Contents

Solar based Nano-Grid (SNG) System for Rural Area in Bangladesh

Md. Aticur Rahman[1], Md. Mahabubur Rahman[2], Md. Abdul Based[3]

Abstract: This paper is intended to reinforce the impact of small-scale alternative energy technologies amongst the rural communities across the developing countries through the novel plan of Solar Nano-Grid (SNG). Specially, it is targeted at enhancing the flexibility of small-scale solar technologies to supply real economic opportunities for communities to interact in income-generating activities additionally as enjoying the social, health and manner enhancements that Solar Home Systems (SHS) supply. The work presented in this paper has an immediate impact on the lives of the community people in Bangladesh specially in the rural areas. This SNGaim to possess a wider impact upon the various bodies operating within the renewable energy sector in Bangladesh.

The model proposed in this paper will offer the broader educational sector and policy-makers with new empirical insights into the energy use patterns of the evolution of solar home systems and therefore the potential of SNG to supply wider social and economic advantages.

This SNG will provide with new understanding of patterns of energy use on a daily and seasonal basis and new proof on the broader impacts of the diffusion of SHS. In addition, analysis is done on the potential of solar nano-grid to supply advantages to the broader rural community than via existing SHS provision.

Keywords: Nano-Grid, Photovoltaic (PV), Solar Home Systems (SHS)

Introduction

The number of installations of Solar Home Systems (SHS) has been increased rapidly in last few years. Consequently, there is now a relatively wide literature documenting the successes and limitations of different business models in facilitating the growth of SHS. A good number of literatures is focusing on the immediate impacts of access to electricity via SHS upon issues as diverse as health, education, security, access toinformation and income [1].

A SHS has many advantages, for example, it removes the air pollution caused by kerosene lamps, provides light for children or others to study, enhances security, and provides access to information.Since a SHS can be hired or purchased, it is also useful for those people who have less income. In fact, energy access provision is insufficient as a driver of development by itself and in some cases actually imposes additional financial burdens. Further, where energy access projects are implemented without understanding and taking into account the complex socio-cultural background of such projects, they may do as much harm as good[2].

1. Lecturer, Department of Electrical, Electronics & Telecommunication Engineering (EETE), Dhaka International University, 66 Green Road Dhaka. Email: aticur.eee@gmail.com
2. Lecturer, Department of Electrical, Electronics & Telecommunication Engineering (EETE), Dhaka International University, 66 Green Road Dhaka.
3. Associate Professor, Department of Electrical, Electronics & Telecommunication Engineering (EETE), Dhaka International University, 66 Green Road Dhaka.

Within this context, we have developed the thought of solar nano-grid that overcomes the restrictions of existing SHS. The nano-grid concept is predicated on the SHS, wherever the essential electricity demand of the households are met. In addition,it proposes the incorporation of some small-scale agricultural or industrial applications, like irrigation.

The term nano-gridis most often used to refer isolated very small grids (power output typically ranging in from few hundred watts to few kilowatts). It has very different meanings in different contexts. Service is typically Alternating Current (AC), and customers can use loads likelights, fans, mobilephones, and radio. Sometimes it is a synonym of micro-grid. In other cases, particularly in developing countries, nano-grid refers to systems of very small scale and typically reaches fewer than 150 household customers.[2]Usually, solarnano-grid has the advantages of much less line loss and less line voltage drop compared to mini-grid systems.

Proposed Model

The block diagram of our proposed nano-gridmodel is shown in Figure 1. This model is very flexible in design. For example, in a village of clustered household and irrigation purpose, there can be more than one nano-grid to supply power to the community and in case of increased demand, new Photovoltaic (PV) panels can be installed and the existing nano-grid can be interconnected to form a larger distributed PV system. Then, if the national grid arrives at the locality, the nano-grid PV system can be hooked up to the main grid.In our proposed nano-grid a solar PV array is used for providing power. A power optimizer is used which provides constant 565 volt from the variable PV array voltage. This output voltage is fed to the 3 phase inverter circuit which is used to run 3 phase pump for irrigation purpose. A switch is used which selectswhether battery will be charged or not. The battery is then used for household loads during the period when solar energy is not available. In our system an additional solar PV array can easily be connected in parallel with the main array when the demand exceeds the capacity [3].

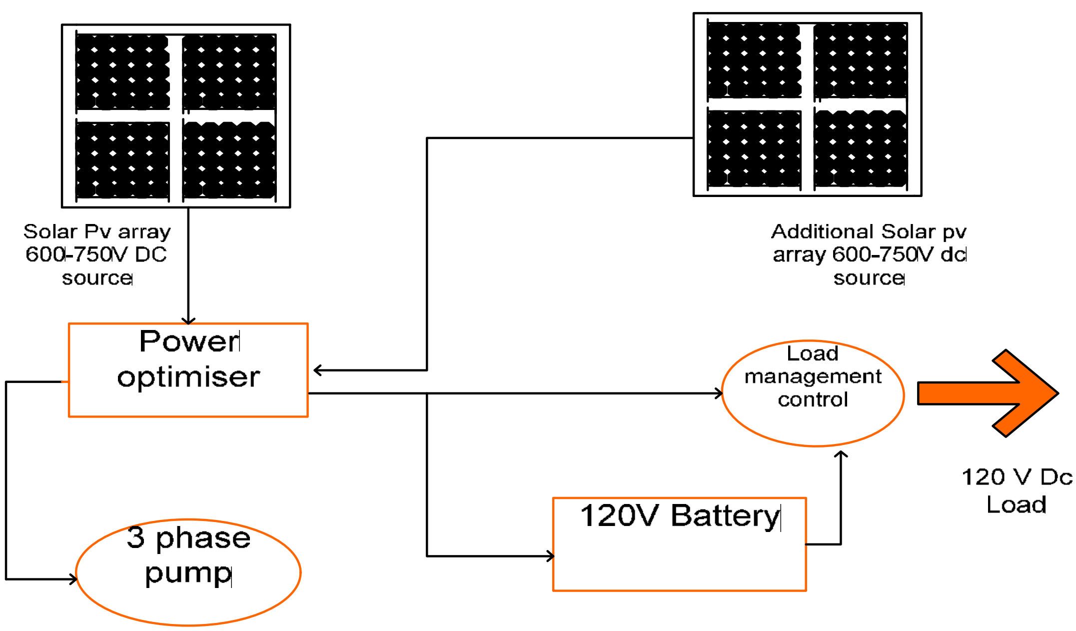


Figure1:Block Diagram of the Proposed Solar Nano-Grid System.

The MATLAB/Simulink model of our proposed SNG is shown in Figure 2.

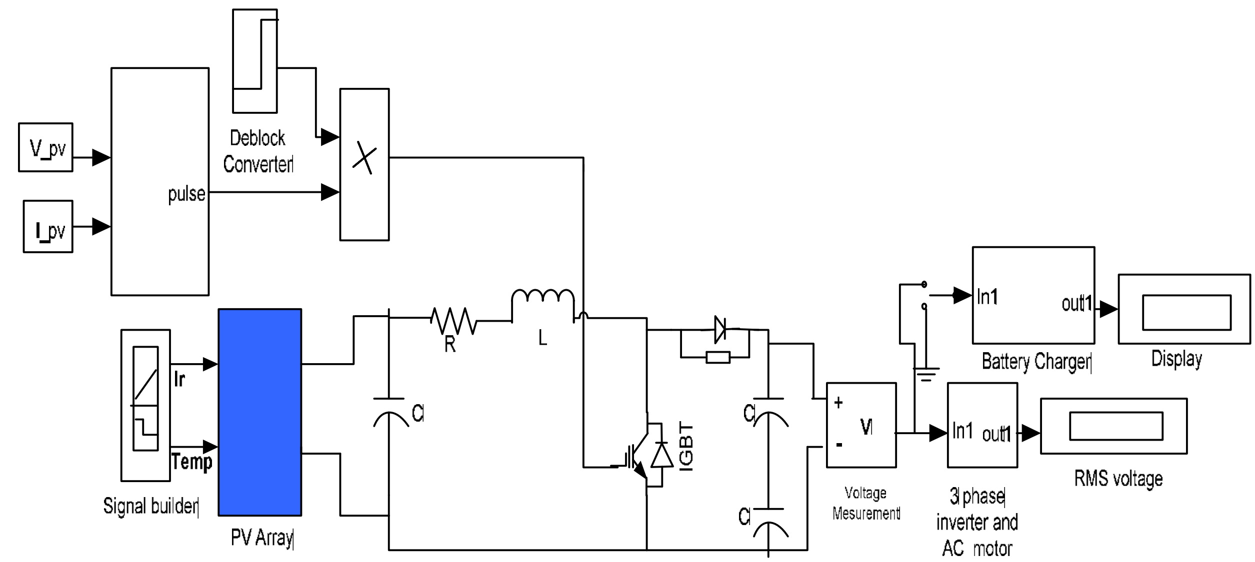


Figure 2: MATLAB/Simulink Model of the Proposed SNG.

A. Inverter Section

Within the last decade, there are major advancements in power electronics. Integration of digital signal processors with power electronics has been developed to regulate power systems. An inverter is essentially a converter that converts Direct Current (DC) to Alternating Current (AC) and commonly known as Voltage Source Inverter (VSI). There are 3 categories of VSI. These are: Pulse-Width Modulated (PWM) inverters, Square-Wave Inverters, and Single-Phase inverters with voltage cancellation[4]. In our proposed SNG, we use pulse width modulated inverters.

Circuit for 3 Phase Inverter: The circuit for 3 phase inverter is shown in Figure 3.

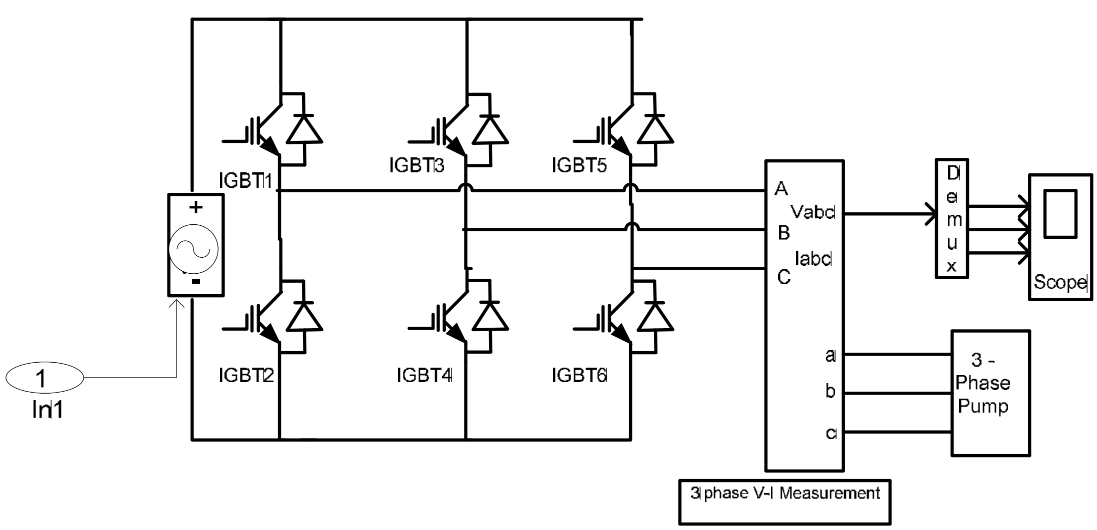


Figure 3: MATLAB/Simulink Model of 3 Phase Inverter [4].

Switching Scheme of Integrated Gate Bipolar Transistor (IGBT): The switching scheme of IGBTs is shown in Figure 4.

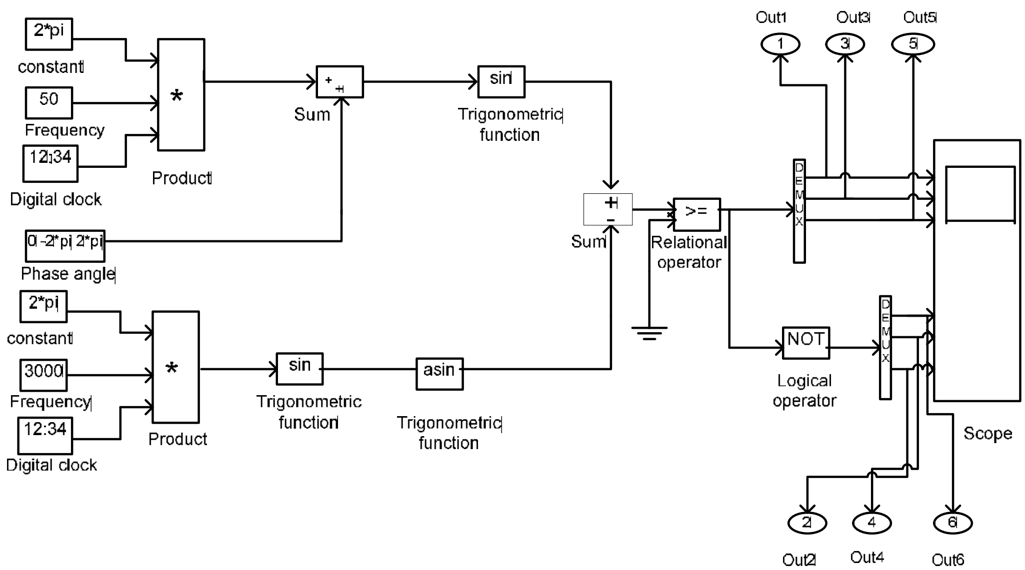


Figure 4: MATLAB/Simulink Model to Generate Gate Pulse for IGBTs.

Modulation Scheme of 3 Phase Inverter: The modulation scheme of 3 phase inverter is shown in Figure 5. In this section reference signals are compared with a triangular wave. In this modulation scheme frequency of the reference and triangular wave is 50 Hz and 3000 Hz respectively. When the reference signal is greater than triangular wave then a positive pulse is obtained and this pulse is used to drive the IGBTs. If reference signal is less than the triangular wave then there is no pulse in the output to drive the IGBTs.

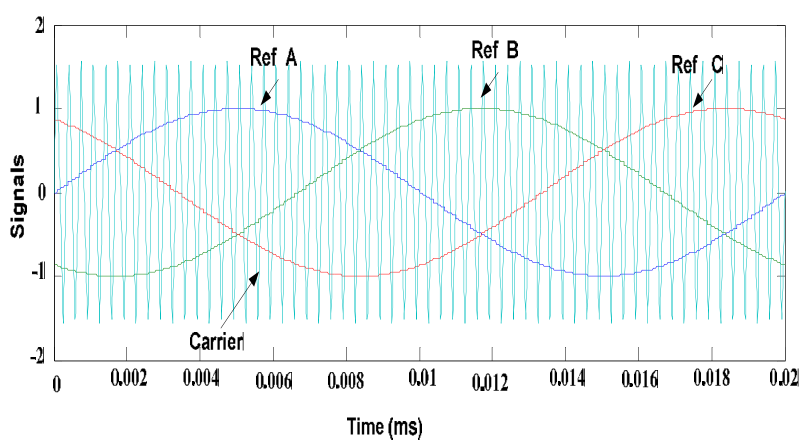


Figure 5: Modulation Scheme of 3 Phase Inverter[4].

Gate Pulse to Drive IGBTs: In this project a 3 phase inverter is used. But the output of the modulation scheme provided only 3 gate pulse. For this reason a NOT gate is used to generate another 3 pulse to drive the other IGBTs in the negative cycle. The gate pulse to drive IGBTs is shown in Figure 6. Pulse for T2, T4, T6 is generated using the NOT logic.

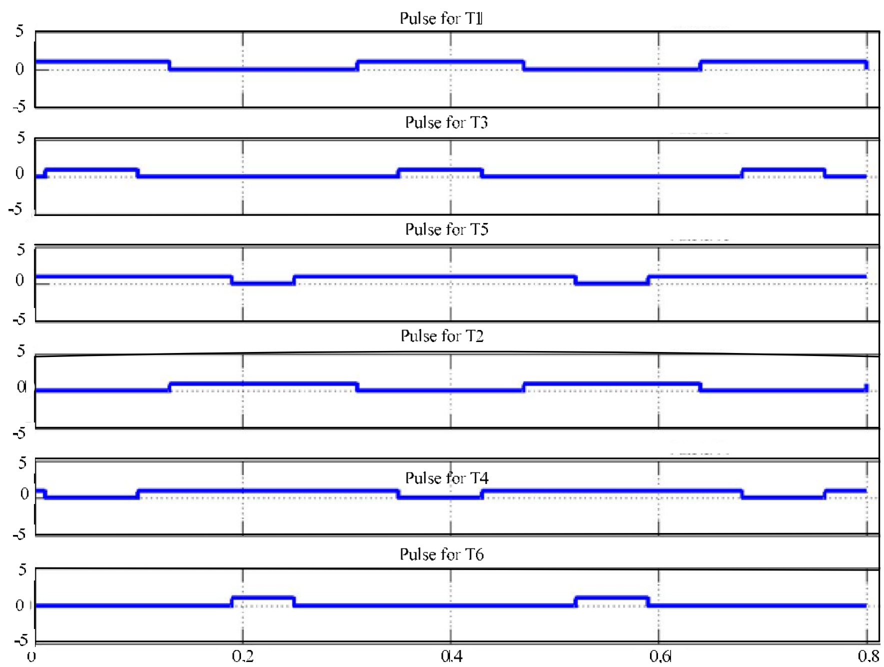


Figure 6: Output Gate Pulse to Drive IGBTs.

B. The Battery Charger Section

In this subsection, we will describe a battery charger subsystem which will sense the output of the buck converter. If the output is 120V then it will charge otherwise it will not.

A buck converter is a voltage step down and current step up converter. In order to step down the input voltage to a desired level a buck converter is used. The simplest way to reduce the voltage of a DC supply is to use a linear regulator (such as a 7805), but linear regulators waste energy as they operate by dissipating excess power as heat and do not yield any current step up. Buck converters, on the other hand, can be remarkably efficient (95% or higher for integrated circuits), making them useful for tasks such as converting the main voltage in a computer (12V in a desktop, 12-24V in a laptop) down to the 0.8-1.8V needed by the processor.

Operation of Battery Charger Subsystem:

It has one input port which receives the output of the buck converter. The output of the buck converter is either 120 V or 565 V.

So, when the output is 565V then we need to turn off charging the battery. However, if the output of the buck converter is 120V then we need to allow to charge the battery.

'If block' is used to check the condition. If In1<121 then the output action block will be 1 and then the IGBT will turn on continuously until the output of the buck converter is changed.

If In1 is not less than 121. That means In1 is 565V then the output of action block is 0. The IGBT is turn off. So, the battery will not be charged.

Battery Charger Subsystem: The battery charger subsystem is shown in Figure 7.

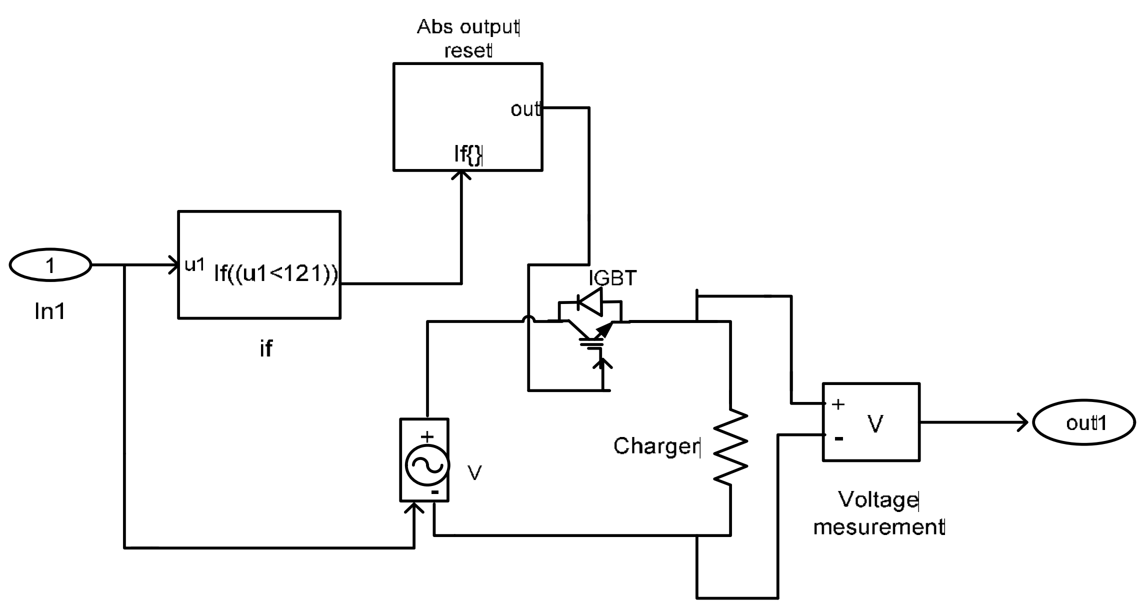


Figure 7: MATLAB/Simulink Model of Battery Charger

C. Power Optimization Section

Since solar insolation is always varying so we need a power optimizer circuit which will provide constant voltage to the inverter and battery charger subsystem. In this section by controlling the pulse width of the IGBT of buck converter, the output voltage is controlled.

Calculation for Reference Level

The MATLAB/Simulink model to generate pulse according to calculated pulse width is shown in Figure 8. We assume that we want to generate a pulse of 60% pulse width and whose period is 4.We already have a saw tooth wave whose period is 4. This period can be controlled by the divisor. We can set the divisor whatever we want. In Figure 9, the period is 0.001. So, the reference level will be between 0 to 4. If the reference level is 0 then the comparison of saw tooth and reference level will produce a pulse of 0 % pulse width. And if the reference level is 4 then the pulse width will be 100%[5].

So,

100% pulse width = 4

1% pulse width = 4/100

60% pulse width =4*60/100= this is the required reference level which will produce a pulse of 60% pulse width.

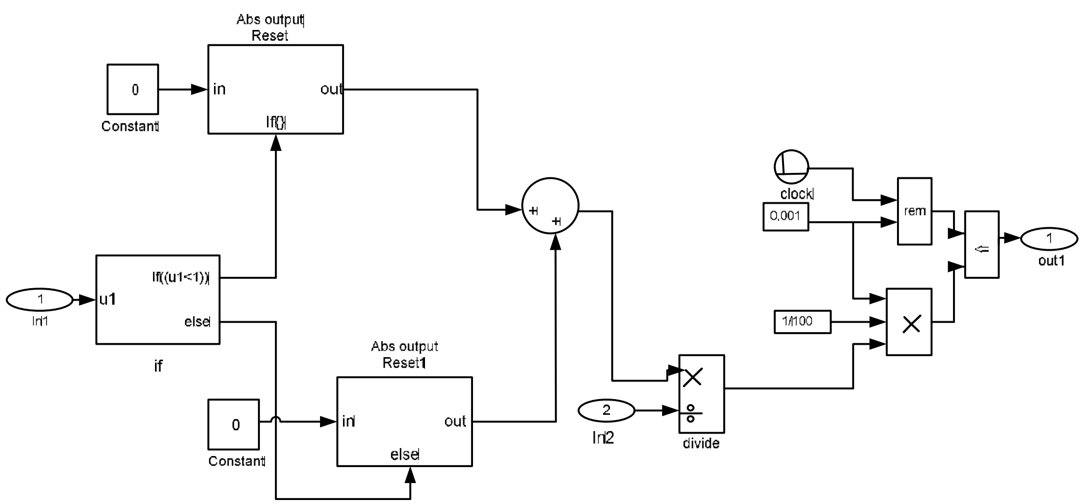


Figure 8: MATLAB/Simulink Model to Generate Pulse According to Calculated Pulse Width.

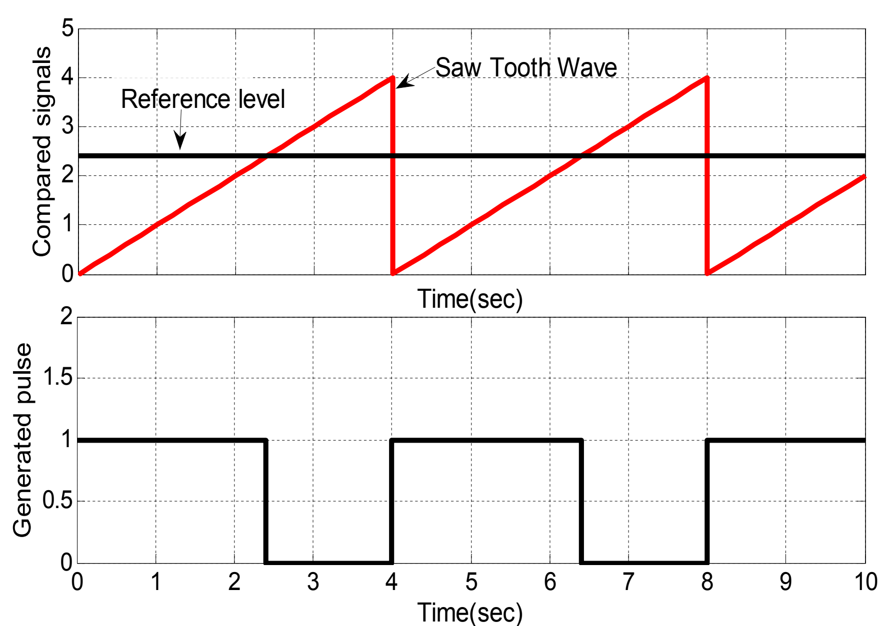


Figure 9: Comparison of Two Signals and Generating Required Pulse.

