by 12.02% with original whereas it gets a pronounced increase by 10.04% in 50/50 blend when compared with the unprocessed original fabric.

The 10 persons were asked to wear the garment for 20 minutes inside a room with controlled temperature of $20^{o.}$C and were given evaluation sheets to obtain the personal measurements of comfort and other properties.

Thus, through this research the author conclude that fabrics constructed with jute- acrylic blend yarns are best suited for clothing used for winter wears, provided necessary chemical treatments were given to modify its chemical properties.

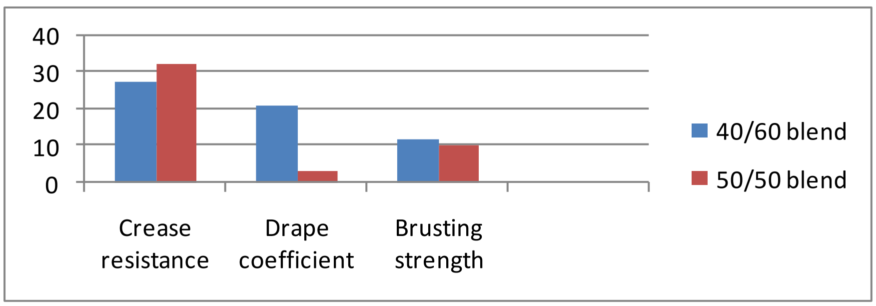


Fig 1: Crease resistance, Drape coefficient and bursting strength of 40/60 blend and 50/50 blend

REFERENCE

1. Riaz A.; Rahman M. S. (2016). Routledge Handbook of Contemporary Bangladesh. Routledge. p. 165. ISBN 978-1-317-30876-8.
2. “Real GDP Growth: Annual Percent Change”, www.imf.org. International Monetary Fund. Retrieved 3 October 2019.
3. https://www.thedailystar.net/news-detail-62625
4. https://bb.org.bd/sme/index.php
5. Rahman M., Aslam M. N. H.., Sultana J., Salam M. A., (2013). Study of Small and Medium Enterprises (SME) Products in Bangladesh: Performance and Quality Improvement of a Selected Product. International Journal of Scientific & Engineering Research, 4(1), http://www .ijser.org

6. Ahmad F.U & Jahan S.M. (2016). Light Engineering Business Ecosystem in Bangladesh: A Study on Institutional Preparedness. IOSR Journal of Business and Management, 18(12), Ver. III, pp. 16-26
7. www.smef.org.bd/v2/index.php/sme-foundation
8. https://www.thedailystar.net/country/bangladesh-light-engineering-sector-product-of-2020-1848043
9. http://bida.gov.bd/?page_id=2306

United Nations Security Council on Rohingya Issues: Socio-Economic Impacts of Bangladesh

Md Tanjim Mondol[1]

Abstract: *The United Nations is at a standstill in resolving the Rohingya crisis that began in August 2017. The purpose of this article is to examine the causes of this stagnation. My argument is that the United Nations has inherent structural weaknesses. As a result, the organization is hesitant to take effective and timely action of humanitarian crisis. These weaknesses were left in the process of forming the UN. One of the reasons for this weakness is that the UN has relied heavily on the decision of the five permanent members of the UN in the event of a humanitarian crisis. This paper aims to identify the impacts and challenges for Bangladesh due to the mass influx of Rohingya refugees. As a result, Bangladesh faces many challenges and problems, along with social, environmental, legal and financial impacts. The study analyzes states' policies from theoretical frameworks, classical liberalism and political realism to figure out both human and state centric principles of national policies towards Rohingyas. The paper investigates what sorts of impacts the Rohingya influx has on the local communities. The paper applies 'one method' that catches qualitative research. This approach is used as the integration provides a better understanding of the present trends regarding Rohingya crisis and the challenges.*

Keywords: *United Nations, Bangladesh, Rohingya Influx, local community, Humanitarian Crisis etc.*

1. INTRODUCTION

Rohingya crisis is a well-known refugee crisis in international arena. The problem has deep root and long history. However, despite previous Rohingya influx from South Asian country of Mynamar to Bangladesh, the recent upsurge of violence in the Rakhaine state of Mynmar in 2017 and its consequent influx of Rohingya people into Bangladesh has created tremendous multi-dimensional challenges for Bangladesh. In August 2017, about five lakh Rohingya people came to Bangladesh from Myanmar for the third time [1]. As a result, the number of Rohingyas in Bangladesh is more than one million. According to a report by the European Commission, the Rakhine state of Western Myanmar is home to