Simulation and Result

Power Optimizer

Since Solar insolation is variable, for getting a fixed output voltage from solar PV array a power optimizer is required. In our system the input voltage from solar PV array is varied between 600-700 volt our optimizer provides fixed 677 volt which is used as input voltage for the Inverter and Battery charger section.

Figure 9 shows the output voltage wave shape of power optimizer section.

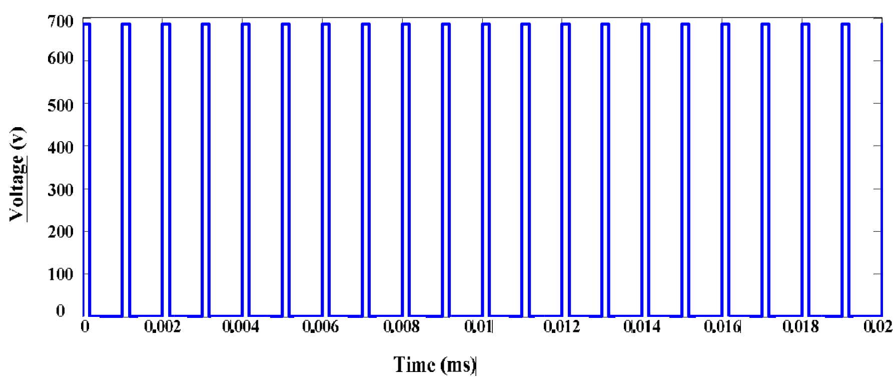


Figure 10: Output Voltage Wave Shape of Power Optimizer

Inverter Section

The 3 phase Inverter converts Square wave dc voltage to 3 phase ac voltage to run a 3 phase pump.

The output rms voltage of 3 phase inverter is 405 volt and is used to run 3 phase pump for irrigation purpose. Figures 11 and 12 show output voltage and current wave shape respectively.

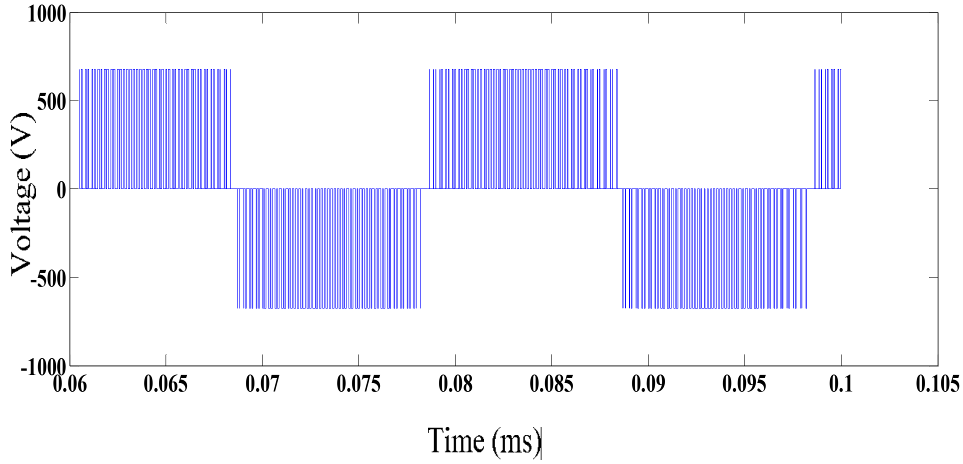


Figure 11: Output Line Voltage of 3 Phase Inverter

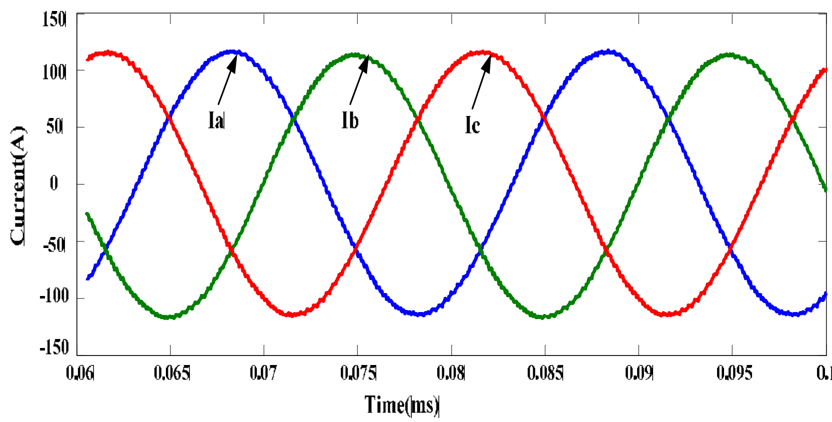


Figure 12: Output Line Current of 3 Phase Inverter

Battery Charger Section

In this section a buck converter is used to step down the output voltage of power optimizer to 120 volt. This 120 volt is used to charge the battery. Figure 13 shows the output voltage of battery charger section.

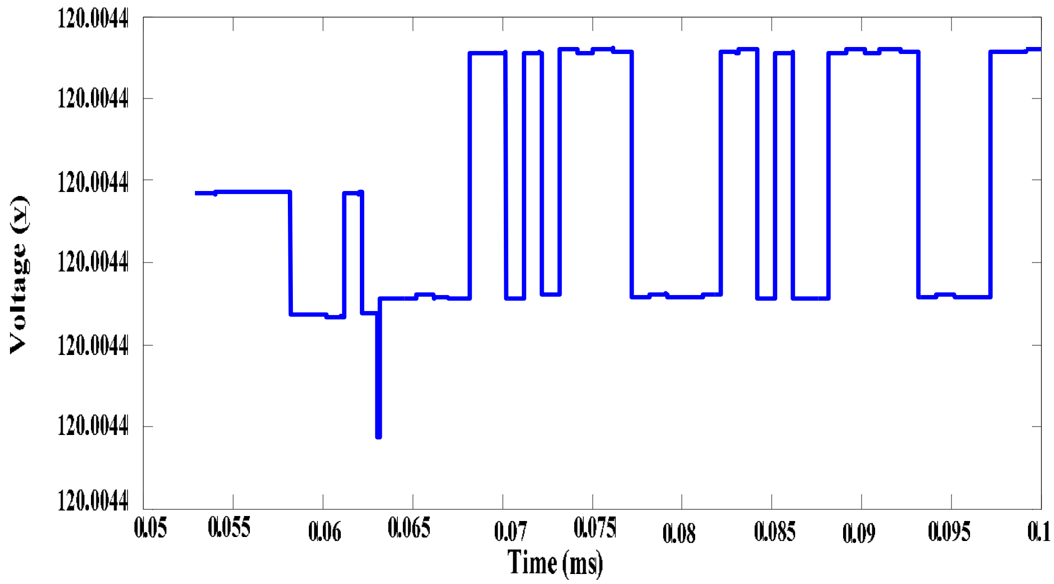


Figure 13: Output Voltage Wave Shape of Battery Charger Section

Conclusion

This paper has proposed solar nano-grid highlighting its technical benefits and a few of the economic and social concerns involved in its development. Since SNG technology is on the top of the agenda in international organizations, its full benefits are not yet implemented and demonstrated in the field. The approach detailed above fills this gap by bringing together smart energy meters, ultra-efficient loads and locally resourced technology that enable a multi-tier electricity access infrastructure that is modularly adaptable and therefore future-proof and upwardly compatible. The proposed grid does not seem to be capital intensive solutions as its size is small. In addition, it can be implemented in a little community overcoming the financial difficulties compared to large scale mini-grids. At the same time, supply of DC voltage rather than AC at the household level avoids the comparatively high cost of inverters eliminating inverter losses significantly when the load demand is less than the peak throughout late night hours. Considering the sunshine and weather conditions of Bangladesh, irrigation is incorporated with the system to run directly from the PV (without battery) throughout the dry season once the sunshine is high. This also takes the advantage of energy surplus within the nano-grid when house hold load demand is low. The solar PV irrigation energy cost is below diesel based irrigation costs in Bangladesh.

In addition, better energy storage system can be used such as Superconducting Magnetic Energy Storage (SMES) coil.

References

1. H. Patel and V. Agarwal, "Maximum Power Point Tracking Scheme for PV Systems Operating Under Partially Shaded Condition," IEEE Transaction on Industrial Electronics VOL. 55, NO. 4, APRIL 2008.

2.Solar nano-grid system (online) available at http:// www.google.com/solar nano-grids.org. [Accessed: 17- July- 2017].

3. Total world energy consumption by source 2017, from REN21 Renewables 2017 Global Status Report.

4. Md. Rabiul Islam, Youguang Guo, Jianguo Zhu Power Converters for Medium Voltage Networks, Springer Publications, page no. 59.

5. Power Electronics: Circuits, Devices and Operations (Book) - Muhammad H. Rashid Gradella Villavla, Jones Rafael Gazoli, Ernesto Ruppert Filho, 3rd Edition, and page no. 186- 191.

Simulation Based Design and Implementation of Single Phase to Three Phase Power Converter

Syed Abdullah-Al-Nahid[1], Md. Mahabubur Rahman[2], Md.Aticur Rahman[3]

Abstract: Power is very important to modern world. From smallest sensors, bionic implants, laptops, household loads to satellites, large industry, it is necessary to deliver power by means of classical wires or transmission lines. The alternating current power system is classified into two groups: single phase alternating current system and three phase alternating current system. The whole power system is divided into generation, transmission and distribution sections. Most of the household load connected in a power system is single phase type. Some large machines used in different industry are three phase type loads. The problem with the single-phase power system is the ability to handle large power (both generation and transmission). In case of three phase power, the generation and transmission of large electrical power is very possible and this type of power system is used almost in every country of the world. At distribution end, this three-phase power is divided into single phase to carry the usual loads. But often in rural areas, it is found that a single large three phase load is situated at a very distant from the distribution grid system. To drive that single three phase load it is necessary to supply three phase power to that distant region which results enormous cost to the power system. This problem can be solved by a single phase to three phase power converter.

In this work, a pure sine wave single phase to three phase power converter has been designed and analyzed. The whole work is divided into three sections: input rectification, designing of three phase inverter and filtering network. The gate driving circuit for three phase inverter is designed using timer 555 IC and 4035 shift register IC. Also, three non-inverting amplifiers using IC 741 is used to amplify the pulse voltage to minimize the switching losses. The whole work is designed and analyzed in Proteus software.

Key words: Inverter, Shift Register, Three Phase, Single Phase, Rectifier, Filter.

Introduction

It has been said that people do not use electricity, but rather they use communication, light, mechanical work, entertainment, and all the tangible benefits of energy and electronics. In this sense, electrical engineering as a discipline is much involved in energy conversion and information [1]. The vast power system network is divided into three sections: generation, transmission and distribution. The concept of generating and carrying large power results in use of three phase power system. The loads are often classified as single phase load and three phase load. Household equipment's like light, fan, TV etc. are in the category of single phase load. Medium

---

1 Assistant Professor, Dept. of Electrical, Electronics and Telecommunication Engineering, Dhaka International University, Dhaka, Bangladesh.

2 Lecturer, Dept. of Electrical, Electronics and Telecommunication Engineering, Dhaka International University, Dhaka, Bangladesh.

3 Lecturer, Dept. of Electrical, Electronics and Telecommunication Engineering, Dhaka International University, Dhaka, Bangladesh.

Correspondence to: nahid.eete@diu-bd.net

and large motors usually used in small to large industry are three phase load[2]. Often it is found that Power System Company has to design a three phase distribution system to carry power to a single industry compiled of some three phase load. It enhances the cost both of the consumer as well as Power Company. Instead of carrying three phase power to a single three phase load, it will be cost effective for that system where three phase load can be run on single phase supply.

A phase converter is a device that converts electric power provided as single phase to three-phase. The majority of phase converters are used to produce three-phase electrical power from a single-phase source. The main function of the three-phase electrical equipment such as three- phase ac motors is significantly more efficient, economical and easy to control than their single-phase power converter part. The size of the three-phase motor is relatively small. Three phase power is not usually available in the many of the rural or light industrial areas, due to the high cost of extending the three phase service[3-4]. The single-phase source is rectified to obtain DC voltage. The AC voltage is then converted to DC 15 volt. The same principle can be applied in the reverse direction. The rectified DC is applied to a three phase inverter to convert single phase supply to three phase system and run the three phase loads.

Proposed Model

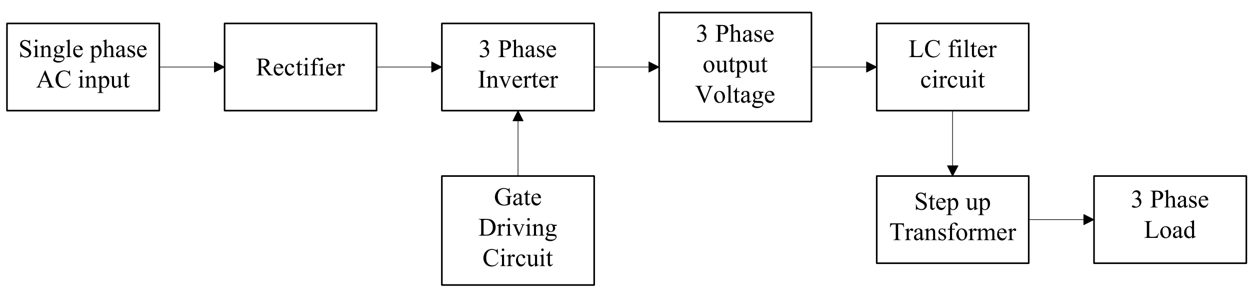


Figure 1: Block diagram of single- phase to three-phase power converting system

Figure 1 shows the block diagram of the work. The whole work is divided into several stages. At first, the single phase power supply is rectified using bridge rectifier and filter component to a pure DC with magnitude of 15 V. This DC voltage is supplied to three phase inverter circuit to convert this DC voltage into three phase voltage. The Gate driving circuit generates three phase pulse for the inverter circuit. The output of the inverter circuit is modified sine wave which may results some serious damage to the load. This modified output is then filtered using a LC filter circuit to get pure sine wave output. The final output is then supplied to a three phase step up transformer to run the three phase load.

Simulation Circuit Diagram

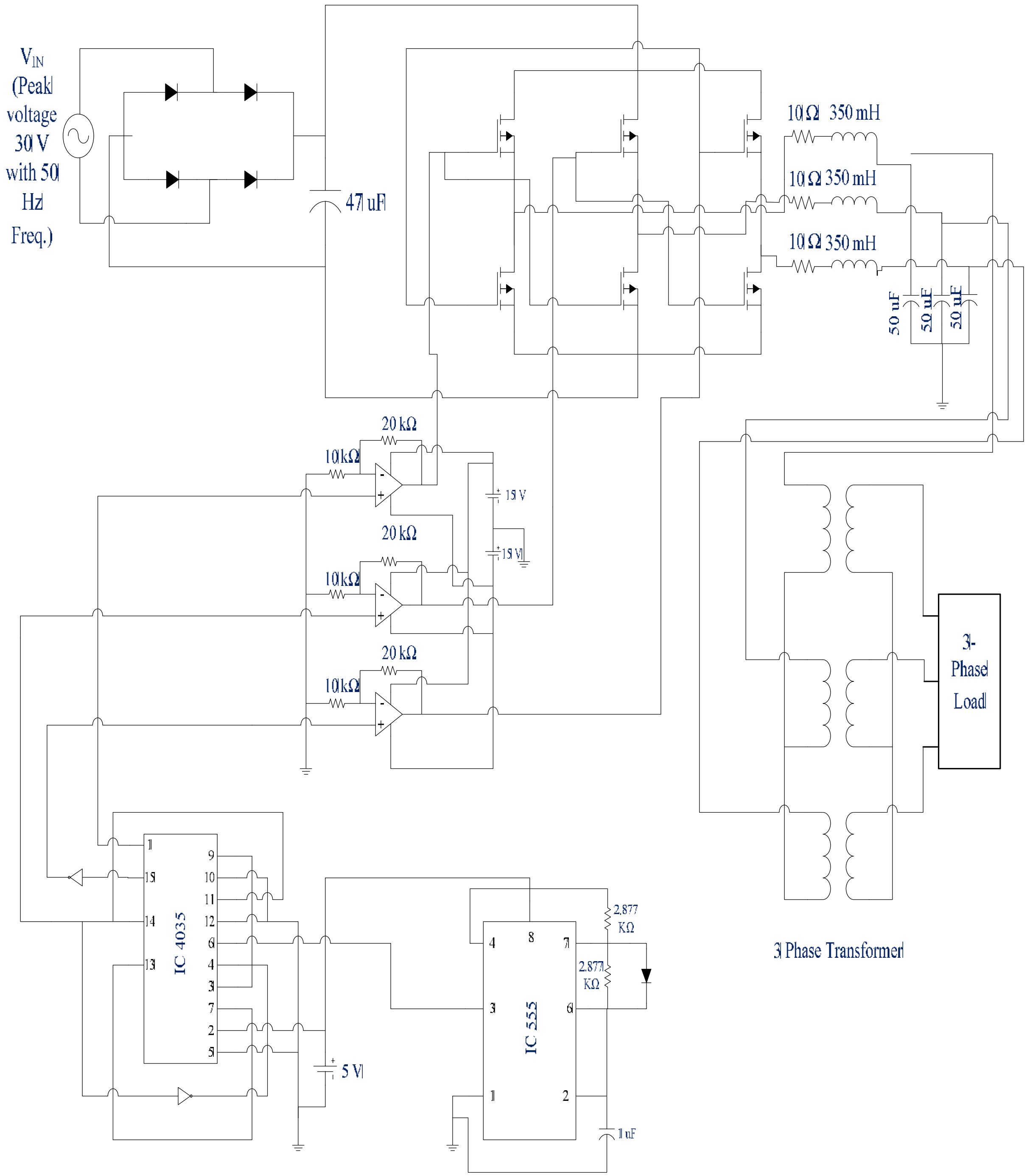


Figure 2: Circuit diagram of proposed model

The complete circuit diagram of the work is shown in Figure 2. To explain the circuit diagram properly, it can be done by dividing the whole work into some separate sections.

Rectifier Section: The single phase AC power supply is rectified to a pure DC using a bridge rectifier circuit and a filter capacitor[5]. The capacitor value is considered to a large value of 47 uF to reduce the ripple voltage from the output DC.

Inverter Section: Three half bridge inverters are connected in a cascaded Y configuration to make a three phase inverter. Here IRF 640 (n-channel enhancement type) is used as switching devices and all of them are operated in saturation region to minimize the switching losses from linear or ohmic region. The three phase gate pulse from the gate driving unit drives this inverter circuit such that a three phase voltage with 120 degree displacement is obtained at the output section.

Gate Driving Section: The three phase is generated by IC 4035 Shift register (Serial in Parallel out)[6]. A timer 555 IC in astable mode is configured to generate and supply clock pulse with frequency of 250 Hz to the shift register IC. The generated three phase pulse is the amplified using 741 IC (non-inverting amplifier) to a value of approximate 30 V. The amplifier network is used to operate MOSFET in saturation region. As we know from the MOSFET operation (n-channel),

$V_{DG} = V_{DS} - V_{GS}$Must be <0 V in order to operate in saturation region. As $V_{DS}$is fixed at some value nearly 20 V, the gate voltage should be greater than 20 V. That is the main reason for using amplifier network.

Filter Section: A LC filter is used to convert square wave into pure sine wave. A current limiting resistor is used to limit the inductor current to get a stable output. The value of capacitor is considered at a large value of 50 uF and the value of inductor is calculated using the following equation (1):

$$f = \frac{1}{2\pi\sqrt{LC}} \tag{1}$$

Where f=50 Hz.

Output Section: The filtered output is connected with a three phase Y-Y step up transformer. The load is connected at the secondary side of the transformer.

Result Analysis

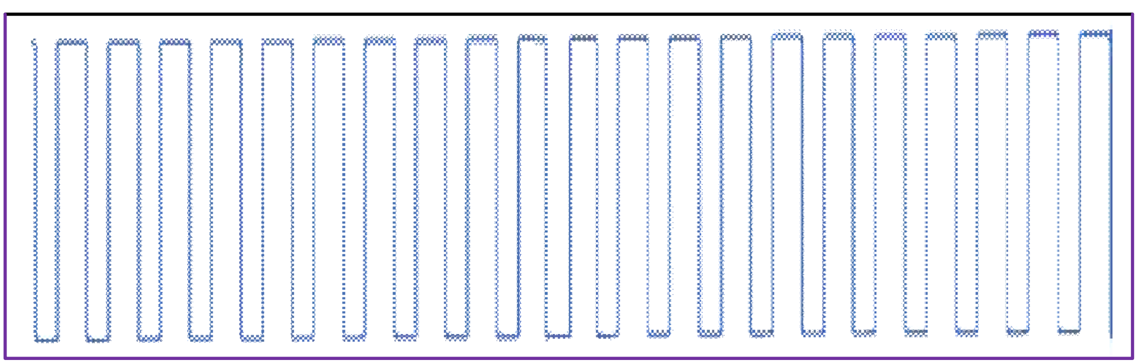


Figure 3: Clock pulse (250 Hz) generated by 555 timer IC

Figure 3 shows the clock pulse with frequency of 250 Hz generated by 555 timer IC. This clock pulse is required as input to the IC 4035 (shift register) to generate three phase pulse to trigger the switching devices. The 555 timer IC is configured to operate in astable mode of operation with 50 % duty cycle.

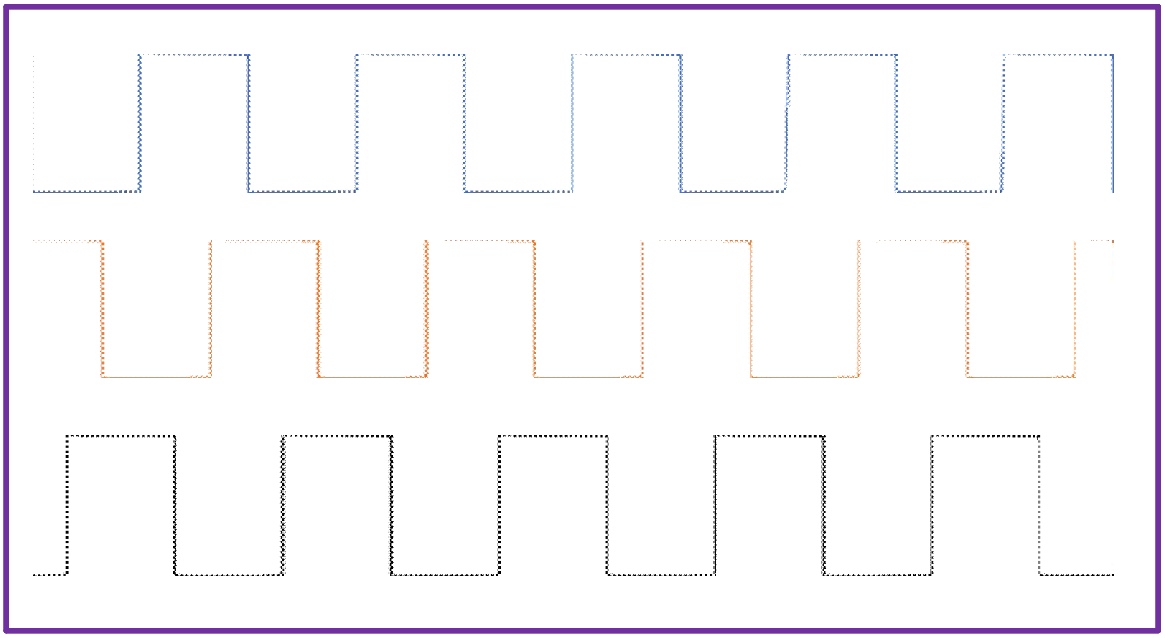


Figure 4: Three phase pulse (50 Hz) generated from IC 4035 (Shift Register)

Figure 4 shows the three phase pulse generated from the gate driving unit. It is clearly seen from the figure that pulses are 120 degree displaced from each other.

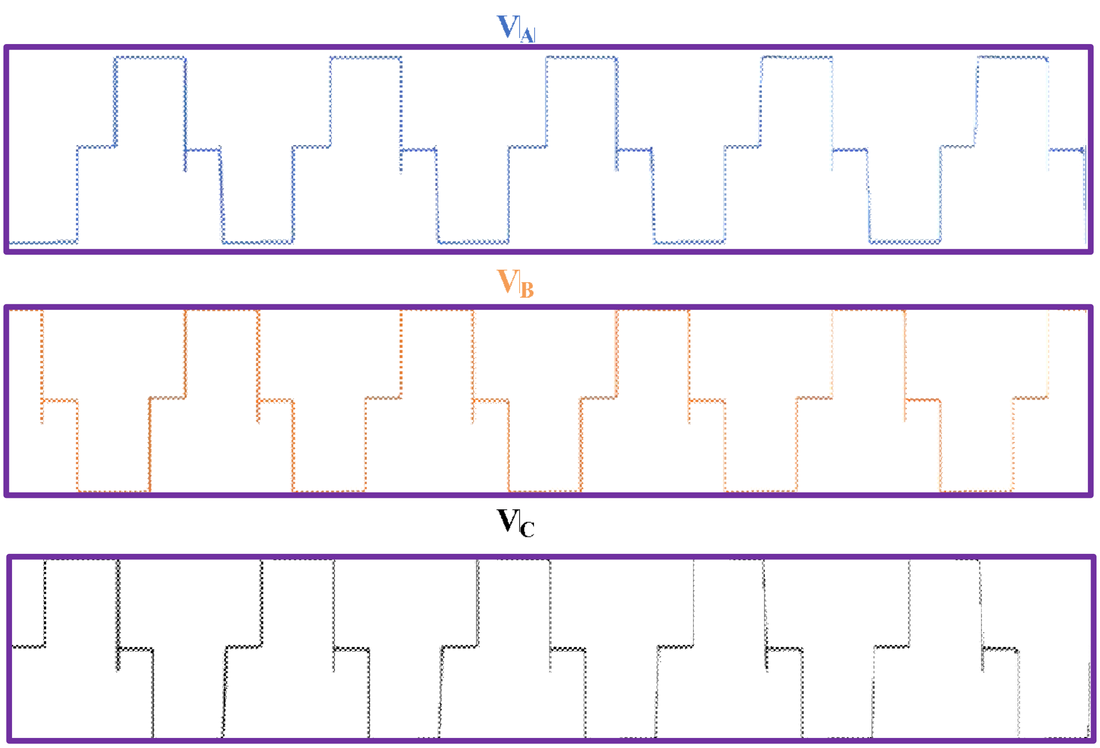


Figure 5: Output of a single phase to three phase converter without filter

The output of three phase inverter without LC filter is shown in Figure 5. This is being called modified inverter output. This output is feed to a filter circuit to convert into pure sine wave.

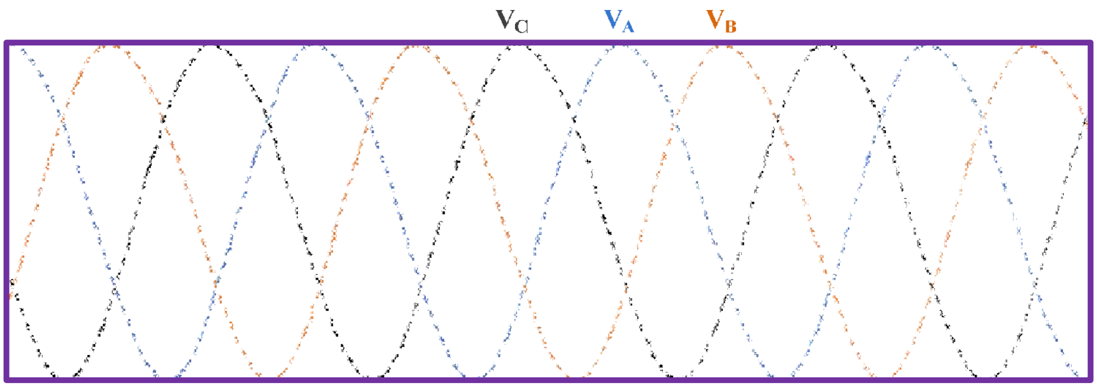


Figure 6: Filtered output of a single phase to three phase converter

Figure 6 shows the final output of the whole work. The square wave is filtered using LC filter circuit to produce a pure sine wave.

Table 1: Data table for the single phase to three phase converter.

SL No.	Three Phase inverter Voltage	Transformer voltage
01	Line to Line voltage: 10 V	Line to Line voltage: 100 V
02	Line to Phase voltage : 7.02 V	Line to Phase voltage: 70 V

Conclusion

The proposal of this work was to design and implementation of single phase to three phase power converter. After analyzing the whole system step by step for optimization, a system was designed and implemented. Simulation results showed that significant improvements in terms of power conversion have been achieved. In order to meet our goal, a complete simulation design was done in Proteus (Version 8.5) software. It was very challenging in designing the filter circuit due to excessive current released by the inductor. To omit this problem a current limiting resistor was used and the parameters of inductance and capacitance were calculated. After filtering the output of modified three phase inverter, pure sine wave was achieved as output which results in using this work in driving small induction motors (3 Phase) effectively. Finally, it can be said thatthis work can be implemented by the power companies in rural areas to supply electricity for the three phase load at distant places by a single phase transmission system in order to minimize the transmission cost and supply electricity at lower cost.

References

1. Muhammad H. Rashid, 2013, Power Electronics Circuits, Devices & Applications (No. Ed. 3), Prentice Hall

2. V.K Mehta and Rohit Mehta, 2011, Principles of Power System (No. Ed. 4), SS and Brian.

3. S. Dewan and M. Showleh, 1981, “A novel static single-to three-phase converter,” IEEE Trans. Magn., vol. 17, no. 6, pp. 3287–3289.

4. Z. Idris, M. K. Hamzah, and N. R. Hamzah, 2005, “Modelling simulation of a new single-phase to single-phase cycloconverter based on single-phase matrix converter topology with sinusoidal pulse width modulation using matlab/simulink,” in Proc. Int. Conf. Power Electron. Drives Syst., vol. 2, pp. 1557–1562.

5. Louis Nashelsky and Robert Boylestad, 2007, Electronic Devices and Circuit Theory (No. Ed. 9), Pearson Education

6. Shift Register. Web Source: https://www.electronics-tutorials.ws/sequential/seq_5.html. Last Accessed on September, 2017.

Consequences of three different educational systems: Bengali, English and Madrasah medium--Evaluation of impact on higher education of Bangladesh

Sadia Mahjabeen*

Abstract: *The education system in Bangladesh is characterized by the co-existence of three separate streams: Bengali Medium, English Medium, and the Religious Branch or Madrasah Medium. Students are free to choose anyone of them provided that they have the means. The research hypothesis describe that the different educational streams are creating incompetence and troubles for the students in universities and higher education and the Ministry of Education should make policies to make one standard educational system for everyone by incorporating these three different educational streams of Bangladesh. A questionnaire was designed to survey under-graduate students and employees working in different organizations to find out the actual picture. The majority of the answers are considered the actual results of my research and the variations are considered as outliers. The research found that most of the under graduate students are faced with problems in their higher studies because of their schooling background and almost 71% of the students preferred a change in the educational system of Bangladesh. Though most of the students of Madrasah medium continue higher education in Madrasah medium and work in different madrasahs and in mosques, still some of them go for higher studies in universities. Thus the scope of integrating these three different educational systems is of outmost importance.*

Key words: *Bengali Medium, English Medium, Madrasah Medium, educational system, and higher education.*

Introduction

Education is very important for an Individual, Society and Nation. It builds up strong human resource which is vital for National development. The education system in Bangladesh is characterized by the co-existence of three separate streams. The mainstream happens to be a vernacular based secular education carried over from the colonial past-Bengali medium. There also exists a separate system of religious education- Madrasah medium. Finally, based on use of English as the medium of instruction, another stream of education, modeled after the British education system, has rapidly grown in the metropolitan cities of Bangladesh. [1]

Though the above streams have certain common elements and there exists scope for re-integration of graduates of one stream with the other at different levels, they are diverse from each other. If various types of education system exist in a country, students will build up with different types of views, mentality and thoughts. The Elite person of the society will take education from English medium or expensive places by force of money; whereas the poor or needy students will go to Madrasah or General medium school. So, a mental separation and discrimination established from

**Lecturer, Department of Business Administration, Faculty of Business Studies*
Dhaka International University, Bangladesh
Correspondence to: smahjabeen@gmail.com

beginning of their education life. This diversity of educational system is creating incompetence and troubles for the students in universities and in job sector. [2]

The research paper on **"Consequences of three different educational systems: Bengali, English and Madrasah medium--Evaluation of impact on higher education of Bangladesh"** is a background report for the students, teachers and also the education board of Bangladesh. The paper would be helpful for these readers to bring about a change in the educational system by incorporating these three different educational streams of Bangladesh so that every student will get the same and proper opportunities from the state. All sorts of discrimination in every stage of education have to be removed. Introduction of this unified system will be scientific, secular and pro-people where all students from different backgrounds and communities will posses same right.

Problem Definition

Background of the Problem

Through history, Bangladesh has gone through various phases of education systems. From the time of the English rule to Pakistani regime and finally Bangladeshi system, education has evolved not only in methods but also in fundamental aspects like language and governance. After the liberation war of Bangladesh in 1971, the People's Republic of Bangladesh became an independent nation free to choose its own educational destiny and many forms of education were permitted to co-exist. Presently, the Bangladeshi system of education is divided into three different branches. Students are free to choose anyone of them provided that they have the means. These branches are: a) The English Medium, b) The Bengali Medium, and c) The Religious Branch. [3]

On completion of primary and junior secondary education, students in the mainstream continue in government and non-government secondary schools for a 2 year secondary education in their respective areas of specialization i.e. humanities, science, commerce, etc. At the end of 10th grade, the students sit for their first public examination called Secondary School Certificate (S.S.C.) examination under the supervision of seven education boards. The students of religious education and English medium streams also sit for their respective public examinations, Dakhil and Ordinary Level Exams (O-Levels), conducted by the Madrasah Education Board and London/Cambridge University respectively. [4]

Students who succeed in passing the Secondary School Certificate (S.S.C.)/ Dakhil/ O' Level examination have the option of joining a college for a 2 year higher secondary education in their respective areas of specialization. After 2-year higher secondary education, one has to sit for another public examination called Higher Secondary Certificate (H.S.C.) examination conducted by the education boards. Students of Religious and English Medium streams also sit for their respective public examinations, Alim and Advanced Level (A-Level), conducted by the Madrasha Education Board and London/Cambridge University respectively. [5]

After passing the H.S.C/ Alim/A-Level examination, students go for Under-graduate education that are offered at a number of public and private universities, degree colleges or technical colleges. Successful completion of a degree course is a pre-requisite for appointment to a white-collar civilian job. But the recruitment processes for such under-graduate education or the curriculum are not differentiated for students of different educational background. So, at this level of their higher education, students from different background encounter different problems and incompetence. To remove all sorts of discrimination in every stage of education, one standard educational system should be developed by incorporating these three different educational streams.

Statement of the Problem

The co-existence of three separate educational systems is creating problem for both the students as well as for the educational system of Bangladesh. The research paper on **"Consequences of three different educational systems: Bengali, English and Madrasah medium--Evaluation of impact on higher education of Bangladesh"** focuses on finding out that the different educational streams are creating incompetence and troubles for the students in their universities or higher education and the Ministry of Education should make policies to make one standard educational system for everyone by incorporating these three different educational streams of Bangladesh.

Literature Review

The Bengali Medium

Bengali Medium education is offered by the government. In the Bengali Medium, all the courses are offered in Bengali with the exception of English courses and the Religious course. The tuition fee is minimal compared to English schools but they still vary largely between schools. For example, a government school for the children of Army officers is more likely to be more expensive than a government school in a poor village district. But everybody has the right to attend these schools provided that one meets the minimum criteria. After three years of pre-school, students in the Bengali medium do five years of primary school and sit for the Primary School Certificate (P.S.C.) exam. Then they move to high school for grade five to grade eight and appear in the Junior School Certificate (J.S.C.) exam under the national curriculum. At the end of the tenth grade, one must write the S.S.C. (Secondary School Certificate) Examination, which is common to everybody graduating the same year in Bangladesh. These exams are divided in regional boards to be administered and students write the exams in different schools as indicated by their respective boards.[6] Previously there were three divisions for the results: The first division (grades of 60% or above), the second division (grades of 45% to 59%) and the third (average grade of 33 % to 44%). Below 33 percent was considered a failure and students in this category were forced to rewrite the exam the next year. Students obtaining 80 percent or higher were given special recognition. But from 2001, a standardized process of grading have been introduced which is acceptable worldwide.[7]

The English Medium

Alternative to the Bengali Medium is the English Medium. The British rule in the Indian Subcontinent is still very influential as the second official language of Bangladesh is still English. Students in Bangladesh have the right to attend schools in the English medium where courses are all taught in English using English books with the exception of the Bengali courses and the Religious course which are offered in Bengali and Arabic. However, English medium schools are mainly private and thus reserved for the wealthy class. After three years of pre-school, students must successfully pass through ten grades to be eligible for writing the Ordinary Level Exams. Then after one more year of studies, students can write the Advanced Level Exams. Both these routines are offered for Arts students and to Science students. The O-Levels and A-Levels are both prepared in England and are common to every country in the world at the same time. To write these exams, students must go to the British Council in Dhaka. Once the exams are written, they are sealed in envelopes and sent to England for corrections. After the A-Levels, students are free to choose their subjects in the Universities but most tend to leave the country to study abroad. [8]

The Madrasah Medium

Bangladesh is a very poor country with millions of homeless children. To educate these children, there are religious institutions called "Madrasahs" where these children are sheltered, fed and taught the ways of Islam by priests. These children learn the scripts from the Quaran and the regular prayers. Madrasahs are generally linked to Mosques and the children usually serve the Mosque. As subsidies for these institutions are very low, often these establishments rely on public donations and donations to the Mosques. Higher studies for these establishments are close to non-existent and upon maturity; the children often become priests and other religious figures. Islam plays a very dominant role in the education systems of Bangladesh. In all the branches, it is required by the government since 1983 to teach Islamic studies. In 1971 after having the independence of Bangladesh, step has been taken for the active modernization of Madrasah Education. Bengali, Mathematics, English, Social science, General Science are made compulsory.[9] In 1978 Madrasah Education Board was formed under Ordinance for the Modernization of Madrasah Education. The Madrasah Education Board started its activity independently in 1979. With the passage of time of Madrasah Education, in 1978 humanity and science faculty are included in Alim level and in 1980; Fazil degree was given the standard of Education of H.S.C level. [10]

Research Objectives

This research aims at one main objective and six subsidiary objectives that are discussed as:

General objective: To find out if different educational streams are creating incompetence and troubles for the students of different demographics in their universities or higher education in Dhaka.

Specific objectives: To find out--

- The curriculum Bengali medium students go through and their strengths and weaknesses.
- The curriculum English medium students go through and their strengths and weaknesses.
- The curriculum Madrasah medium students go through and their strengths and weaknesses.
- Advantages that the students of different medium enjoy in higher education of Bangladesh.
- Disadvantages that the students of different medium face in higher education of Bangladesh.
- Effective ways to overcome such problems created by different educational systems.

Methodology

This study was conducted through collecting and analyzing both primary and secondary data. This is a descriptive research as students of different background were surveyed through a questionnaire. The methodology for the study is as follows:

Nature of Research: Both qualitative and quantitative research designs were employed to conduct the study. The quantitative study, in the form of questionnaire survey compiled benchmark data on the issues of the study and was used to test research hypothesis. This required collecting relevant information regarding present status of the students of different background through field visit in a public university, two private universities and a madrasah. Moreover, the researcher also carried out a survey through a questionnaire and in-depth interviews. The qualitative studies contributed in establishing the conceptual framework of the study. This involved collecting information mainly from the internet, including Educational Board or the Ministry of Education of Bangladesh.

Research Questions: The researcher evaluated six questions regarding the research focus. So answers to the following questions about educational streams of Bangladesh were necessary:

1. What curriculum Bengali medium students go through and their strengths and weaknesses?
2. What curriculum English medium students go through and their strengths and weaknesses?
3. What curriculum Madrasah medium students go through and their strengths and weaknesses?
4. What advantages do the students of different medium enjoy in higher education of Bangladesh?
5. What disadvantages do the students of different medium face in higher education of Bangladesh?
6. What are some effective ways to overcome such problems created by different educational systems?

Research Hypotheses: The co-existence of three separate educational systems is creating problem for both the students as well as for the educational system of Bangladesh. The research hypotheses is to find out that different educational streams are creating incompetence and troubles for the students in their universities and policies should be taken by the government to make one standard educational system for everyone in Bangladesh.

Population and Sampling: The geographic coverage of the study covered the collecting relevant information regarding present status of higher education through field visit in a public university, two private universities and a madrasah. Sample of 50 students (18 from public universities, 18 from private universities and 14 from well reputed madrasahs) were constructed from Dhaka city given the limited scope. As the research is targeted toward Dhaka city, Non-Probability sampling methods were used. Due to the sparse geographic distribution of the population, a combination of Convenience and Judgmental sampling techniques were appropriate for research of this sort.

Scaling Techniques and Questionnaire development: A questionnaire was developed including 8 close ended and 2 open ended questions. There were some introductory questions which investigated the gender, age and medium of education of students studying in under-graduate level. Though the questionnaire has not been pretested but it has been checked by the supervisor.

*** The Questionnaire is attached in the Appendix.*

Research Scope

Subjective Scope: To evaluate the effect of different educational streams on higher studies of students.

Spatial Scope: Bangladesh, public and private universities and madrasahs of Dhaka city.

Data Analysis and Reporting: Descriptive statistical analyses have been employed on a large scale to test research hypotheses and drawing results of the study. To test the hypotheses of the study, bar graph and pie chart from MS Excel was used. After completing data analysis and finding generation, a thorough research thesis has been prepared and submitted for evaluation. However, regular reporting to the supervisor took part to ensure effective study.

Limitations

The paper has a number of limitation because of which the researcher was unable to present the report to the extreme level of accuracy. These were-

Time constraint: The period for writing this report was restricted to 3 months. To make this report more accurate and present it more descriptively more time was needed.

Availability of data: The data required for this project was not easily accessible. There can be some limitations of access to information, which are strictly confidential for the company.

Bias results: While doing the survey, many respondents marked most of the questions without spending enough time on reading the questions. This could result inaccurate results.

Sample Size: 50 respondents are not enough to get any accurate information for the true nature of outcome of our survey. The sample size should have been a lot more. So doubts remain about how representative it is of the actual number of people and their experiences. Again it was difficult to survey the students from Madrasah medium as very few of them actually go for higher studies in universities. Most of the male students of Madrasah medium continue higher education in Madrasah medium and work in different madrasahs and in mosques. Again due to time constraints the researcher was unable to interview the professionals like teachers, intellectuals and authorized people of the education board.

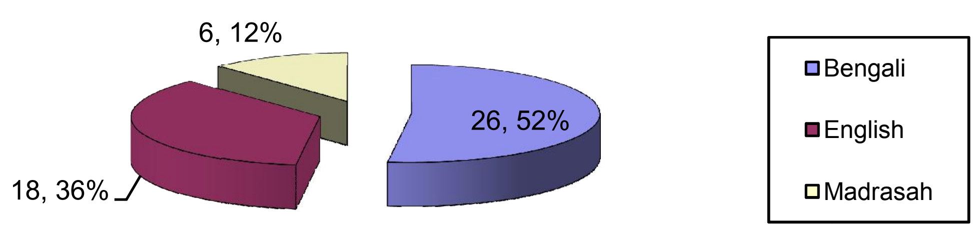
Despite all these limitations, the researcher tried best to ensure the most up to date and accurate presentation of information in this research report to make this an acceptable and useful one.

Findings

Projection of the Research Data: 50 under graduate students were surveyed by a questionnaire designed by the researcher. After carrying out the survey and presenting student respondents with ten questions out of which 8 close-ended and 2 open-ended questions and the researcher was provided with various answers. Out of the 50 respondents, 34 were male and 16 were female and their ages ranged between 19 years to 25 years.

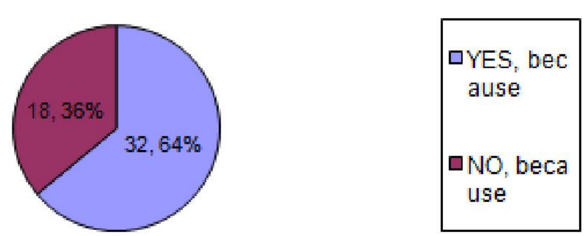
Following are brief analyses and presentation of the data retrieved from the survey of 50 under graduate students:

Question # 1: What was your medium of education?



Result: Out of 50 under graduate students, 26 (52%) were from Bengali medium, 18 (36%) were from English medium and 6 (12%) were from Madrasah medium.

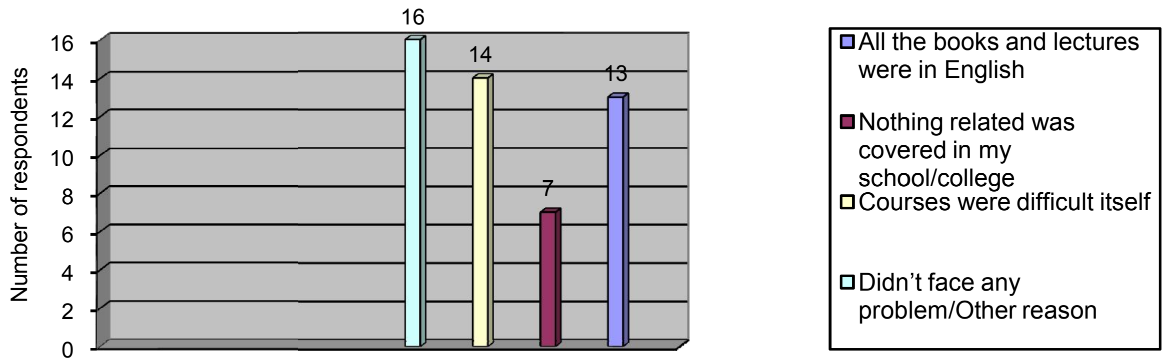
Question # 2: Do you think your medium of education is perfect and teaches you everything which is needed in your higher education and in job?



Result: Out of 50 students 12 (36%) thought that their medium of education is perfect and teaches everything which is needed in higher education and in job. This reply mostly came from the English medium students. Whereas majority of 32

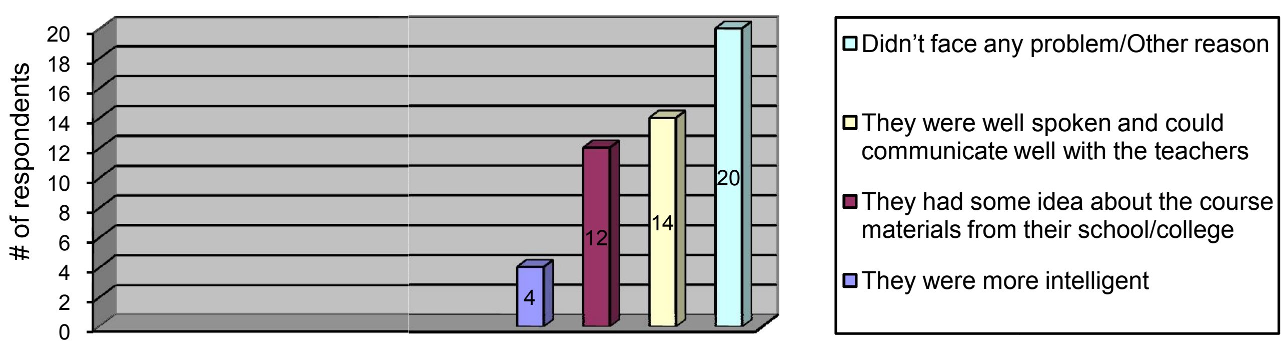
(64%) of the students replied that their medium of education was not perfect and needs improvement. Some of the Bengali medium students preferred English medium as all higher studies are done in English. On the other hand some English medium students preferred Bengali medium as it is more adaptable and realistic in Bangladeshi context.

Question # 3: What problems did you face in understanding the course materials when you were enrolled in a university?



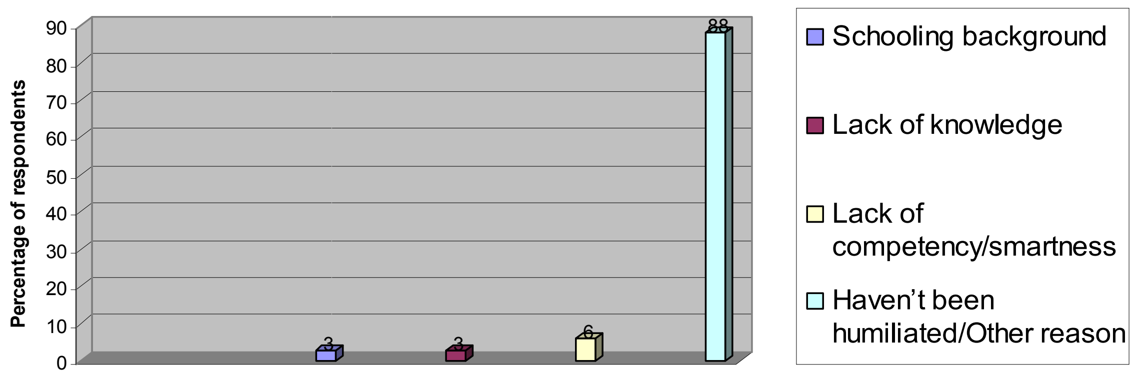
Result: 13 (26%) Bengali medium students answered that they faced problems in understanding the course materials as all the books and lectures were in English. 7 (14%) students from all medium answered that nothing related was covered in their school/college as they migrated from science to business studies. 14 (28%) students replied that courses were difficult itself and 16 (32%) students said that they didn't face any problem. Though majority said that they didn't face any problem, still a significant portion (26%) pointed to their incompatibility in English.