[1] Faculty, Department of Business Administration, University of South Asia.

at least 800,000 Muslims, who mostly identify themselves as Rohingyas, were stripped off their citizenship and right to self-identity under the 1982 Citizenship Law of Myanmar. Undoubtedly, Myanmar's 'pseudo-democratic government' has inflicted immense cruelty and inhumanity on the Rohingya because of their ethnicity and religion. Due to Myanmar's 1982 citizenship law, the Rohingya are no longer citizens of that country. These minority Rohingyas living in Rakhine State of Myanmar next to Teknaf Upazila of Bangladesh are expatriates in their own country as they are both Muslim and Bengali speaking. However, the ancestors of the Rahingas started living in Rakhine State around the 7th century. This region was then called Arakan State. At that time there was no nation-state called today's Burma or Myanmar [2]. The exodus of Rohingya refugees from Myanmar to neighboring countries is not a new phenomenon. Historically, the Rohingyas have been fleeing to Bangladesh, Malaysia and Thailand to escape serious repressions in their country of origin, Myanmar.

Considering the situation of the UN Security Council and the UN as a whole, it can be said that the UN has become ineffective in resolving the Rohingya crisis due to the structural weaknesses inherent in the UN Charter and the socio-political interests of the two permanent members of the Security Council, China and Russia. I have explained why this numbness exists in the Security Council in the wake of the Rohingya crisis. Under the present circumstances, I have identified the UN General Assembly as the most competent body. Because of the legal capacity of the General Assembly, it is possible to play a meaningful and institutional role. In the same vein, I have emphasized the Security Council's recently adopted Security Responsibility Theory in dealing with the global situation in light of the Rohingya crisis [3]. In fact, the brutality against the Rohingyas by the Myanmar Army has been termed as “ethnic cleansing” by the Office of the United Nations High Commissioner for Human Rights [4].

This article is divided into two major parts. In the first part, the causes of the UN Security Council's institutional weakness and stagnation in protecting the Rohingya in Myanmar. In second part, to discuss different dimensions of risks and challenges of Rohingya refugee crisis in Bangladesh, mainly socio-economic, security and environmental aspects, and ponder some thoughts on possible solutions of this problem.

2. UNITED NATIONS SECURITY COUNCIL: THE EXISTING CUL-DE-SAC (IMPASSE)

In order to discuss the UN Security Council, the current stalemate and its causes, the institutional stalemate within the UN over the Rohingya crisis, it is necessary to first analyze the reasons for it, this article identifies five causes. However, four of these reasons are internal to the UN. In other words, these factors are rooted in the institutional structure of the United Nations. And the last reason is external. China and Russia, two permanent members of the United Nations related to socio-political interests have vested. Therefore, in order to unravel the cause of the stalemate in the United Nations, the focus has been on the competition for power and dominance among the victorious nations of the Second World War. It has been seen how the victorious powers have influenced the process of formation of the United Nations and how the conflict of these permanent members in pursuing their own national interests has crippled the institutional system of the United Nations.

3. ORIGIN OF THE SECURITY COUNCIL AND POWER CENTRALISM

To understand the hidden power-centralism and hegemony of 'real political' politics within the United Nations, must first understand the circumstances and context in which the victorious countries were interested in forming this organization after World War II. Especially when it is necessary to take immediate action in the face of serious human rights violations and humanitarian crises, it is necessary to understand this context in order to understand the selfish politics of these countries. The victorious nations of World War II included the United States, Britain, France, and the former Soviet Union. Together with them, China adopted the UN Declaration in 1942. The Declaration was adopted in the wake of the 1941 Atlantic Charter. The United States and Britain are the two countries that have declared the Atlantic Charter. Both are allies of World War II. In this charter, in their own opinion, they presented the goals and scenarios of the future world. And it was done in a way that would serve their national interests the most. For example, the victorious powers created the Security Council, one of the main constituents of the United Nations. It was as if the power of decision-making was in their hands, including in China. They confirmed their status as permanent five members (P-5 or Big-5) there veto power is confirmed.