Question # 4: What problems did you face coping up with your fellow class mates?



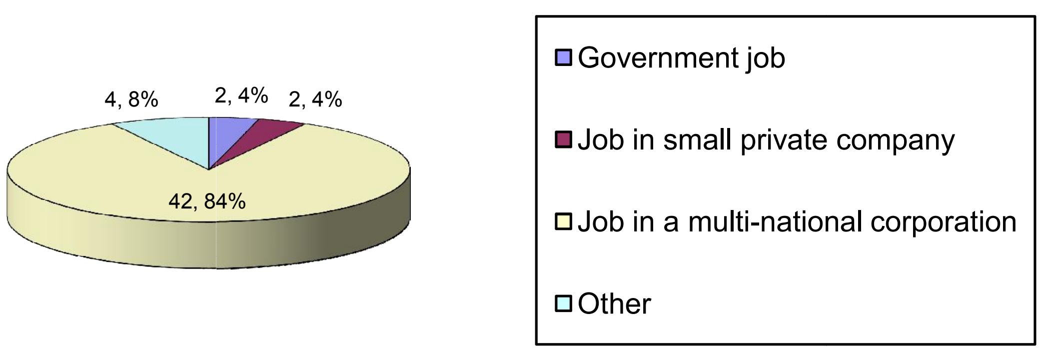
Result: Out of 50 students 4 (8%) students faced problem coping up with their fellow class mates as they were more intelligent. 12 (24%) students said that their class mates had some idea about the course materials from their school/college and 14 (28%) students said that their class mates were well spoken and could communicate well with the teachers. These two groups (jointly 52%) addressed to the problems in their schooling background. Some of the Bengali medium students said that class mates from English medium could communicate well with the teachers. Few English medium students said that Bengali medium students are conceptually advanced. Finally the remaining 20 (40%) students didn't face any problem coping up with their fellow class mates.

Question # 5: Have you ever been embarrassed by any of your teacher or your class mate because of your—



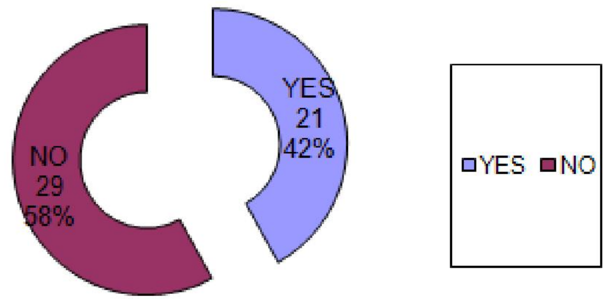
Result: 3% of the total respondents said that they have been embarrassed by any of their teacher or class mate because of their schooling background. Another 3% students have been embarrassed because of their lack of knowledge in the subject matter. 6% students answered that they have been embarrassed because of their lack of competency/smartness. Majority of 88% students have never been humiliated by their teacher or class-mates. This indicates that most people are aware of the differences in our educational system and treat students accordingly.

Question # 6: What kind of job would you prefer?



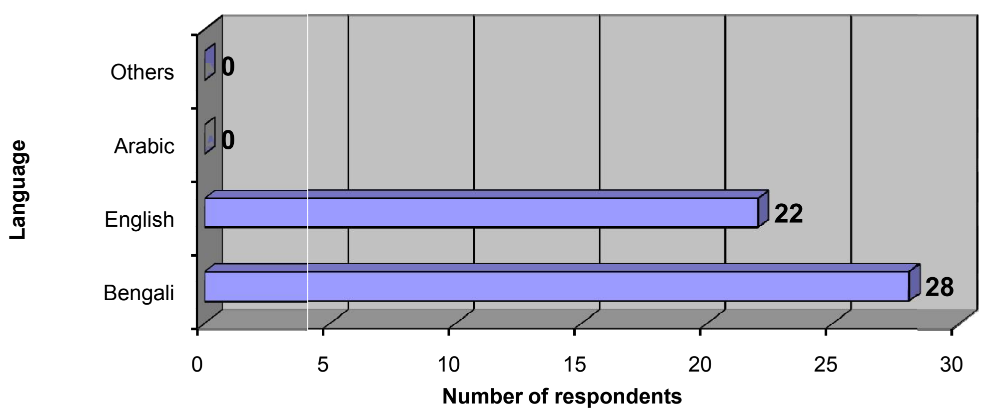
Result: 2 (4%) student prefers a government job, 2 (4%) student prefers a job in a small private company, majority of 42 (84%) students want job in a multi-national corporation. 4 (8%) students have other plans for future which were business of their own. So, this is quite clear that no matter which schooling background they are from, most students want to get a job in a multi-national corporation for which they must prepare them-selves from the very primary level of education.

Question# 7: Would you like to settle abroad?



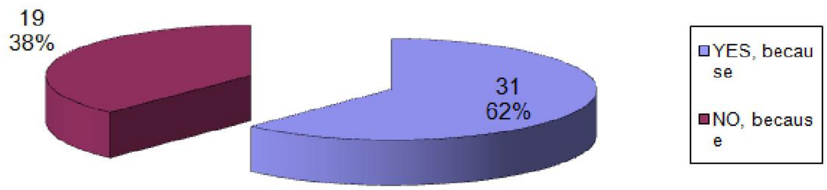
Result: 21 (42%) respondents would like to settle abroad and the other 29 (58%) respondents do not intend to settle abroad as they love their country as well as their family. Among the 21 respondents desiring to settle abroad, 15 were from English medium and they emphasized the security of life abroad. This indicates that affection for the country might not be emphasized in the educational curriculum of English medium.

Question # 8: Which language do you feel most comfortable to use?



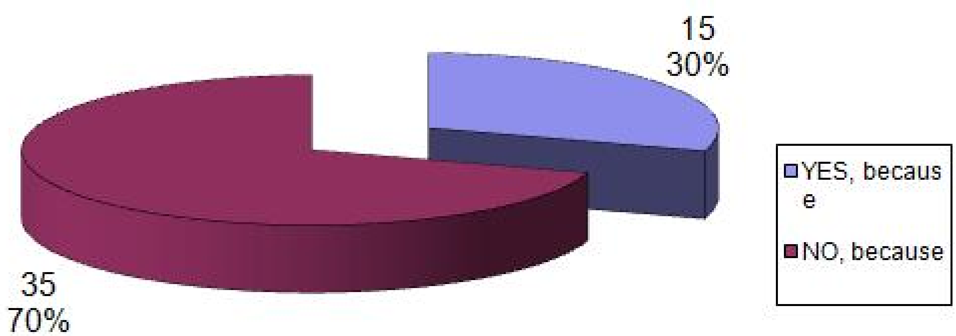
Result: 28 (56%) of the students said that they are most comfortable to use Bengali as a way of communication whereas 22 (44%) students said that they are most comfortable using English. No response came for Arabic or other languages. Interestingly, many Bengali medium students claimed to be comfortable using English. This is because they have an inferiority complex of not coming from an English medium background. On the other hand, students from English medium responding to be comfortable using Bengali can be benefited and conceptually clear about some of their lessons if they were taught in Bengali.

Question # 9: Do you think that it creates any problem for the universities' authorities or the employers of different companies to evaluate candidates from different mediums? Or are they biased towards any particular medium of education while recruiting candidates?



Result: 19 (38%) respondents said that the universities' authorities or the employers of different companies are not biased towards any particular medium of education while recruiting candidates. The reason they addressed to is that the universities and employers are also well acquainted with the educational system of Bangladesh. Whereas 31 (62%) students said that they are biased. Some of them said that they are biased towards English medium students as they are smarter and more presentable and some of the respondents said that Bengali medium students are preferred as they are more hard working and more capable to handle real life situation in Bangladesh.

Question # 10: Do you prefer the current educational system of Bangladesh?



Result: Only 15 (30%) out of 50 respondents favor the current educational system of Bangladesh. The reason they gave for such answer is that as a developing country, Bangladesh is not ready for such change yet. On the other hand 35 (70%) respondents thought that one standard educational system for everyone should be made by incorporating these three different educational streams. Reasons included—

- It will be easy to evaluate all students in universities and in job sector
- Issue of discrimination or segregation will not arise
- As most of the students are not sure about their future goal, introduction of a standard preparation system in the primary level would be beneficial.

Analysis

From the primary data gained by surveying the under graduate student group, it can be concluded that most of the students are faced with problems in their higher studies because of their schooling background and almost 70% of the students preferred a change in the educational system of Bangladesh.

Based on the research results, the research hypothesis was supported and proven right. This finding has confirmed a significant problem arises in tertiary education as an impact of primary and secondary educational background.

This is explicable as the students seemed to emphasize more on focused courses; meaning emphasis on those curses that would help them pursue higher education in a specific concentration. That included the response of Bengali medium and Madrasah medium students' more emphasis on English as the entire tertiary curriculum runs in English. If they were trained more or had the practice of using English as a language in their primary and secondary level, it could save them a lot of hassle while pursuing higher education. If their universities do not provide courses like Basic English or Advanced level English, their misery double folds.

However, the English medium students complained about their curriculum content and examination schedule. As their curriculum runs as per the British council rules, they feel that they are not taught what it takes to appear and do well in the public universities of Bangladesh especially in medical and engineering sector. Also, the admission tests in such public universities are conducted in Bengali; all the questions and also the answers should be in Bengali. English is just another category of the question paper. So, the English medium students face difficulty and sometimes don't even appear in the admission tests of those public universities.

Recommendations and Managerial Implications

Each educational stream has its own benefits and drawbacks. Efforts should be taken to amplify the benefits and reduce drawbacks by unifying these three different educational streams of Bangladesh. The integration process is undoubtedly time consuming and expensive, still initiatives have to be taken by the Ministry of Education for the overall long term benefit of the nation. This will enable every student to get the same and proper opportunities from the state.

Students from different medium or stream of education are faced with different problems which are out of their own control. The suggestion is to bring about a change in the educational system by incorporating these three different educational streams of Bangladesh so that every student will get the same and proper opportunities from the state. All sorts of discrimination in every stage of education have to be removed. Introduction of this unified system will be scientific, secular and pro-people where all students from different backgrounds and communities will posses same right.

As the present research examined higher education in a single city, Dhaka, additional studies need to be undertaken to examine tertiary education in different regions of Bangladesh other than Dhaka with larger samples. Nevertheless, findings from this study provide additional insight into condition and challenges in the education domain. Results of this study should encourage strategy development for Education Board and the Ministry of Education. In this respect, this paper suggests certain policy implications for educational service providers like schools, colleges, and universities.

Developing appropriate programs and providing ongoing training should equip academic and non-academic staffs with necessary skills to better serve the students. This implies that teachers and non-academic executives must be trained in such a way that their "soft" skills are enhanced. The government can design targeted training programs for academic and non-academic staffs of different medium that encourage them to instill the overall quality of education that are being provided to the students.

The proposed recommendations may be used as a basis to plan efforts towards increasing students' involvement and satisfaction in their higher studies. This study, although designed in a specific context, may be extended to other similar services and help improve quality of life for the masses and thus increase overall quality of education.

Conclusion

If various types of education system exist in a country, students will build up with different types of views, mentality and thoughts. It has been found from the research that most of the under graduate students are faced with problems in their higher studies because of their schooling background and almost 70% of the students preferred a change in the educational system of Bangladesh. Most of them agreed to the fact that it will be easy to evaluate all students in universities and in job sector if a standardized system is made for all. Though Most of the students of Madrasah medium continue higher education in Madrasah medium and work in different madrasahs and in mosques, still some of them go for higher studies in universities and jobs in different organizations. Thus the scope of integrating these three different educational systems is valid and my research hypothesis has been proved correct. Each educational stream has its own benefits and drawbacks. Efforts should be taken to amplify the benefits and reduce drawbacks by unifying these three different educational streams of Bangladesh. The integration process is undoubtedly time consuming and expensive, still initiatives have to be taken by the Ministry of Education for the overall long term benefit of the nation. This will enable every student to get the same and proper opportunities from the state.

References

1. Alam, G. M. 2008. Impact of Private Higher Education on Bangladeshi Education System: *An Investigation of Education Policy*. VDM: Germany.

2. Asad, A. U. Z. 2015. Unitrack Education System of Bangladesh. *Emancipating Education for all*. Retrieved February 20, 2016, from http://www.emancipating-education-for-all.org/content/unitrack-education-system-bangladesh

3. Bangladesh Bureau of Educational Information and Statistics. 2016. *Educational structure of Bangladesh*. Retrieved February 20, 2016, from http://www.banbeis.gov.bd/es_bd.htm

4. Education in Bangladesh. (n. d.). In *Wikipedia*. Retrieved February 20, 2016, from http://en.wikipedia.org/wiki/Education_in_Bangladesh

5. Web Portal on Education and Daily Needs. 2016. *Bangladesh Education at a Glance*. Retrieved February 20, 2016, from http://www.dailyneeds.com.bd/edu/bd_edication_at_a_galance.htm

6. Ministry of Education, Government of the People's Republic of Bangladesh. 2016. *Intermediate and Secondary Education Boards, Bangladesh*. Retrieved February 20, 2016, from http://www.educationboard.gov.bd/

7. Ministry of Education, Government of the People's Republic of Bangladesh. 2016. *Education System of Bangladesh*. Retrieved February 20, 2016, from http://www.moedu.gov.bd/

8. Gomes, N. 2009. *Is Bangladesh Education Policy 2009 a mirror to build a holistic individual?* Retrieved February 20, 2016, from

http://www.e-bangladesh.org/2015/09/18/is-bangladesh-education-policy-2015-a-mirror-to-build-a-holistic-individual/

9. Hasan, Z. 2015. Market solutions for Qawmi madrasas. The Daily Star. Retrieved February 20, 2016, from http://www.thedailystar.net/newDesign/newsdetails.php?nid=72723

10. Bangladesh Madrasah Education Board. (n. d.). *Background of Madrasah Education.* Retrieved February 20, 2016, from http://www.bmeb.gov.bd/

Appendix
Questionnaire

Topic: This questionnaire is designed to investigate "*Consequences of three different educational systems: Bengali, English and Madrasah medium--Evaluation of impact on higher education of Bangladesh"*. The information disclosed in response to the following questions will be confidential and will be used solely for academic purpose. The target group is confined to Undergraduate students.

Instruction: Please put a tick mark (√) on the correct option and feel free to select more than one option wherever applicable.

Gender: □ Male □ Female **Age:** ________Years

Education: □ Graduate □ Masters □ Other__________

Name of university: ___________________________________

1. What was your medium of education? □ Bengali □ English □ Madrasah

2. Do you think your medium of education is perfect and teaches you everything which is needed in your higher education and in job?

□ Yes, because…

□ No, because…

If no, which medium do you prefer and why?

3. What problems did you face in understanding the course materials when you were enrolled in a university?

□ All the books and lectures were in English

□ Nothing related was covered in my school/college

□ Courses were difficult itself

□ Didn't face any problem/Other reason____

4. What problems did you face coping up with your fellow class mates?

□ They were more intelligent

□ They had some idea about the course materials from their school/college

□ They were well spoken and could communicate well with the teachers

□ Didn't face any problem/Other reason____

5. Have you ever been embarrassed by any of your teacher or your class mate because of your--

□ Schooling background

□ Lack of knowledge

□ Lack of competency/smartness

□ Haven't been humiliated/Other reason____

6. What kind of job would you prefer?

□ Government job

□ Job in a small private company

□ Job in a multi-national corporation

□ Other____________________

7. Would you like to settle abroad?

□ Yes, because…

□ No, because…

8. Which language do you feel most comfortable to use?

□ Bengali □ English □ Arabic □ Other_____________________

9. Do you think that it creates any problem for the universities' authorities or the employers of different companies to evaluate candidates from different mediums? Or are they biased towards any particular medium of education while recruiting candidates?

□ Yes, because…

□ No, because…

10. Do you prefer the current educational system of Bangladesh?

□ Yes, because…

□ No, one standard educational system for everyone should be made by incorporating these three different educational streams because…

Thanks for your cooperation!

Adoption of Green Banking Policy Guidelines by Private Commercial Banks in Bangladesh

Sayma Sharmen*

Abstract:*The accelerate changes in climate have a direct impact on biodiversity, agriculture, forestry, water resources and human health. In response to the above, banks hold a unique position in the eco-system that can affect production, business, and reputation through green banking and financing. Considering the benefits, commercial banks adopted green approach in the past few years andthrough various initiatives in all possible scales to be more environmentally responsive. The purpose of the study is to find out private commercial bank's initiative towards green banking and what forces influence them to implement the green banking policy guidelines in Bangladesh. To conduct the study, both primary data (in-depth interview and survey of fifty employees) and secondary data are used in a semi-structured questionnaire. The major findings are that the branches are now trying to increase in-house activities and invest more on environment-friendly projects and the employees of the banks are trained and advised to make the clients aware about reducing gas consumption, pollution and other wastage of resources. Further, this paper provides to the banks & the researchers necessary support to design their green banking initiatives.*

Key words*: Green Banking, Environmental Issues, Bangladesh Bank Policy, Internet Banking, Online and Paperless banking.*

Abbreviations: *GB- Green Banking**,** BB- Bangladesh Bank**,** ETP- Effluent Treatment Plant, HHK- Hybrid Hoffman Kiln, CAMEL- Capital, Asset, Management, Earnings, Liquidity, RBCA- Risk Based Capital Adequacy**,** EnvRR- Environmental Risk Rating.*

Introduction

Green banking is a new way of conducting the banking business through considering the hygienic environmental issues as well as corporate social responsibility (CSR). A green bank is called an ethical bank, a socially responsible bank, or a sustainable bank. All these banks in various ways and at different times have engaged themselves in making a better future. The adoption of green banking strategies will help the bank to deal with these risks involved in their business operation[1]. Green banking strategies involve two components. First one is managing environmental risks and other is identifying opportunities for innovative environmentally oriented financial products. The concept of green banking is relatively new in Bangladesh and yet to get momentum, but in the developing countries, it is passing through a mature stage. Mainly green banking activities include using all of the banks

---

**Lecturer, Department of Business Administration, Faculty of Business Studies, Dhaka International University, Bangladesh*

Correspondence to: saymasharmen577@gmail.com

Resources with care, avoiding waste and giving priority to choices that take sustainability into account. It is proved that green banking initiatives can lead indirectly to financial gains through customer retention and respond to customer needs more wisely. In any industry, it is important to have well trained workers available to take up employment challenges.
This highlights the need among the private commercial banks to pay adequate attention to know the attitude of their employees towards the green banking initiatives and adoption of overall green banking policy guidelines.Today, green banking has become a strategic banking approach. Banks are now adopting green approach which is not only beneficial to organization but also become a major tools of ensuring sustainable development.

Scope and Objectives of the Study

The intended objective of this study is to find out current green banking initiativesadoptedby private commercial banks in Bangladesh.The specific objectives of this study are to review the literature of green banking in the context of global economies; to assess the regulatory and supervisory process by Bangladesh Bank; to identify the perception of the bank employees about the green banking and to improve brand image through green banking strategy.

Literature Review

Sustainable development and environmental issues create greater attention in the recent years, thus pressure is being placed on all industries, including financial services, to implement “green” initiatives. While green banking is not yet a key reason for most customers to select one financial institution over another, customer demands and greater environmental awareness are driving a number of financial institutions to go green. Over the past several years more and more conventional banks have been adopting green banking for their products and policies[2]. A green bank is a ‘hybrid’ company whose purpose is not ‘avoiding a negative scenario’ but addressing the core challenges of the time by innovating at the level of the whole eco-system. Environmental impact of bank’s external activity is huge though difficult to estimate. Thus, encouraging environmentally responsible investments and careful lending should be one of the responsibilities of the banking sector. The bank should go green and play a pro-active role to take environmental and ecological aspects as part of their lending principle, which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems[3]. Indian banking is gradually coming to realize that there is need from a shift from the ‘profit, profit and profit motive to ‘planet, people and profit’[4]. Green banking involves pursuing financial and business policies that are not hazardous to environment and help to protect environment. The purposes of green banking are to use resources with responsibility, avoiding waste and giving priority to environment and society. Bangladesh Bank Governor Dr. Atiur Rahmanargued that all need to change the mindset about environmental issues for making a better future through greening financial transactions.His paper focused on the present monetary and credit policy of Bangladesh Bank towards attaining broader financial enclosure. Bangladesh Bank is carry forwarding with technology driven, innovative, environment and low cost banking approach; conveying a qualitative change in banking, preparation of monetary policy, application of advanced banking technology, and use of information and communication technology to extend financial services to the door step of common people. To ensure access to financial services for all, various initiatives have been taken like trade finance; digitalization of the financial sector; channeling liquidity into productive and supply augmenting investments including agriculture, SMEs, Green Banking and CSR activities; expected to lead to more broad -based inclusive growth and therefore lessen poverty; required for pushing the country on course to the targeted vision of digital Bangladesh by 2021; the year of Golden Jubilee of their independence.[5]. To save our planet it is the time to take initiative for green banking. The banks should give priorities in providing loan to the sectors that encourage environmental practices. Green banking is not limited within branches but it also extends to facilitating green investment/ financing so that a huge contribution to resource-efficient and low carbon industries i.e. green industry and green economies in general can be made. Much more is expected from NGOs and civil society organizations in the form of awareness development, research activities and business monitoring[6]. For rapid change among consumers and businesses, a collective endeavor of government, media, NGOs will be required. Customers, environment, banks consist of green banking wheel which indicates how the whole banking system works as a chain[7].

Methodology

An exploratory (descriptive) study is conducted that is qualitative in nature. As primary sources, in-depth interviews and survey are conducted to the employees of Bank Asia, Brac Bank, IFIC Bank, Dhaka Bank, SIBL, Dutch Bangla Bank, Trust Bank and Uttara Bank and customers of that banks and a semi-structuredquestionnaire has been used to collect the data face to face or emails. All the male and female employees who do job in private commercial banks take part in the survey. As a sampling unit of the study,individual employee or number of banks,the extent is branches of the banks in Dhaka City specially Motijheel, Dhanmondi and Gulshan areas in2016 time periods. Non- probability sampling techniques especially judgmental sampling and convenience sampling are used to conduct the study. Sample sizes are fifty employees from eight private commercial banks in Bangladesh. The data are analyzed with the help of statistical tools[8] and the conceptual parts of the study are based on secondary data. As secondary sources, data has been collected from research papers, bangladesh bank and other banks publications, sustainability reports of bank, journal of green banking, Bangladesh banks websites and reviews.

Regulatory and Supervisory initiative undertaken by Government & Bangladesh bank regarding green banking in Bangladesh

a. Constituents of Green Banking:

Broadly, there are five pillars which constitute the Green Banking. The first pillar relates the 'green vision' of a bank. It is known as the basic principle. Practically, banks can not completely eliminate environmental harm of their activities and operations. What they can do is only to minimize the harm. The second and third pillars are concerned with bank's in-house activities and operation and financing. These are connected with a bank's green effort to minimize environmental risks and saving scarce resources. Supporting other stakeholders and cooperation is discussed in the fourth pillar. The growing environmental concern has brought about a new era of communication and cooperation between the business, banks and the NGOs worldwide[9]. And lastly, pillar five focuses on green reporting which ensures the transparency of green the bank's sustainable operation. These five pillars are integrated and crucial to the development of sustainable green banking. Five pillars of Green Banking in Bangladesh are listed in figure 1.

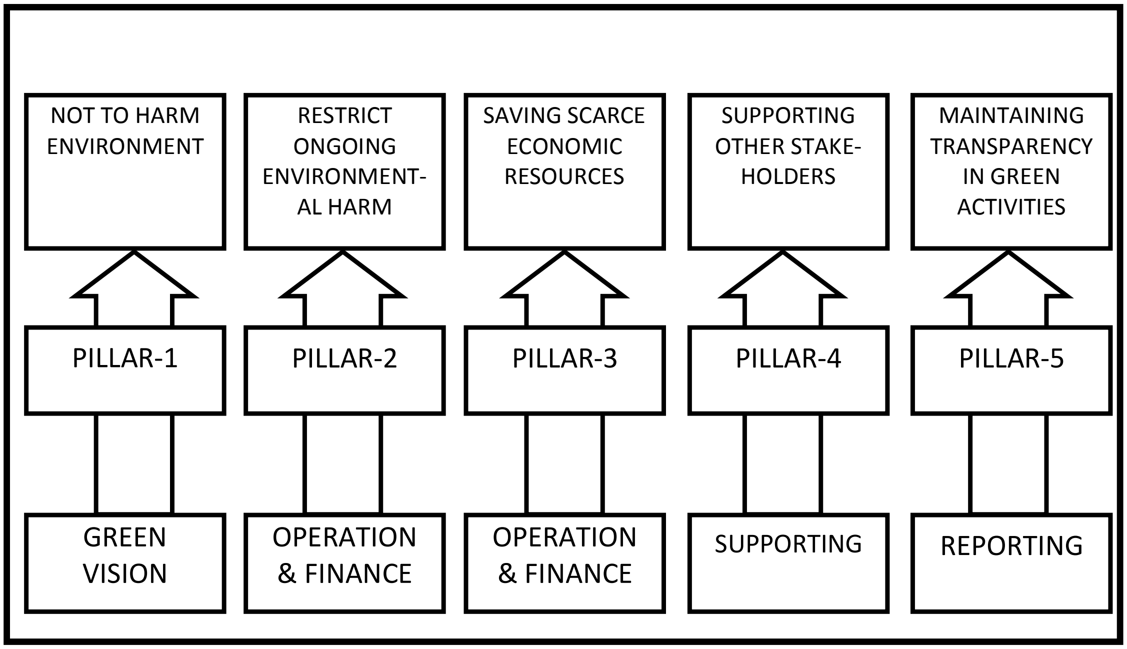


Figure 1: Five pillars of Green Banking in Bangladesh

Source: Habib, Shah Md. Ahsan 2010

b. Green banking initiatives by Bangladesh Bank: Green Banking is a new concept in Bangladesh. Green banking is not only important for environmental point of view but it also mitigates the credit risks, legal risks and reputation risks. Bangladesh Bank selected ten commercial banks in Bangladesh on the basis of CAMELS rating and RBCA measurement that are executing green banking practices. It is the first time of disclosing the green banking report by the central bank. Bangladesh Bank also emphasizes on the environmental issue for launching new branch as well as selecting these banks such as Bank Asia ltd, Dutch-Bangla Bank limited (DBBL), Eastern Bank ltd (EBL), Islami Bank Bangladesh ltd, Mutual trust bank ltd, Prime bank ltd, Pubali Bank ltd, Standard Chartered bank, Shahajalal Islami bank ltd and Trust Bank ltd for implementing the policy guidelines. The recent comprehensive circular of BB on 'Policy Guidelines for Green Banking' is a remarkable step on the way to develop GB practices in the banking sector of the country. The policy is segregated into three phases:

In phase-I of the Green Policy Guidelines, the banks are to develop green banking policies and show general commitment on environment through in-house performances by December 31, 2011. Banks are required to formulate environmental policy and create a GB cell or unit under this phase[10]. The banks should take measures to save electricity, water and paper consumption. Instead of relying on printed documents, online communication should be extensively used for office management and employees should be encouraged to purchase energy efficient cars. Banks are also to create a climate risk fund to finance the economic activities of the flood, cyclone and drought-prone areas at the regular interest rate without charging an additional risk premium under phase-I given in figure 2.

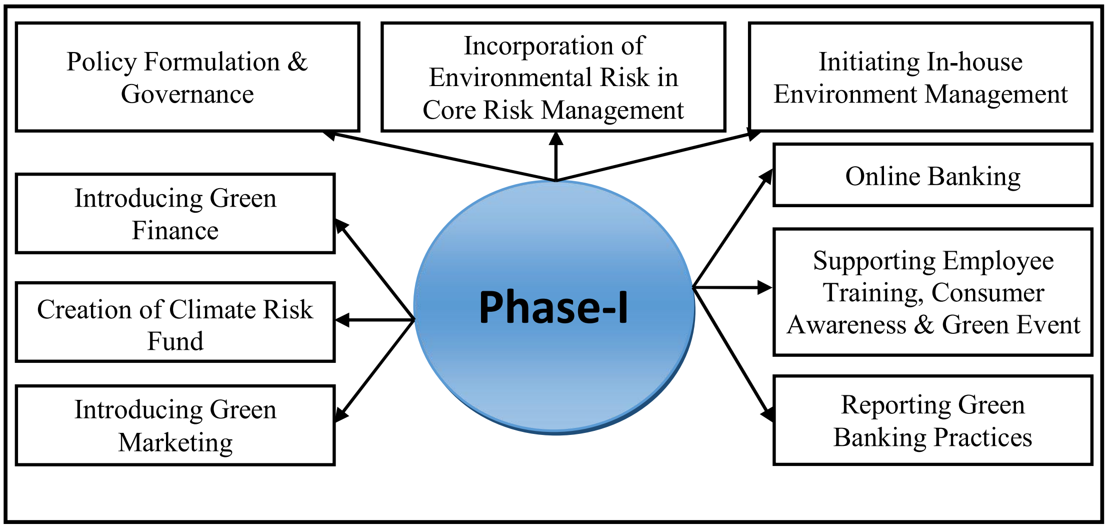


Figure 2: Graphical Representation of Green Activities under Phase-I

Source: Bangladesh Bank, BRPD Circular No.02, 2011

In phase-II of the Green Policy Guidelines, The time limit would not exceed December 31, 2012. Banks have to formulate specific policies for different environmentally sensitive sectors and will have to determine a set of achievable targets and strategies and disclose these in their annual reports and websites[10]. The green reporting will raise the awareness as well as disclose their activities toward the implementation of policy guidelines under phase-II given in figure 3.

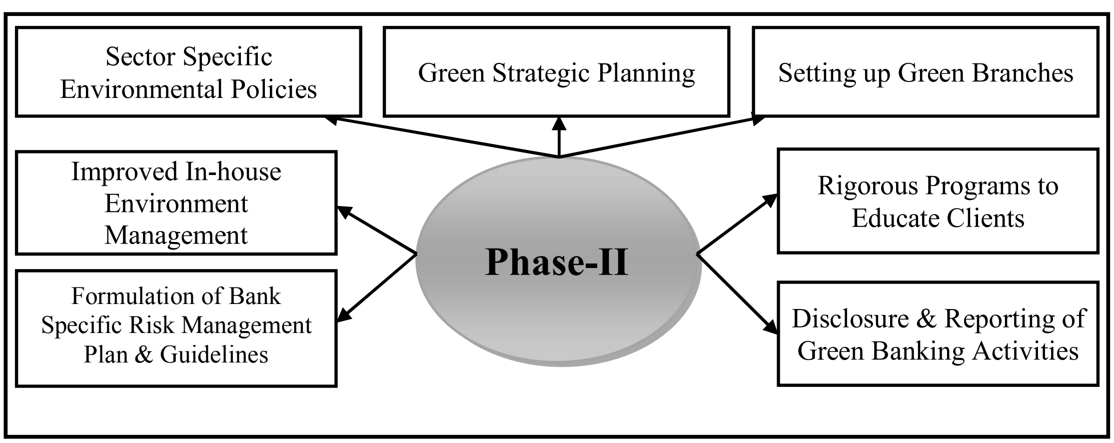


Figure 3: Graphical Representation of Green Activities under Phase-II

Source: Bangladesh Bank, BRPD Circular No.02, 2011

The Phase-III, which is to be attained by December 31, 2013, requires banks to publish independent Green Annual Report following internationally accepted format with the arrangement of external verification under phase III figure 4 below.

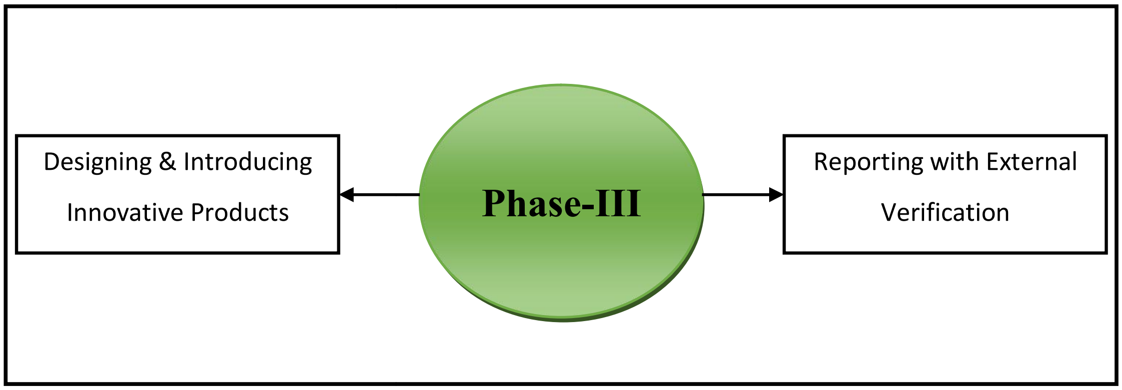


Figure 4: Graphical Representation of Green Activities under Phase-III

Source: Bangladesh Bank, BRPD Circular No.02, 2011

Green Banking Initiatives adopted by Private Commercial Banks

Private Commercial Banks showed an active role by formulating environmental policies, establishing Green Banking Cells by December 2013[11]. Besides, introducing internal environmental management, the banks initiate environment-friendly green financing and marketing projects to address the environmental challenges of the country.

a. Budget Allocation and Disbursement

Top listed ten banks of budget allocation are shown in figure 5:

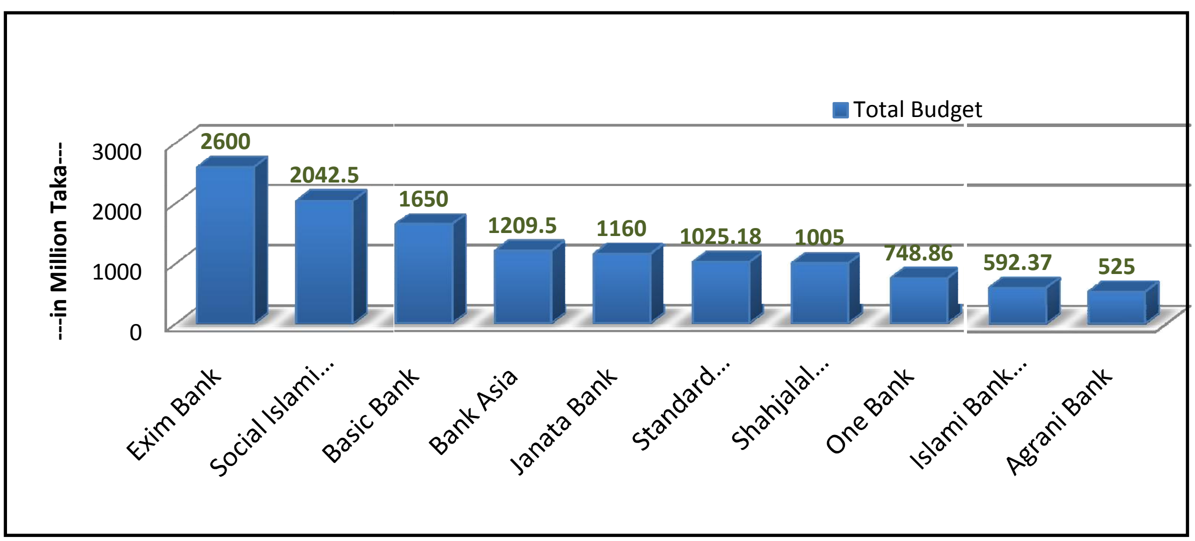


Figure 5: Top 10 banks in budget allocation in Fiscal Year 2016

Source: Bangladesh Bank-Green Banking Report, 2016

Private commercial banks approve a considerable amount of green banking in their annual budgets include green finance, climate risk fund, marketing & capacity building for green banking. 39 banks have allocated BDT 260,827.71 million in their annual budget where BDT 260153.98 million is for green finance, BDT 387.29 million is for the climate change risk fund, BDT 286.45 million is for marketing, training and capacity building for green banking[12].

b. Green Financing: Private commercial banks have played the main role contributing 80.4% in green financing project as compare to all banks in Bangladesh. The green financing includes offering financing services to solar, bio-gas, HHK, bio-fertilizer, ETPand projects having ETP, project/event financed for producing energy resource efficient products or any project/event financed by banks for possible safeguards and mitigating hazards due to the environmental condition or climate changes[12].Green financing projects of private commercial banks are in table 1.

Table 1: Green financing projects of private commercial banks (In Million Taka)

Green Financing Project	Private Commercial Banks Contribution
Renewable energy	1605.00
Energy efficiency	2394.30
Solid waste management	12.20
Liquid waste management	4326.50
Alternative energy	164.80
Fire burnt brick	5353.90
Non fire block brick	169.80
Recycling & recyclable product	4179.60
Green industry	4106.20
Safety and security of factory	1817.10
Others	467.90
Total	24597.32

Source: Bangladesh Bank Annual Report 2016.

c. Climate Risk Fund: A number of banks have created the climate risk fund which will cover funds for CSR activities. Banks allocate money of at least 10% of their CSR budgets. Total amount of utilization from climate risk fund by 39private commercial banks had 44.49 million take. Social Islami Bank allocated maximum amount of climate risk funds.

d. Introducing Green Marketing: Green marketing is the marketing of products that are presumed to be environmentally safe. Green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising. It refers to the process of selling products and services based on their environmental benefits. Such products and services may be environmentally friendly or produced or packaged in an environmentally friendly way. Bank's green marketing is expected to help awareness development among people.

Unfortunately, Bank's progress in green marketing or promotional activities to make the Green Banking products popular and familiar to the potential clients is comparatively less. Around 15.5 percent of the allocated funds for green marketing and training were utilized by banks in 2016. Some banks have organized training programs for their customers to develop the awareness. A few initiatives of private commercial banks are really inspiring and replicable for other banks to promote green banking. Some banks are using slogans as part of their green marketing and awareness development activities. Banks are required to keep in close touch with vendors as well as the borrowers/clients for marketing and providing green products, and look for the creation of a "green" and socially/environmentally responsible image.

e. Green Banking Units (GBU): All private commercial banks have formed a Green banking unit for contributing to green banking activities. An effective team comprising competent officials (senior/mid/junior) and including members from corporate/ SME/ Consumer/Retail/ Agricultural Financing /IT Division /General Banking or any other relevant departments are working in the GBU with great devotion.

f. Incorporation of Environmental Risk in Core Risk Management (CRM): Environmental risk management policy includes planning, training, implementation, measurement, reporting and reviewing.39 private commercial bank's number of projects applicable for Environmental Due Diligence (EDD) rating is 14,790; number of projects rated is 12,055; number of rated projects financed is 12,025 and amount disbursed in rated projects is 545,303 million taka where AB Bank 689, IFIC Bank 390, Bank Asia 270, EXIM 97 and Dhaka Bank 71 projects were rated in EnvRR[12].

g. Online Banking: Online banking is the practice of making bank transactions or paying the bill via the internet. 97.72% private bank's branches have adopted online banking facilities in 2016. Number of branches operating is 4301 where with online coverage is 4300 branches.

h. Internet and Mobile/SMS Banking: The new innovation and development in mobile services attract banking through mobile and SMS. Private Banks have accounts that are facilitated with internet & mobile banking. Total 25 banks were given permission for mobile financial services whereas 18 banks were in operation. Total customers were 36.2 million. The average growth of customer base in mobile banking is 15% per month.

i. ATM Services by Banks: ATM service is popular banking activities which promote green banking. All private commercial banks have ATM booths offering 24 hours 7 days services. Dutch-Bangla Bank Ltd. is taking the lead position with the highest number of ATM booths.

j. Branches Powered by Solar Energy: As per BB's inspiration to establish branches with solar power, banks are increasingly establishing branches supported by solar energy as a source of power. In Bangladesh bank annual report 2016, Number of branches is 4,301, number of branches powered with solar energy is 430 and number of ATM/SME unit's power by solar energy is245.

k. Disclosure and Reporting of Green Banking Activities: Green reporting is considered as another pillar of green banking, which refers to the disclosure of green activities to the stakeholders through various means. In line with the guidelines of Bangladesh bank, initiatives have been taken by banks for appropriate disclosure and reporting of Green Banking activities to Bangladesh Bank, annual report, bank web site, and media.

Analysis and Interpretation of the Data

Questionnaire analysis of the respondents is about the adoption of green banking initiatives by private commercial banks in Bangladesh.

a. In the study 76% male and 24% female bankers participate where 26% were clerks and 74% were officers. 58%respondents possess below 5 years experiences and banking knowledge and 14% respondents have above 10 years in banking sector.
b. Bank's Green Banking Policy - All employees (95%) ensure that their branches have green banking policy and they follow this policy guidelines.
c.55% employees assure that their bank has an investment on "Solar power" or "Eligible for renewal power".
d. Bank's investment rate waiver for environment saving project - Different employees gives different answers. This may cause them not practicing that much in green banking functions. One of the employee of investment department told "If they get any application that can fully satisfy "environment-saving project", they would consider investment rate waiver as per rules of the head branch.
e.98% employees said that they have tree plantation programs that are regulated by corporate branches also it takes as a corporate social responsibility.
f. Approximately 66% banks activities are done by e-statements in lieu of paper statements.
g.90% banker's belief is that green banking creates a strong bond with customers and increase customer loyalty in return brings reputation of the company.
h.58% respondent's belief that their in-house activities are sufficient but need improvement and implementation a lot.
i. Employees training on green banking - Maximum employees told that they do not directly provide any training but provide guidelines and applicant got certificates from "Department of Environment". They are trained in general for saving papers as well as trees, they are trying to preserve documents in CD, printing in both side of a single page and ink quality always economy mode and emphasize more on ATM rather than cheque book.
j. Employees knowledge about green banking - The banks arrange awareness programs which help to reduce unnecessary expenditures, build their office building as per the code of green banking, offers special discount to the borrower who provides land mortgage and buildings which are greener.

Private Banks are now becoming more concerned on environment friendly green investment. Before investing investment in any industry, banks investigate whether these remain any treatment plant or not and invest in renewable energy. Private commercial banks try to store papers and documents through CDs and hard disk of computers. As a part of that programs, instruments of Green Banking offered by cards division include E-Statement, SMS Banking, SMS Alert, Net Banking, E-Fund Transfer, and Digital Attendance and E-Mail corresponding, which help reducing printing paper, introduced remittance card to people, encouraging people to use ATM cards and ATM services and build solar power systems. Banks conduct different seminars for making people aware of using mobile banking service, internet services, online banking as well as green banking. They also give trees to account holder as tree plantation program, working closely with farmers for helping them and advising and working with an entrepreneur to ensure green banking. So responses are positive towards green banking and assured that their bank maintains all rules and regulations that Bangladesh Bank declared for Green Banking.

Analyzing green banking activities of private commercial banks, the study found that green banking motivates the banking system which creates awareness among the stakeholders and environment-friendly business practices i.e. solar equipment's, ETP, Bio-gas Plant, HHK etc. Now these banks are trying to do sustainable development by using solar powered, video /audio conferencing in lieu of physical travel, conversion of all vehicles into CNG and use of energy efficient electronic equipment's and various techniques above mentioned. Commercial banks realize that adopting green banking will improve its brand image to its market and especially among the environmentally conscious citizens. So banks are now adopting not only to generate money, avoiding legal pressure and satisfying various stakeholders but also to protect the brand value and recognition in society. Progress of initiatives taken by the Private Commercial Banks is in table 2.

Table 2: Progress of Initiatives taken by the Private Commercial Banks

Green Banking Progress (Success Rate in Percentages)	
Green Office Guide	95%
Preparation of Inventory	48%
Using Duplex Printer	100%
Using Eco-font (Ink saving)	74%
Saving Daylight	60%
Automatic Computer Shutdown System	90%
On-line banking	75%
ATM banking	95.54%
Branches with solar energy	80%
Accounts facilitated with Mobile/SMS banking	33.01%

Source: Private Commercial Banks annual report 2016 and banks website

To become more responsible financial institutions of the country, private commercial banks take above initiatives wisely. The banks success rates are quite high. Almost all the private commercial banks are now using duplex printer as a part of paperless banking and success rate in ATM banking is 95.54% and in green office guide is almost 95%. The banks progress rate in preparation of inventory 48% and the accounts facilitated with Mobile or SMS banking is in 33.01%. Now the private commercial banks are continually working on their green banking activities especially on the low percentage area and trying to improve their green banking operations.

Recommendations

Private Commercial banks are adopting green banking policy to recognize their responsibilities as a global corporate citizen. Now it is a right time for banks to adopt following strategies under green policy guidelines. For that reason, top management of banks should disburse more authority to the employees of branch level where ultimately the green banking operations conducted. Moreover, Bank should invest more in environmental projects like recycling and farming; for example, they can give loan at reduced rate of interest and provide an option for customers to invest in environmentally friendly banking products and faster customer services. If these banks want to make their products highly visible and attract clients, the banks should put more effort in various mode of green advertisement. Also, they can establish internal recycling system for recycling wastage and ensure the proper utilization of internal resources as well as shift the industries such as garments, textiles, and tannery to a proper location.

Banks can also initiate various social responsibility services such as tree plantation camps, maintenance of eco-parks, pollution check-up camps etc. Bank should replicate global as well as local best practices and share knowledge and technical know-how with peer groups and other stakeholders. Further, banks integrate with credit risk management in the overall credit risk methodology, apply quantitative approach to environmental risk rating and develop a database management system for technical assistances. For the following purpose intensive training and support to the employees from central offices and Bangladesh Banks, periodical audits and government's encouragement needed through a proper utilization and support of the electronic and print media and improving awareness program among bankers in semi-urban and rural areas for implementing green banking in all level.

Conclusion

Private commercial banks begin to understand the importance of green banking into their mainstream operations. Now banks are adopting different environment friendly policies and promote green banking products[13]. Bangladesh Bank has also issued different circulars time to time regarding modernization of Green Banking practice and its proper implementation. Bank employees must consider green banking as a necessity rather than desirability. They should take diversified activities especially introducing innovative products and also understand adopting green banking will improve its brand image to its market and especially among the environmentally conscious citizens. In addition to mitigating the environmental risks, green banking opens up new opportunities and avenues for product differentiation. Not only green banking will ensure the greening of the industries but it will also facilitate in improving the asset quality of the banks. The study concludes that private commercial banks implement all rules and regulation that Government and Bangladesh Bank declared for green banking. So, every bank has to participate in the new green product development process with greater involvement from stakeholders and contribute to green banking practices in today's extreme national and global banking competition.

References

1. Habib, Shah Md. Ahsan 2010, "*Green Banking Initiatives: Opportunities for Bangladesh",* BIBM, Dhaka, Bangladesh.

2.Ahmad, Fayez & Zayed N. Mohammad, 2013, "*Factors behind the Adoption of Green Banking by Bangladeshi Commercial Banks*", ASA University Review, Vol. 7 ,No. 2, July–December, 2013.

3. Hayder, M. M, 2012, "*Green Banking and its practice in Bangladesh",* Viewed on: June 2016,http://www.scribd.com/doc/96449881/Green-Banking-and-Its-Practices-in Bangladesh-ID-07303125.

4. Verma, M K, 2012, "Green Banking: A Unique Corporate Social Responsibility of India Banks", *International Journal of Research in Commerce & Management,* Vol. 3 , Issue 1 or www.ijrcm.org.in.

5. Atiur Rahman,2010, File: Dr. Atiur Rahman, Governor of Bangladesh Bank cropped, https://en.wikipedia.org/wiki/File:Dr._Atiur_Rahman,_Governor_of_Bangladesh_Bank_croppec.jpg.

6. Habib, Shah Md. Ahsan and Ullah, M S and Rahman, T,2010, '*An Impact Evaluation of Green Initiatives of Bangladesh Bank'*, BIBM, Dhaka, Bangladesh.

7. Ullah, Md. Maruf, 2013. "*Green Banking in Bangladesh- A Comparative Analysis*", World Review of Business Research, Vol. 3, No. 4, November 2013 Issue.

8. Malhotra, K. Naresh & Dash, S, 2012: "*Marketing Research: An Applied Orientation"*,6th Edition, Dorling Kindersley (India) Pvt. Ltd.

9. Gelder, Jan Williem Van, 2010, '*The Do's And Don'ts of Sustainable Banking'*; Bank Track Manuual 2010.

10. Bangladesh Bank, 2011, Policy Guidelines for Green Banking, *http://www.bangladesh bank.org/mediaroom/circulars/brpd/feb272011brpd02e.pdf* .

11. Bangladesh Bank, 2016, Annual Report, 2015- 2016,Dhaka, Bangladesh, Viewed on: September 15, 2017, https://www.bb.org.bd/pub/annual/anreport/ar1516/intro.pdf.

12. Bangladesh Bank, 2016, "*Green Banking Activities of Banks & Financial Institutions and Green Refinance Activities of Bangladesh Bank*"; Quarterly review report of BB July - September 2016,Viewed on: September 15, 2017.

13.Masukujjaman, serena, 2013 ‘Green Banking in Bangladesh: A Commitment towards the Global Initiatives’,Journal of Business and Technology (Dhaka),Volume VIII, Issues 1 and 2, January-June, July-December, 2013.

14. Hossain, M.Z., Ahmed, M. and Nisha, N. 2015, ‘*Consumer attitudes and perception towards green banking in Bangladesh*’, Green Banking in Bangladesh and Beyond, Zaman Printing and Packaging, Dhaka, Bangladesh.

Green Marketing: An Emerging Field of Marketing for Sustainable Development.

Md. Siddique Alam Khan⋆

Abstract: Green marketing is an emerging concept in the field of marketing which explains the integration of environment friendly marketing practices in order to achieve long lasting sustainable growth. This is a qualitative research paper which provides theoretical information over green marketing based on secondary source such as research, articles, journals & internet websites. This study aims at introducing the concept of green marketing, green marketing mix strategies and sustainable development with an emphasis on environmental problems facing the world today. This study seeks some reasons that make the organizations interested to adopt green marketing. This paper also sufficient in explaining constraints that organization may face to implement green marketing. Finally it suggests measures to increase the practices of green marketing.