A different trend is now emerging with the addition of veto powers to the Security Council's big five powers. The role of the Security Council in ensuring the universal peace and security that was enshrined in the UN Charter is added here. These five superpowers often exercise their veto power in the Security Council when it comes to protecting their national interests, or where their interests are at stake. As a result, when there is in a great need, the Security Council remains largely ineffective and in flux. In other words, permanent members use their own national interest in assessing any serious situation or issue. If that is not in line with their interests, they are reluctant to intervene. As a result, the Security Council became ineffective in resolving the humanitarian crisis. More importantly, the decision on humanitarian intervention in the Security Council depends on one issue. That is whether the criminal state or entity, the permanent five members and the allied countries of the global power metrics at the specified time. For example, the five member states, which lasted from February 1947 to February 2019, vetoed 204 resolutions on serious concerns [5].

The ambiguity of the UN Charter and its implications naturally raise a question from the above critical assessment of the UN response to the humanitarian crisis. Why is it that despite the UN's responsibility to maintain global peace and security, it is not as effective as it should have been? It is true that the UN Charter is the basis of the organizational structure of this organization. But theoretically it is in fact an official document of the compromise between realist genre and liberal values [1].

4. SOCIO-ECONOMIC INTERESTS OF STRONG COUNTRIES: EXTERNAL ECONOMIC INTERESTS

Myanmar is currently in a very important position for the two permanent members of the Security Council, China and Russia, in addition to external economic interests. Even for neighboring India. Myanmar and China are connected to each other by borders, history, ethnicity, culture and economy. Myanmar shares 2227-kilometer border with China, more than any other country. This border covers the eastern part of Shan Province in Myanmar and the southwestern part of Yunnan Province in China [6]. They call each other in Burmese ' POUKFO' meaning brother [6]. China is now the largest exporter of consumer goods and investment to Myanmar. In 2017, China's trade with Myanmar amounted to US 10 billion, accounting for 30 percent of Myanmar's total foreign trade as well as infrastructure development, state-owned enterprises and energy assistance [7].

Geographically, Myanmar is also important for China. Because, China feels Myanmar as the gateway to the Indian Ocean [7]. For several reasons it is convenient for China. China will be able to use the long coast of Myanmar as its second corridor without any competition and keep an eye on India [7]. Because in the South China Sea, Japan, ASEAN countries and the United States are competing for dominance in regional and external powers [7]. In addition, China's Belt and Road initiative will give Myanmar an opportunity to connect with Europe and Central Asia by land and sea. If this ambitious project is implemented, China will be connected with more than 50 countries by improving highways, pipelines, railways, power grids, ports and logistics [8]. Recently, China has expressed hope to increase connectivity between Kolkata, Dhaka, Mandalay and Kunming through Myanmar. Russia is not far behind in building friendship with Myanmar. One reason is the expansion of economic and military ties with East Asian countries. Recently, especially since 2005, Russia has expanded its ties in East Asia beyond China and Vietnam. Between 2005 and 2014, Russia's trade in the region increased fivefold to 5 billion. It has also expanded its economic and trade partnerships with Indonesia, Malaysia and Singapore [9].

India is the most powerful country in South Asia. The country is also a neighbor of Myanmar and is also building strong ties. India's “Look East Policy” since the 1990s was aimed at building economic ties with Southeast Asian countries Myanmar is the only geographical link for India to enter the region. With the adoption of this policy, Myanmar has occupied an important place in India's foreign policy. India has invested heavily in the construction of a port in Sittwe in Rakhaine State. Now India is also ready to take over the management of that port. The port is part of the Kaladan Multi-Model Transit Transport Project.

Considering Chaina and Russia's socio-political obligations, the Security Council is not in a position to end the Rohingya crisis permanently. This is not just the case with the Rohingya crisis. Wherever there is a humanitarian crisis, the Security Council takes immediate action based on specific events. And it is based on the provisions of the sixth and seventh chapters of the UN Charter. In many cases, these provisions are self-contradictory in judging the nature of the conflict in the contemporary world and the source of individual insecurity. As a result, the Security Council's approach to approving measures other than the use of force or coercion to avert a humanitarian crisis has become controversial and inconsistent. The whole thing is a matter of the politics of the five permanent members of the Security Council. Especially when the type of conflict is internal, in this situation the question is what other measures the United Nations has in place to deal with the humanitarian crisis in the wake of the Rohingya situation.

5. SOCIO-ECONOMIC IMPLICATIONS: BANGLADESH

Many historians and Rohingya groups claim that Muslims have lived in Myanmar since the 12th century. According to Human Rights Watch, when Myanmar was under British rule (1824-1947), many people migrated from India and Bangladesh as workers. However, since they came under the British rule, Myanmar considered them illegal after independence. The problem has deep root and long history. However, despite previous Rohingya influx from South Asian country of Mynamar to Bangladesh, the recent upsurge of violence in the Rakhaine state of Mynmar in 2017 and its consequent influx of Rohingya people into Bangladesh has created tremendous multi-dimensional challenges for Bangladesh [10].

Bangladesh gave shelter to Rohingyas for humanitarian reasons but the country is now facingrisks from a plethora of sources. It is assumed that this crisis will not be solved any time soon. Expert’s opinions are favoring an assumption that there is a threat of Rohingyas spreading all over the country, and there are also various challenges. Meanwhile, the long stay of Rohingyas is creating various socio-economic problems. There is a growing physical tension and emotional distance between the Rohingya and the local people.

In this part, the aim of this article is to discuss different dimensions of risks and challenges of Rohingya refugee crisis in Bangladesh, mainly socio-economic, security and environmental aspects, and ponder some thoughts on possible solutions of this problem. Bangladesh is at multi-dimensional risk with the shelter of Rohingya. In Ukhia and Teknaf in Cox's Bazar, locals are now a minority. The situation is becoming more difficult day by day in such a situation, regional and international initiatives are needed to solve the problem. The crisis is long-term; the international community will forget all this at some point. In the face of other problems, it will become a minor issue because of world politics is involved.

5.1 Health Risks: Rohingya refugees in Cox's Bazar tested positive for HIV, the risk of AIDS is increasing in the region. Therefore, the government is taking various steps to prevent the spread of HIV. About seven lakh Rohingyas have fled to Bangladesh since August 25, 2018 in search of safe haven Cox's Bazar's Ukhia and Teknaf now have about 1.1 million Rohingya, both old and new. Two laboratories have been set up in Teknaf and Ukhia to identify Rohingya infected with AIDS. AIDS has been found in the body of many people through blood tests for the treatment of common diseases. Rohingyas are evacuating on him everywhere as a result, waterborne pathogens have spread and created serious health risks. The health system that has been created for two lakh people has to provide services to 8 to 9 lakh people. That is why the measles and rubella vaccine for our children has been given to Rohingya children because measles can spread terribly once it occurs [11].

5.2 Economic Challenge: Bangladesh will face long term economic pressure. According to the estimates of the Bangladesh Bureau of Statistics, the per capita income in Bangladesh in the 2018-19 financial years was 1,602 US dollars. As such, the per capita income of these 6 lakh Rohingyas is estimated 112 core dollars or Tk 8,961 core. But Rohingyas have no source of income as a shelter. According to a UN report, the per capita expenditure of the people of Bangladesh is about 750 dollars [12]. But despite the expenses of the Rohingyas, there is no legal source of income, which is a major obstacle to keep the economy afloat. It is difficult to say whether this assistance will continue in the long run, even if some assistance is available at present. When it will not be available, Bangladesh will have to spend this money. Bangladesh may face huge financial pressure due to Rohingyas. Indian government maintains good relations with Myanmar in order to deal with the insurgency in the country's northeast and limit Chinese influence.

5.3 Challenges for Tourism in Cox’s Bazar: If the stay of Rohingyas is prolonged, there is a danger of collapse in the tourism industry of Cox's Bazar. Right now, many people have seen Rohingya women moving freely in Cox's Bazar. There are also many women in the prostitution business. The locals are worried about this, the administration is also worried. If it continues like this, many people can bypass Cox's Bazar and go to another tourist destination. If that happens, tourism in Cox's Bazar could collapse. According to a Cox's Bazar administration official, there are three hundred and fifty hotels, motels, guest houses and cottages. Many of the fleeing Rohingya women are being found in hotels and motels [13].

5.4 Security Implications: Various radical groups are trying to attract extremist youths among the Rohingya. It is normal to work in frustration among so many unemployed youth. If the militant groups want to take advantage of this opportunity, it could be a catastrophe [14]. Detectives said that radical groups were also trying to seize the opportunity Rohingya youths are already involved in drug trafficking. Ninety percent of the yaba drag enters our country from Myanmar. Yaba is now one of the biggest problems in Bangladesh [15]. Some people in this country are giving them the opportunity to do all these things.