Key words: Green Marketing, Sustainable Development, Environmental Problems

Introduction

Environmental Movement dates back to 1830s with George Catlin first proposing the idea of national parks in the United States of America in which wildlife would be conserved.[1] However, modern environmentalism began in 1950s but became more active in 1960s with public pressure, which led to National Environmental policy act of 1969 in the United States. In 1970s, environmental issues became established as a permanent feature of national and international policy with first Earth day held in 1970 and first United Conference on the Human environment held in Stockholm in 1972. From that time there are many types of environmental groups ranging from local, national and international groups and Non-governmental organizations (NGOs) which campaign on many separate environmental issues, these are International Union for Conservation of Nature and Natural Resources (IUCN), The Green Belt Movement of Kenya (1977), The European Environment Bureau (EEB), African NGOs Environment Network (ANEN) and Environment Liaison Center (ELC) based in Nairobi.[1] In addition to environmental groups, today nearly all countries have environmental machinery of some kind. At regional level there are inter-governmental organizations like the organization for Economic Co-operation and Development (OECD) and the Association of South East Asia Nations (ASEAN). At international level there is the United Nations Environment Programme (UNEP). Indeed, environmental movement is so diverse and environmental organizations often differ in their concerns over particular environmental issues, in the values and attitudes advocated, in the goals and objectives to be achieved and in the types of strategies and tactics. Yet what is shared by all these organizations is a concern about socio-environmental relationships.[1]

Though the existence of active environmental movement has been there since mid 1900s and in 1970 for instance experts warned that the planet's natural systems were being dangerously destabilized by human industry.[2] Today, scientists and experts are still warning about excessive burning of fossil fuel that threatens the health of the planet.[3] The concerns of the scientists today are valid and genuine because the global environment and the living conditions for most of the planet's inhabitants have continued to deteriorate.

⋆Assistant Professor, Department of Business Administration, Dhaka International University
Correspondence to: sa.khan37@yahoo.com

Each year as many as 50,000 species become extinct; upto 17 million hectares of forest disappear; more than 8.2 billion tons of polluting carbon dioxide are dumped into atmosphere; some 6.5 million tons of refuse find their way into the world's seas, choking seabirds and poisoning fish; and the world Population is growing by about 100 million people annually (United Nations Chronicle June, 1992**).**
The implication of the above statistics on environmental deterioration is that no serious actions have been taken toward addressing environmental problems/challenges. The lack of action to address environmental problems could be attributed to the failure of integrating the link between environment and development during the Stockholm Conference and other later environmental conferences (United Nations Chronicles, June 1992). In fact the integration of the environment and development for international action was not done until 1987 when the World Commission on Environment and Development called for an integration and translation of our understanding of the environment and development into action (United Nations Chronicles, June 1992). The United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992 also focused on integrating environmental protection with economic development to bring about sustainable development. It was during this Earth summit that it was first highlighted that business and industry should play a crucial role in bringing about sustainable Development.[4]Marketing, just like other business functional areas has a role to play toward providing solutions, to environmental problems facing the world today and to bring about sustainable development.[5] Indeed the public concerns over environmental deterioration in recent years have made marketers recognize both the need and value of green marketing. The purpose of this paper therefore, is to review how marketing is addressing the environmental problems facing the world today in order to bring about sustainable development.

View of literature

In the 21st century, climate change and rapid depletion of natural resources and biodiversity are some of the challenges humanity must come to grips with. The subject of green marketing is vast, having important implications for business strategy and public policy. Clearly, green marketing is part and parcel of the overall corporate strategy.[6]Based on review of the literature there are several possible reasons for companies adopting green marketing. Green Makes Business Sense. Green marketing is viewed as a means to achieve the organization's objectives.[7]Several studies indicate that consumers and the general public were concerned about the environment. Few other studies indicate that concern for the environment is being reflected in changes in consumption-related perceptions and behaviour.[8]
Robins points out that a company must accept its responsibility for its operations and their impact on society and Natural Environment.[9]It is stated that environmental issues were considered solely the responsibility of the government.[10] Proactive marketing strategies and government support can help in building environmental sustainability. If a firm is introducing a highly differentiated product, it is maximizing the stockholders returns and effectively using environmental strategy.
In general, green marketing is concerned with all the activities of an organization that may have influence on the environment, both in short- and the long-term. Such activities not only include the development of physical characteristics of products that do not harm the natural environment, but also the processes, promotions, and related claims.[11]
In 1970, the first large-scale energy crisis occurred. Since then, there will be many scholars began to focus on how to make the green market by renewable energy or green production.[12]

There are several terms with a slightly different meaning; it includes environmental marketing, green marketing, ecological marketing, sustainability marketing, sustainable marketing, and social marketing. However, several concepts of green marketing are used to mean the same thing. [13]Meanwhile, marketing strategists often focused on environmental considerations to be leveraged for competitive advantage .[14]

Environmental technologies, economic policies, and social initiatives are all essential elements to maintain economic sustainability, but their influence based on achieving changes, which is in actual consumption patterns and behavior .[15]Green marketing describes marketing activities that attempt to reduce the negative social and environmental impacts of existing products, design, packaging, labeling, use, and production systems, and which promote less damaging products and services.[16]

Up to 2010, green marketing has included a wide range of activities related to: product design, the manufacturing process, service delivery processes, packaging, construction and renovation of buildings, recycling, and other areas such as marketing communications.[17]Chavan had mentioned that there have been more and more companies which have introduced green products or/and green services around the world. [18]Green customer is one kind of the customer who had the purchasing power to pay more of a green product or service, and they pleasure to buy a green product to change and decrease the environment pollution. [19]

Price is not the problems when the customer accepts the green product and green program could be the incentive of employees, but some companies they are reluctant to publicize their green efforts, because sometimes it will be regard as green washing. [20]Customers are more demand to purchase a green product and green services to decrease environment pollution.[21]

Poor credibility, consumer cynicism, and consumer confusion these three major problems which are associated with green marketing, that can be overcome when developing the marketing strategy.[22]Meanwhile, a lot of studies show that consumers desire to purchase products and services which are less environmentally harmful and even wish to pay more that companies would become more environmentally friendly.[21]

Methodology

This study is qualitative research. The qualitative research is mainly based on secondary data. This paper has solicited the information from secondary data. It consists of reference books, research journals, newspapers, and web-sites. Data was collected in relation to fulfill the designed objectives of this paper.

Objectives of the study:

The objectives of the study are given below:

(i) To study the background of sustainable development.

(ii)To study the green marketing mix strategy as a business strategy.

(iii)To identify the reasons of adopting green marketing.

(iv)To make some suggestions for green marketing.

Evolution of green marketing
The term Green marketing came into prominence in the late 1980s and early 1990s. Green marketing was given dominance after the proceedings of the first workshop on Ecological marketing held in Austin, Texas (US), in 1975. The workshop released the first book on green marketing entitled "Ecological Marketing". Several books on green marketing began to be published thereafter.
In 1987, The World Commission on Environment and Development defined sustainable development as meeting “Tthe needs of the present without compromising the ability of future generations to meet their own need”, this became known as the Brundtland Report and was another step towards widespread thinking on sustainability in everyday.

The milestones for wave of green marketing came in the form of published books, both of which were called Green Marketing. They were by Ken Peattie (1992) in the United Kingdom[23] and by Ottman (1993) in the United States of America.[24] The similar terms used in connection with green marketing are ecological marketing[25] , environmental marketing [26], green marketing [27], sustainable marketing[28] and greener marketing[29].

In the years after 2000 a second wave of Green marketing emerged. The green marketing has evolved over a period of time. the evolution of green marketing has three phases.[30]
First phase "Ecological" green marketing in which, all marketing activities were concerned to help environment problems and provide remedies for environmental problems.
Second phase "Environmental" green marketing and the focus shifted on clean technology that involved designing of innovative new products, which take care of pollution and waste issues.
Third phase was "Sustainable" green marketing. It came into prominence in the late 1990s and early 2000.

Definition of green marketing
Green marketing is the marketing of products that are presumed to be environmentally safe. Thus green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising.
According to the American Marketing Association, "Green marketing is the marketing of products that are presumed to be environmentally safe, involves developing and promoting products and services that satisfy customers want and need for Quality, Performance, Affordable Pricing and Convenience without having a detrimental input on the environment"

Green marketing is defined as “greener marketing is a holistic and responsible strategic management process that identified, anticipates, satisfies and fulfill stakeholder needs, for reasonable reward, that does not adversely affect human or natural environmental well being.”[31]

Sustainable Development
Sustainable development is a fashionable word in environmental conservation circles. It received its most popular exposition in the highly influential Brundtland report, in 1987.[32]
Sustainable development is a concept, it underscores that rate of consumption or use of natural resources should approximate the rate at which these resources can be substituted or replaced. It

means concerns for protecting environment and avoiding depletion of non- renewable resources. It requires shifting from reliance on one resource to another. it requires equity (i.e. equal access to resources).

World Commission on Environment and Development 1987, it defined as "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs .[33]

Components of Sustainable Development

The components of sustainable development are two-folds namely; The natural constant capital stock and man-made built in constant capital stock.[32] Natural capital stock is the stock of all environmental and natural resource assets, from oil in the ground to the quality of social and ground water; and from the stock of fish in the oceans to the capacity of the globe to recycle and absorb carbon. On the other hand man-made built in capital stock comprises the stock of man-made capital machines and infrastructure such as housing and roads together with the stock of knowledge and skills, or human capital.

Green Marketing and Sustainable Development

Majority of people believe that green marketing refers solely to the promotion or advertising of products with environmental characteristics. Terms like Phosphate Free, Recyclable, Refillable, and Ozone friendly and environmental friendly are some of the things consumers most often associate with green marketing. In general green marketing is a broader concept, one that can be applied to consumer goods and industrial goods and services**.**[34]

Green marketing refers "to products and packages that have one or more of the following characteristics; they are less toxic; are more durable; contain reusable materials and/or are made of recyclable materials".[35]

Sustainable development requires "sustainable marketing" that is marketing efforts that are not only competitively sustainable but are also ecologically sustainable.[5] Marketing's critical role in development will only be appreciated when, through sustainable marketing, it meets the needs of the present without compromising the ability of future generations to meet their own needs**.**

In response to the challenge of advancing simultaneously in economic development and environmental protection as the sustainable development demand companies and academicians have developed and/or adopted green marketing strategies and other corporate strategies. Among the key strategies are; green product strategies, green logistic strategies, green pricing strategies, green promotion strategies, changing consumers from consumption culture to ecologically concerned consumers, adoption of eco-marketing orientation as a business philosophy, Government intervention, lifecycle inventory analysis and teaming up for success. [36]

Green marketing focus on undertaking all marketing activities while protecting the environment. On the other hand sustainable development demands that the future generations inherit the natural environment in the same state or better as inherited by the previous generations. This calls for the protection and improvement of the environment.

The selected components of green marketing and sustainable development are shown in table 1.

Table I: Selected components of green marketing and sustainable development(Conceptual framework)

Environmental concerns today •Global warming • Industrial air pollution • Industrial waste pollution •Hazardous waste •Depletion of vital natural resources •Desert consuming agricultural lands •Disappearance of rain forest and animals •Landfills •Other concerns	Green marketing intervention strategies •Green product strategies •Green distribution strategies •Green pricing strategies •Green promotion strategies •Green consumption strategies
Improved organizational performance •Market share •Customer satisfaction •Competitive advantage •Profitability •Positive company image •Others	**Better physical environment** •Reduced air and water pollution •Conservation of natural resources •More energy reservoirs •Reduced raw materials usage •More forests •Conservation of animals •Other environmental improvements
Sustainable Development •Constant natural capital stock •Constant manmade capital stock	

Green marketing mix based strategies

Green marketing mix strategies include developing green-based products, green logistics, green promotion and green pricing which are discussed below.

(a)Green based product strategies

Green product is the product which could be biodegradable, durable, non-toxic and no pollution or less pollution in the manufacture process or transportation. It also including services and storage. The green product should be including the recyclable, resource saving, green labels, green packaging and green services.[37] It is claimed that green product can be developed in many ways.

•Repair: By repairing the product components to extend its life;

•Recondition: Extending the life of the product through innovation;
•Remanufacture: According to an old one, produce a new product;
•Reuse: The repeated use of the product;
•Recycle: The original product as a raw material for further processing;
•Reduce: Reducing the use of raw materials and disposable waste.

(b)Green based logistics strategies

Logistics is the integrated management of all the activities required to move products through the supply chain**.** For a typical product this supply chain extends from a raw material source through the production and distribution system to the point of consumption and the associated reverse logistics. The logistical activities comprise freight transport, storage, inventory management, materials handling and all the related information processing. The main objective of green logistics is to coordinate these activities in a way that meets customer requirements at minimum cost In the past this cost has been defined in purely monetary terms, but as concern for the environment rises, companies must take more account of the external costs of logistics associated mainly with climate change, air pollution, noise, vibration and accidents.[38]

There are a lot ways to minimize the costs of environment in the logistics process. Such as the laundry powders and juice, which are belong to the small packages and concentrated storage products. These could reduce the transportation costs. Meanwhile, the company could switch to the short distribution chain and less warehousing services to reduce the transportation and other unnecessary waste to make the minimal pollution of environment. For saving cost, reduce pollution, making differentiation and create competitive advantages, internet had plays an important role which can be an alternative distribution channel and alternative communication channel in green strategies.[39]Green logistics consists of 6R - recognition, recovery, review, renewal, removal and re-engineering.[40]

(c) Green based pricing strategies

Normally, customer will consider more about the price, either the manufacturer will pay more attention on how to decrease the cost of product to gain more profit, but the price need be flexible to fit the customer purchasing willingness.[37]

Pricing strategies plays an important role in the green marketing strategy. In general, green product price always higher than the price of traditional product, means that there is a premium. Therefore, pricing strategy in the green marketing strategy must be combined with the degree of consumer price sensitivity and concise environment to find a balance. Customer price sensitivity is so high, the price as an important factor of customers choose between a green product and an ordinary one. For this reason, most consumers only willing to pay the premium, if product possess added value, like improving its performance, function, design and visual appeal or taste.[41]However, Polonsky and Rosenberger considered that If the product life cycle and of all the related cost are taken into account, actually, consumer spending not much.[42] He put forward two aspects of cost, the original sporadic spending and reduce long- term costs. Green products often requires higher initial cost, but it will be the economy in the long run.

(d)Green based promotion strategies

Green promotion is an activity of promoting products as having characteristics that do not harm the natural environment.[5] Green promotion should meet one or more of the following criteria.[43]

i)Explicitly or implicitly addresses the relation between a product/service and the bio-physical environment.

ii)Promotes a green lifestyle with or without highlighting a product/service.

iii)Presents a corporate image of environmental responsibility.

Zintom and Frederick argue that green companies should not assume that consumers are knowledgeable about environmental issues or actions they engage in.[44]

To lessen the gap on environmental information through promotion, Ottman has suggested several green promotion strategies.[45] Thus the green companies should;

i)Educate consumers on the environmental problems that a green product solves.

ii)Empower consumers with solutions by demonstrating to consumers how environmentally sound products and services can help consumers protect health, preserve the environment for future generations.

iii)Provide performance reassurance of green-based products, as many consumers perceive them to be inferior to conventional products.

iv)Consider a suitable mix of media. For instance environmental consumers are more receptive to messages conveyed through direct marketing, community programs, public relations, and packaging and

v)Appeal to consumer self-interest by bringing out the benefits of green products to both actual consumers and potential consumers.

Reasons of adoption of green marketing

Most of the companies are venturing into green marketing because of the following reasons:

(A)Opportunities or competitive advantages

It appears that all types of consumers, both individual and industrial are becoming more concerned and aware about the natural environment. Nowadays, firms marketing goods with environmental characteristics have realized a competitive advantage over firms marketing non-environmentally responsible alternatives. There are numerous examples of firms who have strived to become more environmentally responsible, in an attempt to better satisfy their consumer needs.

(B) Social Responsibility

Many firms are beginning to realize that they are members of the wider community and therefore must behave in an environmentally responsible fashion. This translates into firms that they must achieve environmental objectives as well as profit related objectives. Firms in this situation can take two perspectives: 1) they can use the fact that they are environmentally responsible as a marketing tool; or 2) they can become responsible without promoting this fact.

An example of a firm that does not promote its environmental initiatives is Coca-Cola. They have invested large sums of money in various recycling activities, as well as having modified their packaging to minimize its environmental impact. Walt Disney World (WDW). WDW has an extensive waste management program and infrastructure in place, yet these facilities are not highlighted in their general tourist promotional activities.

(C) Governmental Pressure

Governmental regulations relating to environmental marketing are designed to protect consumers in several ways: 1) reduce production of harmful goods or by-products; 2) modify consumer and industry's use and/or consumption of harmful goods; or 3) ensure that all types of consumers have the ability to evaluate the environmental composition of goods.

One of the recent publicized environmental regulations undertaken by governments has been the establishment of guidelines designed to "control" green marketing claims. These regulations include the Australian Trade Practices Commission's (TPC) "Environmental Claims in Marketing - A Guideline, the US Federal Trade Commission's (FTC) "Guides for the Use of

Environmental Marketing Claims" and the regulations suggested by the National Association of Attorneys-General. All these regulations were designed to ensure appropriate information to consumers so that they could evaluate firm's environmental claims.

(D) Competitive Pressure

Another major force in the environmental marketing area has been a firm's desire to maintain its competitive position. In many cases, firms observe competitors promoting their environmental behaviors and attempt to emulate this behavior. It is only in some instances that this competitive pressure causes an entire industry to modify and thus reduce its detrimental environmental behavior. For example, it could be argued that Xerox's "Revive 100% Recycled paper" was introduced a few years ago in an attempt to address the introduction of recycled photocopier paper by other manufacturers.

(E) Cost / Profit Issues

Certain firms use green marketing to address cost/profit related issues. Disposing of environmentally harmful by-products, such as polychlorinated biphenyl (PCB) contaminated oil are becoming increasingly costly and in some cases difficult. Therefore, when attempting to minimize waste, firms are often forced to re-examine their production processes. In these cases, they often develop more effective production processes that not only reduce waste, but reduce the need for some raw materials.

Constraints to implement green marketing

Green marketing offers several benefits to individuals, organizations and to the natural environment . Specifically green marketing leads to personal rewards of healthier life, and more fulfilled lives, improved organizational performance, better physical environment and ultimately to sustainable development.[46] Despite of the above positive aspects of green marketing the discipline has several constraints:

•Green products require renewable and recyclable material, which is costly.
•Requires a technology, which requires huge investment in R & D.
•Water treatment technology, which is too costly.
•Majority of the people are not aware of green products and their uses.
•Majority of the consumers are not willing to pay a premium for green products.
•Lack of credibility or trust by consumers and end-users.
•Confusion regarding green or sustainable product claims.
•The environmental benefits are intangible, indirect or insignificant to consumers, for example, consumers cannot see the emissions being spared when they use energy saving appliance.
•The success of green marketing depends on several stakeholders who must work as a team. These include; general public, employees, retailers, government, environmental groups, and suppliers. Any group can derail the exercise.
•Initially the profits of the company will be very low because renewable and recyclable products and green technologies are more expensive but in the long run it will be profitable since consumers will want to spend extra amount for green products.

Suggestion for green marketing

Green marketing involves focusing on promoting the consumption of green products. Therefore, it becomes the responsibility of the companies to adopt creativity and insight, and be committed to the development of environment-friendly products. This will help the society in the long run. Companies which embark on green marketing should adopt the following principles in their path towards "greenness."

(i).Minimize the excessive use of pesticide and Chemical fertilizers in crops potentially pollute soil, water and atmosphere and also potential threat to health and humans and wild life.

(ii).Forests are the valuable assets of every country gifted by nature, it is essential for every government to protect this natural gift which is very potential factor to protect the natural climate of its region.
(iii).Use sustainable source of raw material because the prospect of rapidly depleting stock of natural resources and resulting reality of price increasing.
(iv).Reduce packaging as less packaging also means less energy required for manufacturing and transportation and less pollution from the production of packaging itself.
(v). Use innovative technologies to conserve the natural resources
e.g.less water consuming techniques for agriculture, washing etc.
(vi).Use recycled content in manufacturing as recycling cuts pollution and conserves natural resource, conserves energy.
(vii).Make products energy efficient as better balanced use of energy is equally essential.
(viii).Make products more durable as long product life will increasingly become a source of added value and an indicator for quality and convenience in many other industries as well.
(ix).Make products and packaging reusable or refilling as the throwaway convenience culture is making way for reuse and refilling as alternatives to land filling, incineration and even recycling.
(x).Make products safe for disposal as non bio-degradable ingredients cause algal balloons, robbing the water oxygen, blocking sunlight and ultimately killing fish and other marine life.
(xi).Make products and packaging compostable as waste for one organism becomes food for another and that can also be effectively use to enrich gardens and agriculture soils.
(xii).Create a blog to educate and persuade customers and to know your customers about your capabilities and progress.
(xiii).Build a website to provide more information about firm and products rather than on a piece of paper, to avoid wasting of paper.
(ix).Use Face book, Twitter and other online social media rather than wasting paper to send updates, tools to keep people informed about changes in your business.

Conclusion

This paper has suggested that marketing like other functional areas of a business contribute to environmental concerns facing the world today. Therefore, it has a role to play in looking for solutions to these environmental problems. This paper further suggests that green marketing strategies are addressing the challenges with positive outcomes for improved organizational performance, better physical environment which will lead to sustainable development.

References

1. United Nations Environment Programme (UNEP),1988, The Public and Environment, pg.3- 10.
2. World Watch, “Earth day 2000; A 30 year Report Card” Vol.13, No.2 March/April 2000pg.10-13.
3. Mintu, Lozada and Polonsky.1993, Environmental Issues in the Curricula of International Business, the green imperative, Haworth Press Inc., xi-xiv.
4. United Nations Environment Programme (UNEP), 1998,Sustainable Business, Economic Development and Environmentally sound Technologies, pg.5.
5. Polonsky M and Mintu A.1997 ,“The future of Environmental marketing: Food for Thought”

Environmental marketing strategies, practice, theory and research Haworth, pg. 389-391.

6. Menon, A. and Menon, A. 1997, “Enviropreneurial marketing strategy: the emergence of corporate environmentalism as market strategy”, Journal of Marketing, Vol. 61, pp. 51-67.

7. Keller G.M. 1987, Industry and the Environment: Towards a New Philosophy,? Vital Speeches, 54(50), 154-157.

8. Gamba R and Oskamp S. 1994, Factors Influencing Community Residents Participation in Commingled Curbside Recycling Programmes?, Environment and Behaviour, 26(5): 587-612.

9. Robins, F.2008, Why corporate social responsibility should be popularized but not imposed. Corporate Governance. 8(3), 330-341

10. Karna, J., Hansen. E., & Juslin, H. 2003,Social responsibility in environmental marketing planning. European Journal of Marketing, 37 (5/6), 848-871.

11. Polonsky, J. M., Alma, T. MA., & Mintu, W. 1995, Environmental Marketing: Strategies, Practices, Theory, and Research. Newyork: The Haworth Press, Inc. Book was issued from Malardalen University Library

12. Pracki, P. 2011, “A Proposal to Classify Road Lighting Energy Efficiency”, Lighting Research and Technology, Volume 43, Issue 6, pp.271-280.

13. Belz, F.M. and Peattie, K. 2009, “Sustainability Marketing: A Global Perspective”, Bell & Bain:Glasgow, Great Britain. John Wiley & Sons Ltd.

14 Ginsberg, J.M. and Bloom, P.N. 2004, “Choosing the Right Green Marketing Strategy”, MIT Sloan Management Review, Volume 46, Issue 1, pp. 79-84.

15. Peattie, K. 2010, “Green consumption: behavior and norms”, Annual Review of Environment andResources, Volume 35, Issue 1, 195-228.

16. Matthews, R. 2013, “China's Economic Growth and Low Carbon Leadership”, The Green Market Oracle.Online available at: <http://www.thegreenmarketoracle.com/2013/10/chinas-economic-growth-and- low-carbon.html> [Accessed date: 17 May, 2014].

17. Prakash, A. 2002), “Green marketing, public policy and managerial strategies”, Business Strategy and the Environment. Volume 11, Issue 5, pp. 285-297.

18. Chavan, M. 2005, “An appraisal of environment management systems: A competitive advantage for small businesses”, Management of Environmental Quality: An International Journal. Volume 16, Issue 5, pp. 444-463.

19. BSD global.2013, “Who are the green consumers?”Online available at: <http://www.iisd.org/business/markets/green_who.aspx> [Accessed date: 17 May, 2014].

20. Hopkins, M.S. and Catherine, R. 2009, "What the 'green' consumer wants", MIT sloan management review, Volume 50, Issue 4, pp. 87-89.

21. Mendleson, N. and Polonsky, M. J. (1995), "Using strategic alliances to develop credible green marketing", Journal of Consumer Marketing. Volume 12, Issue 2, pp. 4–18.

22. Winn, M. and Angell, L. 2000, "Toward a process model of corporate greening", Organization Studies.Volume 2, Issue 6, pp. 1119-1147.

23. Peattie, K. 1992, "Green Marketing. Series: The M & E Handbook Series", (typeset by) FDS Ltd.:Penarth, Great Britain. Pitman Publishing, Longman Group.

24. .Ottman, J.A. 1993, "Green Marketing: Challenges & Opportunities for the New Marketing Age",Chicago, NTC Publishing Group.

25. Karl E., Henion; Thomas C. Kinnear.January 1976, "Ecological Marketing". Ecological Marketing. American Marketing Association. pp. 168. ISBN 0877570760, ISBN 9780877570769.

26. Coddington, W. 1993, Environmental Marketing and Strategies for Reaching the Green Consumer. McGraw Hill, New York.

27. Peattie, K. 1995, "Environmental Marketing Management", Meeting the Green Challenge, Pantek Arts,Maidstone, Kent: Great Britain. Financial Time Pitman Publishing.

28. Fuller, D. A. 1999,. Sustainable Marketing: Managerial-Ecological Issues. Markets and Market Development. Sage Publications, California, USA. Academic Book was issued from Malardalen University Library.

29. Charter, M. and Polonsky, M.J. 1999, "Green Marketing: A Global Perspective on Green Marketing Practices". Sheffield: Greenleaf Publications.

30. Peattie, K. 2001, "Golden goose or wild goose? The hunt for the green consumer", Business Strategy and the Environment, Volume 10, Issue 4, pp.187–199.

31. Charter M. 1992, "Greener Marketing: a Responsible Approach to Business", Sheffield, Greenleaf.

32. Pearce, Markandya and Barbier.1994, Blue Print for a green economy, Earthscan Publication Limited, pg. 1-50.

33. Our common future, World Commission on Environment and Development, 1987.

34. Polonsky M. J.1994, "An introduction to Green marketing" Electronic Green Journal, vol.1, Issue 2.

35. Hartmann, P., Vanessa, A.I. and Forcada Sainz, F.J. 2005," Green branding effects on attitude: functional versus emotional positioning strategies". Marketing Intelligence & Planning, Volume 23,Issue 1, pp. 9-29.

36. Willums J. O.1998, the sustainable business challenge, A briefing for tomorrows business leaders, Greenleaf publishing, pg. 137-158, 191.

37. Dhar, P. and Das, S. (n.d.), “Green Marketing: Challenges and Opportunities for Innovation and Sustainable Development”. International journal of marketing, financial services & management research, Volume 1, Issue 5 Availableat:<http://www.indianresearchjournals.com/pdf/IJMFSMR/2012/May/6_IJM_MAY12.pdf > [Accessed date: 17 May, 2014].

38. Murphy, P.R., Poist, R.F. and Braunschweig C.D. 1995, "Role and relevance of Logistics to Corporate Environmentalism: An Empirical Assessment", International Journal of Physical Distribution and Logistics Management, Volume 25, Issue 2, pp. 5-19.

39. Solvalier, I. 2010, “Green Marketing Strategies: Case Study about ICA Group AB”.

40. Giuntini R. and Andel T. 1995, "Master the six R’s of reverse logistics", Transportation andDistribution, Volume 36, Issue 4, pp.97-98.

41. Queensland Government 2006, “Green Marketing: The competitive advantage of sustainability”,Queensland Government Environmental Protection Agency.

42. Polonsky, M.J. and Rosenberger, P.J. 2001, “Reevaluating Green Marketing: A Strategic Approach”,Business Horizons, Volume 44, Issue 5, pp. 21-30.

43. Banerjee, S.B., Iyer, E.S., and Kashyap, R.K. 2003, “Corporate Environmentalism: Antecedents and Influence of Industry Type”, Journal of Marketing. Volume. 67, Issue 2, pp. 106-122.

44. Zintom and Frederick R.2001, Marketing and advertising “A Deep Green Company”, The Journal of Corporate Citizenship, Issue1, Spring, pg.93-113.

45. Ottman, J.A. 2008, “The Five Simple Rules of Green Marketing”, Design Management Review,Volume 19, Issue 4, pp. 65–69.

46. Ottman, J. A. 1998,What Sustainability Means to Consumer Product Marketers. The Ottman Report on Environmental Marketing, 5(1).

Cost audit prospects & challenges: Some Observations in Bangladesh

Ishrat Jahan*

Abstract: In the 21st century cost audit plays a crucial role in ensuring the reliability of cost data for price fixation, formulation of policy, decision making and control as well as supports that the cost accounting plan is in accordance with the firm objectives. The study is designed to review the prospects and challenges of cost audit in Bangladesh and suggesting the ways and means to remove the challenges in order to make the cost audit sound and effective. In this study, both the primary and secondary data are used. The primary data relating to challenges involved in Cost audit practice and suggestions to remove the challenges are collected on the basis of sample survey by interviewing 20 auditors and 10 academicians. The secondary data are collected through an extensive literature survey on the subject. The study has identified some major challenges in Cost audit practice in our country. The prospect of Cost audit practice is bright in our country as reported by the respondents if challenges are minimized by working together with the responsible authority like Financial Reporting Council (FRC), ICMAB & ICAB are the watchdog body in order to monitor the function of auditors and ensure transparency and accountability in accounting.

Key words: Cost audit, Financial Reporting Council (FRC), Cost audit profession in Bangladesh

INTRODUCTION

Cost audit is broad in its focus and widely used nowadays. Due to the growth of diversified business and expansion of firm, cost audit has become an integral part of auditing. Cost audit enables the management to make more informed decision regarding the price fixation, formulation of policy, decision making and control. The cost audit is designed to ensure management the accuracy of cost accounts. Cost audit focuses on performance evaluation and stock holder at large. It also helps in improving performance and production efficiency by detecting deviation from standards and reducing inefficiency and wastages.

Cost Audit comprises the following like verification of the cost accounting records such as the accuracy of the cost accounts, cost reports, cost statements, cost data and costing technique as well as examination of these records to ensure that they adhere to the cost accounting principles, plans, procedures and objective.

---

* Lecturer, Dept. of Business Administration, Victoria University of Bangladesh, Dhaka, Bangladesh.
Correspondence to:jahan.ishrat.cou@gmail.com

Cost Audit measures the parameters indicating the effective efficiency in the utilization of financial, physical, human resources etc [1]. Cost audit mechanism under the Companies Act, which is a measure of efficiency and performance operation as well as corporate social responsibility can serve as an important tool for effective enterprise governance. Cost audit provides more relevant data as regards the cost of various items and quantity of materials consumed thus helps in proper computation of variance and hence the productivity. No standard pattern can laid down for the organization of the cost audit function. It will be influenced by the size and nature of business and existing systems and attitude of the management concerned [2].

Statement of the Problem

Cost audit is maintained and performed by following Companies Act 1994, Cost Audit (Report) Rules, 1997, Government Notification, CMA Ordinance, 1977 but these are not clearly stated. The cost audit information is not available in published financial statement and is not disclosed to unauthorized persons. We are afraid under the exiting legal provisions it is impossible to work in on objectives and independent manner. Under the legal provision the danger of compromise is always there as the cost auditor is unlikely to be able to work independently. The board of directors of the company shall appoint the cost auditor within 30 days of each financial year upon written instruction from the government. In this case the board shall also determine the appropriate audit fee. At the end of the audit, the cost auditor shall submit the cost audit report to the board of directors together with a copy to the government. Thus, we see that under the existing provisions cost auditor would be appointed by the management, together with determination of his fees, and he would be asked to report back to the management on the finding audit.

Though, cost audit has become a crucial function within organizations; insufficient attention has been directed to this area of study when compared to financial audit. And, authors have suggested the need for studies on cost audit for developing nations. The study by identified the need for effective cost audit function to support effective management of entity and, links the effectiveness to effective management and internal control of the entity.

Objective of the Study

The main objective of the study is to point out the major challenges of Cost audit in Bangladesh and also examining the ways and means to overcome such challenges, thereby highlighting the prospects of cost audit. To achieve the main objective, the study highlights the following specific objectives,

1. To find out the major challenges regarding the Cost audit
2. Examining the ways and means to overcome such challenges, thereby highlighting the prospects of cost audit

Significance of the Study

Cost audit helps to detect the areas of errors, fraud and misappropriation of accounting records that reduce the inefficiency of the performance of the company. It may help the management, shareholders, government, customers and cost accountants by the following ways:

- ✓ Cost audit detects errors, frauds and misappropriation and hence enhances efficiency. Companies become more cautious about keeping cost data, in case where cost audits were mandatory.
- ✓ Cost audits conducted by external auditors detect the standard of efficiency of management; hence it helps in the improvement of the standard of utilization of material labor and other resources.
- ✓ For the government: it helps in accurately determining costs of production. Thus costs audit help govt. to take prudent decisions whether a particular industry/sector needs tariff protection. It also helps the government to settle those cost-plus contracts entered into by the government without any complications. VAT authority of the government can determine proper value added tax liability and hence detect evasion if cost audit is done rigorously.
- ✓ Cost Accountants, who work as employees in the audited firms, can enjoy a share of all benefits derived by the company from a cost audit

Theoretical Framework

Cost accounting was first introduced in India in the defense undertakings in 1920 Accounting and audit of Cost Accounts can be traced back as early as 1925 when a large number of firms were given contracts by the Government of India on cost plus′ basis and the Government started verifying and investigating the cost structure of such firms. The Institute of Cost and Works Accounts of India (ICWAI) was in 1944 as a company under the India companies Act. The Pakistan Institute Of Individual Accountant (PIIA) was registered in 1952and was finally recognized by an act of parliament in 1966.A branch of PIIA was set up in Dhaka in 1961.After the independence of Bangladesh the then branch of PIIA turned into an Independent Institute Bangladesh Institute of Industrial accounts (BIIA)′ in the year 1972which was later renamed as. The Institute of Cost and Management Accountants of Bangladesh (ICMAB), was in 1977 under the act of parliament of the govt.

Definition of Cost Audit

Cost audit has been defined by the as "the verification of cost accounts and a check on the adherence to the cost accounting plan" [3]. It comprises of verification of cost accounting records such as, the accuracy of the cost accounts, cost reports, cost statements, cost data, costing techniques, and examining these records to ensure that they adhere to the cost accounting principles, plans, procedures and objectives.

"The cost audit is the efficiency of minute details of expenditure while the work is in progress and not a post-mortem examination [4]. Financial Audit is a fait accompli. Cost Audit is mainly a preventive measure, a guide for management policy and decision, in addition to being a barometer of performance."

Cost Audit comprises following

- Verification of the cost accounting records such as the accuracy of the cost accounts, cost reports, cost statements, cost data and costing technique and

- Examination of these records to ensure that they adhere to the cost accounting principles, plans, procedures and objective.

Necessity of cost accounting and cost audit:

Cost Accounting and Cost Audit are absolutely necessary for efficient resource utilization as well as monitoring and improving the efficiency of organizations leading to overall productivity and profitability improvement in the best interest of consumers, investors, workers and industry, and of the general public.

Cost audit is based on the economic principle that resources should flow into the most remunerative channels. It ensures that every rupee invested in capital gives the optimum returns and the planning of investment between different functions and aspects is designed to give the optimum results. Cost Audit measures the parameters indicating the effective efficiency in the utilization of financial, physical, human resources etc. 'Cost Audit' is not a routine exercise on verification or attestation of Cost Records and related documents. 'Cost Audit' brings out the weaknesses in the internal working of a Company and surfaces it out for the benefit of the Top Management and other Agencies for necessary action. In Nutshell 'Cost Audit' covers 'Efficiency, Performance and Propriety.

Review of Literature

Review of the important literatures help us to assess and understand the existing problem and prompts and strengthens to approaches to the problem. He conducted a study Social objective of cost audit´ on various aspects like nature, definition, purpose, aspects, structure, dimension, origin, and magnitudes of the cost audit in Bangladesh [5]. He further discussed about cost audit and its social objectives, elimination of the limitation of Conventional Balance Sheets, cost audit in public sectors, creation of cost consciousness, better management of working capital, verification and valuation of inventories, inter firm comparison etc that help us to conduct our study and prompts and strengthens to assess approaches to the problem [5]. They conducted a study focusing purpose, application and advantages of cost audit for the incumbent organizations and also for others interests groups [6]. "The Cost Audit: Cost factors and their reduction", Robert Williams outlined a model cost audit of a distribution system. He also demonstrates how such a cost audit can identify the major factors affecting costs, and makes some practical suggestions towards their reduction. "The Cost Audit: A tool for distribution management" Robert Williams has developed costing techniques for distribution in the food and grocery trade which provide a pattern for any company to conduct a thorough cost audit in order to make an appraisal of its distribution performance in warehousing and transport [7].A study to identify areas of weakness invisible loss and unaccounted inefficiencies which ultimately result in adverse effects on the financial health of the organization [8].

Legal Framework of Cost audit:

1) **Cost Audit of Listed Companies**

Section 220 of Companies Act, 1994 mentions, "…the Government may, by order, direct that an audit of cost accounts of the company shall be conducted in such manner as may be specified in the order by an auditor who shall be a Cost and Management Accountant within the meaning of the Cost and Management Accountants Ordinance, 1977". In pursuance to above provision, the Ministry of Commerce has directed for Cost Audit of a total of eighty eight (88) companies in Sugar, Fuel & Power, Jute, Textile, Pharmaceuticals and Fertilizer factories. Among them the Audit is done intermittently in most sugar and few of the jute, fuel & power sectors. Despite several reminders from the Ministry of Commerce the audit is not done in most of them.

2) Cost Audit for Public Issue

As per most recently issued BSEC (Public Issue) Rules, 2015, Rule 3(f) dated 28th December, 2015 all companies shall have to get the Cost Audit done by the Cost and Management Accountants, where applicable, before filing application for a public offer. This audit would be applicable for all the companies mentioned above. This has opened up new avenue of practice for CMAs in all the above companies.

3) Maintenance of Cost Accounting Records

As per amended Cost Audit (Report) Rules 1997 vide SRO No. 17-Law/2005 dated 17 January, 2005 the selected companies are required to maintain 'Cost Records'. As per Rules the cost records are to be maintained by the companies on regular basis for every financial year on monthly or quarterly or half-yearly or annual basis. Implementation of Cost Accounting Records is mandatory for the companies where cost audit has been made mandatory. Every company on which Cost Accounting record rules have been made compulsory shall have to keep cost records on regular basis. Such requirement has opened up consultancy opportunities in the prescribed.

Methodology and Research Design

Data Collection

At first we would like to consult with expert like our faculty members and CMA qualified person and try to recognize the current prospects of cost audit by interview. We also try to go through the various publications produced by the firms and institutions annually and semiannually. We shall also try to focus on the important rules and regulations imposed by cost audit (report) rules 1997, Companies Act 1994, Order of the Government for cost audit, CMA Ordinance, 1997.

Data Collection Methods

The study is the outcome of both the primary & secondary data. The primary data relates to challenges of cost audit and suggestions to remove the same in order to examine the prospects of Cost audit. The opinions on the prospect of Cost audit have been collected from the respondents on the basis of sample survey. The requisite primary data were collected from 20 randomly selected auditors and 10 academicians. The challenges of cost audit and the measures to overcome the same were gathered from the selected respondents. The respondents were asked to identify the challenges of cost audit as well as measures for the removal of the same.

Data Analysis and Interpretation

The collected data were analyzed and interpreted critically by the authors in order to make the study more effective, valuable & useful to the readers. On the basis of the analysis and the interpretation, the authors have developed the present report.

Limitation of the Study

The present study suffers from the following limitations:

- ✓ The sample size was relatively small
- ✓ The study was limited to only two aspects of cost audit in Bangladesh namely Challenges and prospects.
- ✓ The number of respondents for collecting primary data were also few.

Discussion of Findings

The following sub points present the analysis of the results as the outcome of the findings of the research

Challenges in Practice of Cost audit in Bangladesh

The respondents were requested to mention the main challenges faced by them in practicing cost audit in Bangladesh. The challenges are two types such as

1. **Major Challenges: Standard Setting/adoption stage and**
2. **Major Challenges: Implementation stage**

The respondents‟ responses as to the challenges faced in practice in cost audit in Bangladesh have been tabulated below,

Table 1: Challenges faced in practicing cost audit in Bangladesh

Serial no.	Major Challenges: Standard Setting/adoption stage	% of respondents
1.	Lack of Capacity Building and Institutional Development	**100%**
2.	Application or Adoption of Cost Accounting Standard	**95%**
3.	Existing Law sometimes contrary to Cost accounting Standard	**88%**
4.	Speedy adoption of cost accounting standard suffers from lack of technical and financial resources	**90%**
	Major Challenges: Implementation Stage	
1.	Lack of awareness, understanding and application skill by prepares and auditors	**100%**
2.	Professional Skill Development	**90%**
3.	Lack of accountability of management decisions and transparency of information	**80%**
4.	Inconsistency of cost accounting records	**90%**
5.	Lack of resources, knowledge, technical skill and competency of regulatory agencies to monitor/compliance with standard	**80%**
6.	Management mindset- adverse to change	**60%**

Source: Field Survey

Prospects of Cost audit in Bangladesh

The respondents were requested to mention the main prospects cost audit in Bangladesh. The respondents‟ responses as to the prospects in cost audit in Bangladesh have been tabulated below

Serial no.	Prospects of Cost Audit	**% of respondents**
1.	Anti Dumping and Counter Veiling duties	**100%**
2.	Free Trade Agreement:	**65%**
3.	Transfer Pricing:	**88%**
4.	Predatory Pricing:	**96%**
5.	*Licensed VAT Adviser*	***100%***
6	Other Areas	**80%**

Source: Field Survey

Anti Dumping and Counter Veiling duties: The provisions relating to anti dumping laws are of remarkable current issue in the context of cost accounting. The determination of normal value, domestic price, quantum of injury etc. all requires cost information. In Anti-Dumping cases, the International Dispute Resolution Authority accepts the authenticated cost data from the Cost Audit records, maintained by the domestic as well as international companies.

Free Trade Agreement: The domestic product cost is the base for incorporating any item during the process of negotiations under Free Trade Agreement (FTA) signed by Bangladesh with other countries. The costs of items covered under that cases cost audit can be used by government for taking informed decision.

Transfer Pricing: The Multinational companies have their prominent presence in Bangladesh and they frequently transfer resources among associate concerns / inter units operating in different parts of the world. This transaction has a great impact on their profitability as well as tax liability. The Cost Auditors can play significant role in providing a system of check on such transfer pricing mechanisms.

Predatory Pricing: For increasing market share, the dominant players may opt for a price lesser than the cost, to reduce the competitors. In long run, this is not beneficial for the common consumers. The Cost auditor can aid the Competition Commission in cases filed against predatory pricing.

Licensed VAT Adviser: As per provision of rule 4(1)(c) of the Value Added Tax Adviser (License) Rules 1998 [VAT SRO No. 117-Ain/98/178-Musak, dated 11 June 1998], a Cost Accountant is eligible for getting license for practicing as a licensed VAT Adviser subject to fulfillment of some other conditions (written and oral examinations). Same conditions are applicable for chartered accountants who can also work as a Facilitator of the VAT ADR as per rule 5(1)(c) of the Value Added Tax (Alternative Dispute Resolution) Rules 2012 [VAT SRO No. 117- Ain/98/178-Musak, dated 11 June 2012]

Other Areas: Cost auditor can help firm in preparing rescue plans for financial unsound companies or sick industries,

- The safety or revival of financial unsound industry is of immense importance in the present and future scenario of our country as well as globe. The Cost Auditors can offer their expertise in preparing rescue plans for financial unsound companies or sick industries, which are working below capacity due to poor management capability or improper planning. These professionals can help such industry in overcoming their existing and new emerging problems, achieving efficiencies and improving production capacity that means helps to make financial sound.
- The Textile Sector, in particular, is presently in a deep crisis, with a large number of units either being sick or working at below capacity level. Irrespective of few textile units, which can be considered healthy, others are giving average production. The textile sector can utilize the services of cost auditors as Consultants, in diagnosing the reasons of sickness or idleness of sick textile units and putting them in operation with their consultation**.**
- Besides the above, the cost auditors are also competent to practice or do consultancy in the following areas like

- ✓ Audit of Cost Accounts
- ✓ Annual business plan development;
- ✓ Financial and cost accounting system, development, implementation and outsourcing;
- ✓ Performance monitoring and evaluation;
- ✓ HR recruitment and training;
- ✓ Supply chain optimization and management study;
- ✓ Productivity improvement;
- ✓ Business process re-engineering and SOP development;
- ✓ Project feasibility study and value chain
- ✓ Special Audit of sales tax records
- ✓ Audit of Sales Tax Refund Claims
- ✓ Certify Audited Accounts of Non-Profit Organizations (NPOs)
- ✓ Certify accounts of Borrowers
- ✓ Certify accounts of Leasing companies

The way forward

The prospect of cost audit in Bangladesh is very bright if the challenges involved in cost audit practice as pointed out earlier by the respondents can be removed. But, it is true that 100% removal of the challenges is not always possible. However, the respondents were requested to mention the major suggestions as to the removal of the Challenges. The responses of the respondents were tabulated above

Table 2: Suggestions for removal the challenges cost audit in Bangladesh

Serial no.	Major Suggestions	% of respondents
1.	Capacity Building and Institutional Development	**95%**
2.	Composition of multi-disciplinary task force	**85%**
3.	Enabling environment for application of standard	**100%**
4.	Adoption of cost accounting standard suffers from lack of technical and financial resources	**90%**
5.	Strengthening of standard setters and regulatory bodies	**100%**
7.	Increase awareness, understanding and application skill by prepares and auditors	**70%**
8.	Professional Skill Development	**90%**
9.	Ensure accountability of management decisions and transparency of information	**70%**
10.	Increase consistency of cost accounting records	**100%**
11	Increase resources, knowledge, technical skill and competency of regulatory agencies to monitor/compliance with standard	**75%**
12	Learning from other Country	**85%**

Source: Field Survey

Opinions of the Respondents as Regards the Prospects of Cost audit in Bangladesh

In orders to have opinions of the selected respondents as to the prospects of cost audit in Bangladesh, an opinion survey on the respondents was conducted by the Likert 5 point scale as very bright, bright, neutral, gloomy & highly gloomy. The following table 4 shows the pictures in this regards:

Table 3: Opinions of the Respondents as Regards the Prospects of CA

Opinions of Respondents (30 respondents)					
Very Bright	Bright	Neutral	Gloomy	Highly gloomy	WAS
0	23(77%)	0	7(23%)	0	3.33

The above table shows that of the total respondents numbering 23(77%) mentioned that the prospect of Cost audit in Bangladesh is bright. On the other hand the remaining 7(23%) gave their opinion in negative form in the sense that the cost audit in Bangladesh is gloomy. However, the position of cost audit in Bangladesh shows the weighted average scores 3.33 out of 5.0 scaling.

Suggestion & Conclusion

This study has found a number of problems involved in Cost audit in Bangladesh. These challenges are related to the Lack of Capacity Building and Institutional Development, Application or Adoption of Cost Accounting Standard, existing Law sometimes contrary to Cost accounting Standard, Speedy adoption of cost accounting standard suffers from lack of technical and financial resources, Lack of awareness, understanding and application skill by prepares and auditors. These challenges may be overcome by Capacity Building and Institutional Development, Adoption of cost accounting standard and enhancing technical and financial resources, Increase resources, knowledge, technical skill and competency of regulatory agencies that means working together with Financial Reporting Council (FRC) to monitor/compliance with standard.

If the above mentioned suggestions are implemented, the future of Cost audit is very bright in Bangladesh. Therefore, it is concluded that the suggestions and recommendations as put forward in the study need to be implemented as early as possible. The implementation does not depend only on the ICMAB and ICAB authority, but the role of Financial reporting Council (FRC) is also very significant in this context.

References

1. The Financial Express, 3rd August, 2013.
2. Banerjee, K. 2009, Mandatory cost audit: Do we need it? International seminar on cost Audit-An Effective Tool of Corporate Governance, organized by the Institute of cost and Management Accountants of Bangladesh (ICMAB) in Dhaka, May10,2009.
3. The Chartered Institute of Management Accountants, London.
4. Institute of Cost Accountants of India, India.

5. Sddiqui, F. 2000, Cost Audit in Manufacturing Sector, Finance &Markets.
6. Traiquzzaman, A. T. M, Yusuf, M.A., Yasmin, S., 2009, Mandatory Cost Auditing in Bangladesh: Some policy options, The Cost &Management,January-February,2009,ISSN 1817-5090, PP-29
7. Rashid, M. A. 2009, An evaluation of status of keeping and naintaining cost accounting books as well as the status of implementation of cost audit in concerned industries in Bangladesh, The Cost & Management, Volume XXXVII, Number 6, November-December, 2009 ,ISSN 1817-5090, PP,23-25.
8. Saeed, K.A 2003 ,Advanced Auditing ,institute of Business management, Lahor, G.P.O. Box No.1164,p.460

Employee Satisfaction of Janata Bank Limited: Some Observations

Muhammad Shajib Rahman, ITP*

Abstract: This paper attempts to investigate the levels of employee satisfaction of Janata Bank Limited. The focus of this study is to determine the impact of various parameters of employee satisfaction level like working conditions, relationship with employees of bank and job security. It also evaluates the factors or determinants which have strong influence on employee satisfaction level of JBL. This study has been conducted and analyzed on the basis of primary data. Primary data were collected by questionnaire method from five branches of JBL. SPSS was used to analyze the data using Correlation analysis. Based on the primary data it is formed that the most of employees are satisfied with almost every facility which is provided by JBL. This study finds that there is a correlation between and among some factors like job efficiency and responsibility, working pressure and job migration, job motivation and future progression, job efficiency and responsibility, friendly atmosphere and flexibility, future progression and job security. Finally, the study try to suggests some of the policy measures for overcoming the lacking on the level of employees satisfaction in order to enhance the productivity of the Bank.