5.5 Environmental Implications: According to a research report on Rohingya infiltration and its impact on the environment, a joint venture between UNDP, UN Women and Bangladesh's Ministry of Environment and Forests, since August last year, 4,300 acres of hills and forests of Ukhia and Teknaf in Cox's Bazar have been cut down and completely destroyed by at least 8lac Rohingya from Myanmar and Rohingyas are using 6,800 tons of trees and plants every month. According to the report, the use of thousands of tubewells is causing the water level to go down, causing various risks including landslides. If action is not taken now, a large area of Cox's Bazar will suffer irreparable damage**.** Hundreds of shelters are made of black polythene on both sides of the road from Ukhia in Cox's Bazar to Teknaf. The same figure as far as the eye can see. The mountains and forests are no longer visible. These huts have been built by cutting the hills. According to the Forest Department, four and a half thousand acres of hills have been cut down and settled for Rohingyas fleeing. These sheds were built by the Rohingyas themselves as a result; there is a risk of a catastrophic environmental disaster in the area. Experts say that if there is a little heavy rain, the mountains can collapse. It is feared that many people will be killed. At some point, the Rohingya problem may be solved, new trees may be planted, but the damage to the mountains can no longer be compensated. By bringing soil from other places, the cut place of the hill can no longer be filled. These mountains are 15-20 million years old. As a result of cutting the hills, if it rains now, water will enter the hills [16]. This can lead to catastrophic landslides at any time. The damage has already happened. The first case of Covid-19 was reported in a Rohingya camp in Cox's Bazar, but there is no way to maintain social distance even lockdown is not being accepted. People in the camp are scared by the news of Corona's attack, because Corona is a contagious disease. Moreover, the camps are crowded, so the risk is high.Many people of this camp don't know how to protect themselves from this virus.

6. RECOMMENDATIONS

The Rohingya crisis has become a matter of deep concern for Bangladesh. Many did not even think that the problem would become so complicated after the Rohingyas entered Bangladesh in August 2017. In view of Hon'ble Prime Minister Sheikh Hasina raised five-point proposal to the United Nations to finding a durable solution of this crisis. Prime Minister spoke of ensuring the safety of all civilians living in Myanmar, regardless of religion or ethnicity, and of creating a "safe zone" for the Rohingya inside Myanmar under United Nations auspices. She also promised to ensure safe return of all displaced Rohingyas. Following this, the Prime Minister presented a four-point proposal to resolve the Rohingya crisis at the 74th session of the UN General Assembly, in which specifically mentioned sustainable repatriation. She also called for building Rohingya confidence in Myanmar and arranging a visit for Rohingya representatives to Rakhine. Prime Minister of Bangladesh also called on the international community to ensure the safety and security of the Rohingya and its responsibility for human rights violations, taking into account the causes of the crisis [17]. Rohingya problem has now become a major concern for Bangladesh. A two-day conference titled 'Rohingya Crisis: Challenges and Sustainable Solutions' was recently held at North South University. There, about 150 local and foreign researchers, academics and representatives of various non-governmental organizations, including the Foreign Minister and the Foreign Secretary, analyzed various aspects of the Rohingya problem and discussed possible solutions to the problem [18]. It cannot be expected that a populous and developing country like Bangladesh will bear the burden of feeding such a large population indefinitely. With this in mind, a number of measures were repeatedly mentioned in the conference regarding the return of Rohingyas. These are seeking a solution to the Rohingya problem in the light of the five points given by Prime Minister Sheikh Hasina. Accelerate the propaganda activities of Bangladesh's foreign missions to increase pressure on Myanmar. United Nation's should ensure the peaceful and dignified return of the Rohingya.

Attempts to repatriate Rohingya refugees from Bangladesh to their homeland, we would say bilateral efforts have little hope of resolving the Rohingya issue, so Multilateral initiatives are required In this case, we can move towards a solution by taking the following steps:

First, to continue efforts by build a global consensus aimed at putting pressure on the Myanmar government.

Second, in order to implement the recommendations of the Annan Commission, influential countries must exert diplomatic pressure on Myanmar in various ways.

Thirdly, Bangladesh needs to take the initiative to start a continuous dialogue between ASEAN and OIC notable countries to resolve the Rohingya crisis. To this end, a series of meetings may be held in Dhaka or in the capitals of these countries.

Fourth, in bilateral or multilateral dialogue, the Rohingya's logical demands (such as recognition of their ethnic identity, civil and religious rights, return of land and security after repatriation, etc.) must be taken into account in matters of discussion and consensus, so that the voluntary return process is effective [7].

Finally, the international community, including the United Nations Security Council, cannot deny its obligation to implement the Universal Declaration of Human Rights, signed in 1948, and the 2005 Responsibility to Protect (R2P). So the UN must ensure the peaceful and dignified return of the Rohingya. At the same time, UN peacekeepers will be tasked with monitoring the Rohingya for at least the first three years after their return.

7. CONCLUSION

My argument in this article is that the Rohingya people in Myanmar's Rakhine State are going through a humanitarian crisis. But the UN Security Council is not in a position to play a politically or legally effective role there. This is because of the latent structural features of the United Nations, the changing realities of global politics and conflict, and the socio-political interests of China and Russia. The five permanent members of the UN Security Council often obstruct the functioning of the UN in pursuing the politics of their power and national interests. The matter has been discussed in detail here. It also discusses how the interpretations that appear to be due to the ambiguity of the UN Charter prevent the Security Council from taking immediate and timely action. But does this mean that the humanitarian crisis has no chance of the United Nations taking action, mediating or intervening? UN members can at least pass a resolution through the General Assembly. There are ample opportunities for this. As a result, the Myanmar government could be accused of genocide, war crimes, and crimes against humanity, ethnic cleansing and crimes against its own people. It is also important to keep in mind that a durable solution to the Rohingya problem is a major challenge for Bangladesh. Because of Myanmar continues to deny international declarations and charters on human rights. On the other hand, influential countries and organizations are failing to ensure the practical application of recognized international agreements and conventions to protect the Rohingya from genocide. Regional influential countries and organizations have not been able to play an effective role in solving the Rohingya problem by giving more importance to their geo-strategic issues. Meanwhile, due to the continuous non-cooperation of Myanmar, it is not possible for Bangladesh alone to find a solution to this crisis. Therefore, Bangladesh government must move forward with the international community to resolve the Rohingya crisis.

REFERENCE

1. BBC News (2017) UK suspends aid for Myanmar military. Available at: https: // www.bbc.com/news/uk-41326179 (accessed 4 July 2019).
2. Encyclopedia Britannica (n.d.) Rohingya. Available at: https: // www.britannica.com/ topic/Rohingya (accessed 14 July 2019).
3. Park, T. and MacDiarmid, V., 2016. Selling R2P: Time for action. The Role of Business in the Responsibility to Protect. Cambridge: Cambridge University,pp.35-50.
4. UN Human Rights office of High Commissioner (n.d) Convention of the prevention and punishment of the crime of the genocide; Available at: https://www.ohchr.org/en/ professional interest/ pages/crimeofgenocide.aspx (accessed 11 July 2019).
5. Dag Hammarskjold Library (n.d.) Security Council quick links. Security Council-veto list. Available at: https://research.un.org/en/docs/sc/quick (accessed 3 July 2019).
6. Kudo T (2008) Myanmar s economic relations with China Who benefits and who pays. In: Skidmore M and Wilson T (eds) Dictatorship, Disorder and Decline in Myanmar. Canberra: Australian National University E-Press, pp. 87-112.
7. Ganesan N (2018) Bilateral issues in Myanmar s policy towards China. Occasional paper no. 38. Southeast Asian Studies, University of Freiburg. Available at: https://www.eu-china.net/ uploads/tx news/OP_38 Ganesan Bilateral issues in Myanmar’s Policy towards China.pdf (accessed 9July 2019).
8. Sein, P.U.T., (2018) New Light of Myanmar; Available at: https:// www.burmalibrary.org/ docs15/NLM-2013-08-17-red.pdf
9. Gorenburg D and Schwartz P (2019) Russia s strategy in Southeast Asia; PONARS Eurasia, policy memo 578. Available at: http://www.ponarseurasia.org/ memo/russias strategy-southeast-asia (accessed 9 July 2019).
10. Human Rights Watch (HRW), 2000. Discrimination in Arakan. Human Rights Watch, New York, USA, [online]. Available from: https:// www.hrw.org/reports/2000/burma/ burm005-02.htm #P132_34464. [Accessed 10th July 2020].

11. Islam, M.M. and Nuzhath, T., 2018. Health risks of Rohingya refugee population in Bangladesh: a call for global attention. Journal of global health, 8(2).
12. Khatun, F. and Kamruzzaman, M., 2018. Fiscal implications of Rohingya crisis for Bangladesh, Centre for Policy Dialogue (CPD), Dhaka, Bangladesh.
13. Daily Star (2018) No excuse for delaying solution. 30 August; Available at https://www.thedailystar.net/news/Rohingya-crisis/unsc-urged-work-myanmarend-horrendous-sufferings-Rohingyas-1626058 (accessed 1 September 2018).
14. Kudrat-E-Khuda (Babu), 2020. The Impacts and challenges to host country Bangladesh due to sheltering the Rohingya refugees. Cogent Social Sciences, 6(1), p.1770943. [online] Available from: https://doi.org/10.1080/23311886.2020.1770943. [Accessed 12th July 2020].
15. Arafat, F.M. and Khanam, H., 2019. The Gradual Ramp up of Rohingya Crisis and Bangladesh's Challenges: An Overview from Bangladesh Perspective. Asian Studies International Journal Vol I, Issue No. 1(December 2019): Pages 22-29.
16. Choudury, A.H. and Fazlulkader, M., 2019. Rohingya Refugee Crisis in Bangladesh: An Analysis of the Socio-Economic and Environmental Problems in Bangladesh Myanmar Border Area. European Journal of Research P, 87, p.106.
17. General Assembly of the United Nations (n.d.) Functions and powers of the General Assembly of the UN. Available at: http://www.un.org/en/ga/about/background.shtml (accessed 2 April 2018).
18. Kipgen, N., 2014. Addressing the Rohingya problem. Journal of Asian and African Studies, vol. 49, no. 2, pp. 234-247.

Instructions for Authors

The following guidelines should be followed **strictly** in submitting the manuscript of the paper: **Manuscript Format:** All manuscripts must be written in English, plagiarism free and typed on only one side of a good quality A-4 size paper with 1.5 lines space and sufficient margins, and submitted in a MS Word format via email. The manuscript along with the CD should be submitted to the Editor. The text of a submission should only be in 'Times New Roman' font, of 12 point font size and 1.5 lines spaced paragraphs. The paper should ideally range between 2000 – 6000 words included an abstract not exceeding 200 words and references. Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Author's name, institutional affiliation and email addresses should be given on a separate cover page with the manuscript to facilitate blind reviewing. Authors are requested to send a brief biography (75 words maximum) with a scanned picture on a separate sheet. **Abstract:** Each article should be accompanied by an abstract of no more than 200 words. Abstract should include only the gist of the paper. **Reference:** All references should be cited in the text by typing in parentheses the last name(s) of author(s) followed by the year of publication. Two or more cited publications by the same author(s) that were published in the same year should be distinguished by a, b, c, etc. after year, for example (Islam, 2000b). Please do not use ibid, op. cit. loc. supra, or infra, instead show subsequent citation of the same source in the same way as the first citation. All cited references should be arranged alphabetically by author's last name at the end of the text, under the heading `References'. This list should give the last name(s) of the author(s) with appropriate initial letters, publication date and title of work. For books, the place of publication and the publisher's name should be given. For articles, the name of the periodical, volume (number) and inclusive pages should be given. Examples may be seen in University of South Asia Journal. **Notes:** Informational or explanatory footnotes are not generally encouraged. However, it they are unavoidable or essential, they should be limited to comments and explanations. These should be cited in the text as an affixed number and such notes should be sequentially arranged at the end of the text, but before `References'. These notes should not be used to cite reference to literature. **Tables:** Tables should be typed on separate sheets, and should be numbered sequentially with Arabic numerals (e.g. Table 1) and have captions. They should be properly cited in the text. Short tables may be placed within the text. **Illustrations:** The paper should contain minimum number of tables, graphs and figures. The same data should not be used both for tables and/or graphs and figures. All illustrations (graphs and figures) should be ready for reproduction and should be numbered sequentially with numerals (e.g. Fig. 1) and should have captions. The photographs should be printed and submitted on glossy papers.

University of South Asia Journal

Contents