Key words: Employee Satisfaction, Data analysis, Janata Bank Limited.

Introduction

Banking in Bangladesh has to keep pace with the global change. Bank is a financial institution offering deposits subject to withdrawal on demand and giving loans to the retail or corporate sector. There are different types of banks like state owned bank, specialized bank, commercial bank, investment bank, foreign bank and Islamic bank etc. This study focuses on Janata Bank Limited. It is a state owned commercial bank which is catering the need of the mass business people. JBL was born with a new concept of purposeful banking sub-serving the growing and diversified financial needs of planned economic development of the country. It is the 2nd largest state owned commercial banks in Bangladesh. Immediately after the liberation of Bangladesh in 1971, the erstwhile United Bank Limited and Union Bank Limited were renamed as Janata Bank. The established of Janata Bank was established under the Bangladesh Bank order 1972. It was incorporated as a public Limited Company on 21 May, 2007 vide certificate of incorporation No-C66933 (4425)07 in the early era of privatization.

*Lecturer, Dept. of Business Administration, Dhaka International University, Dhaka, Bangladesh.
Correspondence to:shajibrahmancou@gmail.com

The main goal of conducting the study is to analyze the determinants of employee's satisfaction level of JBL. I choose the study so that it can significantly describe the factors affecting the employee satisfaction JBL. Job satisfaction as feeling and perception of a worker regarding his/her work and how he or she feels himself well in an organization [1]. Contemporary banking business considers the job of satisfying their employees most important for retaining their valuable skilled workforce [2].

Objectives of the Study

The broad objective of this study is to investigate the level of employee satisfaction toward Janata Bank Limited. Some specific objectives are as follows:

- To identify the factors or determinants those have strong influence in employee satisfaction.
- To know the reasons behind the employee dissatisfaction.
- To identify the relation among various factors influencing employee satisfaction
- To make some recommendations regarding the employee satisfaction of Janata Bank Limited.

Literature Review

Employee Satisfaction is simply how people feel about their jobs and different aspects of their jobs. It is the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs. Employee satisfaction as the pleasurable emotional state resulting from the appraisal of one's job or job experiences [3]. Employee Satisfaction is defined as the combination of affective reactions to the differential perceptions of what he/she wants to receive compared with what he/she actually receives [4]. In addition, emotional state of the employees may also affect their satisfaction. Employees are more productive when they are satisfied and salary is the most important thing to most employees [5].

If the employees are not motivated to serve the clients with the best products or services, the company can't grow or survive in this competitive world [5]. There is no direct relation between employee satisfaction and salary. "Their research suggested that younger employees have a greater tendency to quit their jobs than older employees and demonstrate a greater tendency to be willing to work overtime. Younger employees are tending to be less satisfied with their salary" [6].He found that the need satisfaction studies emphasized that if the job failed to gratify employee's needs of various categories, need-deprivation would tend to cause absenteeism [7].Found that the success of any organization greatly depends on its qualified, efficient and dedicated workforce. This is also important to know how much satisfied the employees are in the organization with its current facilities, rules and regulations and other job related factors [8]. To investigate what the employees are satisfied by and measuring the employee satisfaction in the workplace is critical to the success and increases the profitability of the organization for having competitive advantage [9]. Employees who can relate to the organization's product or services can more easily relate to the organizational culture and make the necessary adjustment to become an active member of that culture [10].

They mentioned that the job satisfaction is a multifaceted phenomenon that consists of factor such as supervision at work, work itself, compensation and benefits, pro- motion policies of organization, appraisal and coworkers' attitude [11]. People are much concern about pay and leadership behavior. They concluded that the job satisfaction is an experience which has various aspects [12]. The most significant aspects are those which are relevant to working conditions and the nature of work. Low job autonomy, low job security, low wages and lack of expectation for promotion negatively affect job satisfaction of employees [13].

The different studies found different aspects as determinants of employee satisfaction. Majority of the studies revealed that level of employee satisfaction highly depends on handsome salary, congenial promotional policy, supportive working environment etc. In addition to these, organizational culture, relation with colleagues and superior, participation in decision making etc. also have influence on the level of employee satisfaction. But this study investigates some new aspects such as future progression, healthy balance between work and family etc. which also have an impact on the level of employee satisfaction [14].

Employee Satisfaction

Employee Satisfaction is one of the most researched variables in the area of work place psychology and has been associated with numerous organizational factors ranging from leadership to job design [15]. This report seeks to outline the key definitions relating to employee satisfaction and the main theories associated with explaining employee satisfaction as well as the types of and issues surrounding the measurement of employee satisfaction. While it is also important to explore what factors precede and is impacted by employee satisfaction. Employee Satisfaction has been defined in many different ways. Some believe it is simply how content an individual is with his or her job, in other words, whether or not they like the job or individual aspects or facets of jobs such as- nature of work or supervision [16]. Employees should be satisfied with competitive salary packages and they should be satisfied with it when comparing their pay packets with those of the outsiders who are working in the same position [17.]

Variables of Employee Satisfaction

The variables can be classified in mainly two broad categories namely-

1) Organizational Variables
2) Personal Variables

1).Organizational Variables

The employees spend major part of their time in organization and there are number of organizational variables that determine employee satisfaction of the employees. The employee satisfaction in the organization can be increased by organizing and managing the following organizational variables or organizational factors-

a. **Policies of Compensation and Benefit**

Compensation can be described as the amount of reward that a worker expects from the job. Employees should be satisfied with competitive salary packages and they should be satisfied with it when comparing their pay packets with those of the outsiders who are working in the same position. Following points come under this category-

- ✓ Wage and Salary
- ✓ Reward and Penalties

b. Promotion and Career Development

Promotion can be reciprocated as a significant achievement in the life. It promises and delivers more pay, responsibility, authority, independence and status. So, the opportunity for promotion determines the degree of satisfaction to the employee. Following these points come under this category-

- ✓ Opportunity for Promotion
- ✓ Equal Opportunity to Grow despite being Male or Female
- ✓ Training Program
- ✓ Opportunity for Use Skills and Abilities

c. **Job Security**

Job Security is an employee's assurance or confidence that they will keep their current job. Employees with a high level of job security have a low probability of losing their job in the near future. Job Security is also affected by a worker's performance, success of the business and the current economic environment. Following these points come under this category-

- ✓ Facility of Transfer
- ✓ Accessible / Reasonable Target

d. **Working Environment & Condition**

Employees are highly motivated with good working conditions as they provide a feeling of safety, comfort and motivation. On contrary, poor working condition brings out a fear of bad health in employees. The more comfortable the working environment is more productive will be the employees. Following these points come under this category-

- ✓ Feeling Safe and Comfort in Working Environment
- ✓ Security Guards and Parking Facility
- ✓ Well Ventilated with Good Light Fans and Air- Conditioning
- ✓ Neat and Clean Office Place, Rest Area and Washrooms

e. **Relationship with Supervisor**

A good working relationship with your supervisor is essential, since, at every stage, you need his or her professional input, constructive criticism and general understanding. Following these points come under this category-

- ✓ Relationship with Immediate Supervisor
- ✓ Communication between Employees and Senior Management

f. **Leadership Styles**

Employee Satisfaction is greatly enhanced by democratic style of leadership because democratic leaders promote friendship, respect and warmth relationship among the employees. On contrary, employees working under authoritarian and dictatorial leaders express low level of employee satisfaction. Following these points come under this category-

- ✓ Prefer Democratic Style of Leadership

- ✓ Friendship, Respect and Warmth Relationship

2).Personal Variables

The personal determinants also help a lot in maintaining the motivation and personal factors of the employees to work effectively and efficiently. Employee Satisfaction can be related to psychological factors and so numbers of personal variables determine the employee satisfaction of the employees. Following these variables comes in this category-

a. Personality

The personality of an individual can be determined by observing his individual psychological condition. The factors that determine the satisfaction of individual and his psychological conditions is perception, attitude and learning. Following these points come under this category-

- ✓ Competencies and Personality of Employee are Suitable for Job.
- ✓ Perception, Attitudes and Learning of Employee

b. Expectation

The expectation level of employees affects their satisfaction level. If one receives more outcome than expected then he will be highly satisfied and vice-versa.

c. Age

Age can be described as noteworthy determinants of employee satisfaction. It is because younger age employees possessing higher energy levels are likely to be having more employee satisfaction than older age employees. Following these points come under this category-

- ✓ Young Employees Possessing High Energy Level so Feeling more Satisfied
- ✓ Old Employees Resist Accepting New Techniques.

Is equal to expectation then employee is satisfied. Nevertheless, if bank's motivational factor is higher than expectation then it is implied that employee is delighted with that factors of the bank.

Why is Employee Satisfaction Important?

d. Employee Satisfaction is an important indicator of how employees feel about their job and a predictor of work behaviour such as organizational, citizenship, Absenteeism, Turnover.

e. Employee Satisfaction can partially mediate the relationship of personality variables and deviant work behaviour.

f. Common research finding is that employee satisfaction is correlated with life style.

g. This correlation is reciprocal meaning the people who are satisfied with the life tends to be satisfied with their jobs and the people who are satisfied their jobs tends to satisfied with their life.

h. This is vital piece of information that is employee satisfaction and job performance is directly related to one another. Thus it can be said that, "A happy worker is a productive worker."

i. It gives clear evidence that dissatisfied employees skip work more often and more like to resign and satisfied worker likely to work longer with the organization.

Methodology of the Study

This study has been conducted and analysed on the basis of primary data. Primary data were collected by questionnaire method from five branches of JBL. The primary data has been analysed by using SPSS software only. Interview of only 100 employees has been conducted out of 130 employees in JBL by random sampling method.

Sources of Data

The data used to furnish this report have been collected from the primary sources and secondary sources. Among primary and secondary sources most of the data have been collected from the primary sources.

Primary Sources

Primary data sources are the questionnaires filled up by the employees of JBL

Techniques of Data Collection

For data collection "Interview Method" was used. Interviews were taken with the employees of JBL through questionnaire. Where are interviews and questionnaire elicits responses from the subjects, it is possible to gather data without asking questions of the respondents.

Questionnaire Design

All questions are related to the attitude of the employee of the organization. Numbers are assigned to the scale for measuring employee attitudes about the organization. In this questionnaire, there are 15 questions. It is in the format of Likret Scale.

Sample Size

The sample size is quiet small in terms of the population. However, It was possible to manage to interview 100 respondents, mainly the regular employees of JBL.

Name of the Branch	No. of Respondent	Target Population	Percentage of Respondent
Topkhana Road Corporate Branch	20	30	66.67
Ramna Corporate Branch	20	28	71.43
Farmgate Corporate Branch	20	25	80.00
Elephant Road Corporate Branch	20	24	83.33
Kawran Bazar Corporate Branch	20	23	86.96
Total	**100**	**130**	

(**Source:** Sample Survey, October, 2017)

Descriptive Statistics

To find out the most important factors that influence in determining the satisfaction level, data is used with mean and standard deviation result. In questionnaire, there are used likert five points of scale to measure the satisfaction level and based on the survey result of mean and standard deviation. Data is divided the factors in three categories-

Factors	Mean Result
Strong Influence Factors	Above 4
Moderate Influence Factors	Between 3 to 3.99
Less Influence Factors	Below 3

Correlation Model

In statistics, the correlation coefficient r measures the strength and direction of a linear relationship between two variables. The correlation coefficient 'r' range from -1 to +1.Where, if the result is-

Range	Criteria
1.0	Perfect correlation
0 to 1	The two variable tends to increase or decrease together
0.0	The two variables do not very together at all
-1 to 0	One variable increase as others decrease
-1.0	Perfect negative or inverse correlation
P	Significant level which should be 0.0 to 0.05

If the significant value is greater than 0.05 that means there is no statistically significant correlation between two variables and increase or decrease in variable do not significantly relate to increase or decrease in second variable. If the significant value is less than or equal to 0.05 that means there is a statistically significant correlation between variables and increase or decrease in one variable do significantly relate to increase or decrease in second variable. Data is used SPSS to analyse the different variable relation.

Characteristic Evaluation of Respondents

Based on the questionnaire survey this study is tried to breaks down the term 'Employee Satisfaction' into the following variables-

	Highly Agreed		Agreed		Neutral		Disagreed		Highly Disagreed	
	No.	%	No.	%	No.	%	No.	%	No.	%
Job Location	3	3	80	80	13	13	4	4	-	-
Salary Structure	12	12	18	18	63	63	7	7	-	-
Working Environment	19	19	23	23	50	50	5	5	3	3
Friendly Atmosphere	11	11	73	73	13	13	3	3	-	-
Job Motivation	13	13	77	77	8	8	2	2	-	-
Responsibility	5	5	85	85	4	4	6	6	-	-
Flexibility	20	20	8	8	70	70	2	2	-	-
Recognition & Rewards	13	13	11	11	68	68	6	6	2	2
Job Efficiency	12	12	14	14	64	64	6	6	4	4
Compensation & Responsibility	-	-	17	17	74	74	6	6	3	3
Balance Work & Family	17	17	43	43	31	31	4	4	5	5
Future Progression	18	18	76	76	3	3	3	3	-	-
Job Security	5	5	81	81	11	11	3	3	-	-
Working Pressure	9	9	11	11	14	14	62	62	4	4
Job Migration	4	4	11	11	12	12	73	73	-	-

(**Source:** Sample Survey, October, 2017)

Presentation of Descriptive Statistic Result

	N	Mean	Std. Deviation
Future Progression	100	4.30	.830

Job Motivation	100	4.22	.941
Salary Structure	100	4.08	.998
Job Security	100	4.02	.967
Responsibility	100	3.88	.518
Job Location	100	3.82	.539
Balance Work & Family	100	3.63	.981
Working Environment	100	3.50	.958
Flexibility	100	3.46	.834
Friendly Atmosphere	100	3.35	.783
Recognition & Rewards	100	3.27	.839
Job Efficiency	100	3.24	.889
Compensation & Responsibility	100	3.05	.592
Working Pressure	100	2.59	1.045
Job Migration	100	2.46	.845

(**Source:** Sample Survey, October 2017)

Classification of Descriptive Statistic toward Influencing Factor

Strong Influence Factor	Moderate Influence Factor	Less Influence Factor
1. Future Progression 2. Job Motivation 3. Salary Structure 4. Job Security	1. Responsibility 2. Job Location 3. Balance Work & Family 4. Working Environment 5. Flexibility 6. Friendly Atmosphere 7. Recognition & Reward 8. Job Efficiency 9. Compensation &Responsibility	1.Working Pressure 2.Job Migration

[**Note:** Strong influence factor above 4, moderate influence factor 3 to 3.99 and less influence factors below 3 based on mean of sample]

Interpretation of Descriptive Statistic

Based on the descriptive statistic result, factors are divided into three criteria based on mean of sample data-

Strong Influence Factors: Strong influences factors are future progression, job motivation, salary structure, job security are highly contributed to improve the satisfaction level of employee of the bank. The mean of these factors is above 4 that means employees are satisfied on those criteria.

Moderate Influence Factors: Moderate influence factors are responsibility, job location, balance work & family, working environment, flexibility, friendly atmosphere, recognition & reward, job efficiency, compensation & responsibility refers that these factors have little contribution in improving the satisfaction level of employee of the bank. The mean result of these factors is between 3 to 3.99 that means employee is neither satisfied nor dissatisfied. So, these factors have little contribution to determine the satisfaction level of employee.

Less Influence Factors: Less influence factors these are working pressure, job migration refers that employees dissatisfied toward those factors and reduce the satisfaction level toward Janata Bank. The mean result of these factors is below 3 that means employee attitude level is negative toward these factors.

Frequency Analysis

The frequency analysis is basically done in order to find out what percentage of the respondents answered to a specific question. In the frequency analysis part, all of the questions were analysed and interpreted accordingly. These are as follows-

Question: 1

I am satisfied with my job location.

Table -1: Satisfaction Level about Job Location

	Frequency	%	Valid %	Cumulative %
Disagree	4	4.0	4.0	4.0
Neutral	13	13	13.0	17.0
Agree	80	80.	80.0	97.0
Highly Agree	3	3.0	3.0	100.0
Total	100	100	100.0	

Interpretation: The total numbers of responses are 100. From the frequency analysis above it is observed that a greater percentage of the respondents were agreed to the statement that is 80%. Where 3% highly agreed, 13% were neutral and 4% opposed the statement. Typically, the segment of the respondents who disagreed (4%) does not to their job location.

Question: 2

I am satisfied with the existing salary structure of the bank.

Table -2: Satisfaction Level about Salary Structure

	Frequency	%	Valid %	Cumulative %
Disagree	7	7.0	7.0	7.0
Neutral	63	63.0	63.0	70.0
Agree	18	18.0	18.0	88.0
Highly Agree	12	12.0	12.0	100.0
Total	100	100.0	100.0	

Interpretation: The total numbers of responses are 100. From the frequency analysis above it is observed that a greater percentage of the respondents were neutral to the statement that is 63%. Where 18% were agreed and 12% were highly agreed and 7% were disagreed to the statement. Typically, the segment of the respondents who disagreed (7%) does satisfied their salary structure.

Question: 3

I am satisfied with the working environment of the bank.

Table -3: Satisfaction Level about Working Environment

	Frequency	%	Valid %	Cumulative%
Highly Disagree	3	3.0	3.0	3.0
Disagree	5	5.0	5.0	8.0
Neutral	50	50.0	50.0	58.0
Agree	23	23.0	23.0	81.0
Highly Agree	19	19.0	19.0	100.0

Total	100	100.0	100.0	

Interpretation: About 23% employees were agreed with the satisfaction to find the company as a suitable place to work because of the perfect office environment. 19% employees of JBL were highly agreed with this fact because they found the office place as standard office to work. They think that the entire branch has good office environment and employees to work with. 50% employees of this branch were neutral because they think that their work place is good but it could be better with broad floors, facilities, and decoration which will help them to reduce the monotonous work life and bring enjoyment to their jobs. Typically, the segment of the respondents who disagreed (3% + 5%= 8%) does not find their working environment to be interesting.

Question: 4

The colleagues are friendly with me.

Table -4: Satisfaction Level about Friendly Atmosphere

	Frequency	%	Valid %	cumulative %
Disagree	3	3.0	3.0	3.0
Neutral	13	13.0	13.0	16.0
Agree	73	73.0	73.0	89.0
Highly Agree	11	11.0	11.0	100.0
Total	100	100.0	100.0	

Interpretation: The total numbers of responses are 100. From the frequency analysis above it is observed that a greater percentage of the respondents were agreed to the statement that is 73%. Where 11% were highly agreed and 13% neutral and 3% opposed the statement. Typically, the segment of the respondents who disagreed 3% does not find their colleagues to be interesting.

Question: 5

My superiors motivate me to work better.

Table -5: Satisfaction Level about Job Motivation

	Frequency	%	Valid %	Cumulative %
Disagree	2	2.0	2.0	2.0
Neutral	8	8.0	8.0	10.0
Agree	77	77.0	77.0	87.0
Highly Agree	13	13.0	13.0	100.0
Total	100	100	100.	

Interpretation: The total numbers of responses are 100. About 77% employees of JBL were agreed for receiving the amount and frequency of informal praise and appreciation from their supervisor. Their work and performance were appreciated by the supervisors every time. But 13% were highly agreed, 8% were neutral about this fact and 2% employees were disagreed because they don't receive any praise from their supervisor for their performance due to the biasness and negligence for few staffs.

Question: 6

I feel comfortable in carrying out my responsibilities.

Table -6: Satisfaction Level about Responsibility

	Frequency	%	Valid %	Cumulative %
Disagree	6	6.0	6.0	6.0
Neutral	4	4.0	4.0	10.0
Agree	85	85.0	85.0	95.0
Highly Agree	5	5.0	5.0	100.0
Total	100	10	100.0	

Interpretation: The total numbers of responses are 100. From the frequency analysis above it is observed that a greater percentage of the respondents are agreed to the statement that is 85% where 5% were highly agreed and 4% neutral to the statements. Typically, the segment of the respondents who were disagreed (6%) does not find satisfaction about the responsibility.

Question: 7

I am fully able to use my skills in this position.

Table -7: Satisfaction Level about Flexibility

	Frequency	%	Valid %	Cumulative %
Disagree	2	2.0	2.0	2.0
Neutral	70	70.0	70.0	72.0
Agree	8	8.0	8.0	80.0
Highly Agree	20	20.0	20.0	100.0
Total	100	100.0	100.0	

Interpretation: The total numbers of responses are 100. From the frequency analysis above it is observed that a greater percentage of the respondents were neutral to the statement that is 70%. Where 8% were agreed, 20% were highly agreed and 2% disagreed to the statement. Typically, the segment of the respondents who disagreed (2%) does not find their job location to be interesting.

Question: 8

I am happy with the recognition and rewards for my outstanding works and contributions.

Table -8: Satisfaction Level about Recognition & Rewards

	Frequency	%	Valid %	Cumulative %
Highly Disagree	2	2.0	2.0	2.0
Disagree	6	6.0	6.0	8.0
Neutral	68	68.0	68.0	76.0
Agree	11	11.0	11.0	87.0
Highly Agree	13	13.0	13.0	100.0
Total	100	100.0	100.0	

Interpretation: The total numbers of responses are 100. Among 100 employees of JBL, only 11% were agreed for receiving appropriate recognition and rewards for their contributions whereas about 13%were highly agreed with this fact. But about 68% employees were disagreed, 2% were highly disagreed and think that they are receiving recognition for their contribution for lacking of proper management of the branch.

Remarks: In this graph, we found that most of employees are neutral with the recognition and rewards of JBL but few employees are disagreed in this case.

Question: 9

I am given adequate freedom to do my job efficiently.

Table -9: Satisfaction Level about Job Efficiency

	Frequency	%	Valid %	Cumulative %
Highly Disagree	4	4.0	4.0	4.0
Disagree	6	6.0	6.0	10.0
Neutral	64	64.0	64.0	74.0
Agree	14	14.0	14.0	88.0
Highly Agree	12	12.0	12.0	100.0
Total	100	100.0	100.0	

Interpretation: The total numbers of responses are 100.From the frequency analysis above it is observed that a greater percentage of the respondents were neutral to the statement that is 64%. Where 14% were agreed, 12% were highly agreed and 6% were disagreed and 4% were highly disagreed to the statement. Typically, the segment of the respondents who disagreed (4%+6%= 10%) does not find freedom in their workplace.

Question: 10

I am satisfied with the compensation I get & I think it matches with my responsibility.

Table -10: Satisfaction Level about Compensation & Responsibility

	Frequency	%	Valid %	Cumulative %
Highly Disagree	3	3.0	3.0	3.0
Disagree	6	6.0	6.0	9.0
Neutral	74	74.0	74.0	83.0
Agree	17	17.0	17.0	100.0
Total	100	100.0	100.0	

Interpretation: The total numbers of responses are 100. About 6% of employees were disagreed and 3% were highly disagreed about this fact. From their point of view, they were supposed to do more than necessary but they don't get as much as they do. Managers are less concerned about this fact from the beginning. But 17% of employees were agreed and 74% were neutral because they were given proper compensation as they do.

Question: 11

I am satisfied & able to maintain a healthy balance between work and family life.

Table -11: Satisfaction Level about Balance Work and Family

	Frequency	%	Valid %	Cumulative %
Highly Disagree	5	5.0	5.0	5.0
Disagree	4	4.0	4.0	9.0
Neutral	31	31.0	31.0	40.0
Agree	43	43.0	43.0	83.0
Highly Agree	17	17.0	17.0	100.0
Total	100	100.0	100.0	

Interpretation: The total numbers of responses are 100. Most of the employees which are about 43% were agreed with the ability to maintain a balance between family and work life because they think that they have less work flexibility which hampers to maintain a balance between family and work life. But 17% were highly agreed with this fact due to maintain proper balance at both sides without any tension. Typically, the segment of the respondents who disagreed (5%+4%= 9%) does not find a healthy balance between work and family life.

Question: 12

There is immense chance for future progression.

Table -12: Satisfaction Level about Future Progression

	Frequency	Percent	Valid %	Cumulative %
Disagree	3	3.0	3.0	3.0
Neutral	3	3.0	3.0	6.0
Agree	76	76.0	76.0	82.0
Highly Agree	18	18.0	18.0	100.0
Total	100	100.0	100.0	

Interpretation: The total numbersof responses are 100.From the frequency analysis above it is observed that a greater percentage of the respondents were agreed to the statement that is 76%. Where 18% were highly agreed, 3% were neutral and 3% disagreed to the statement. Typically, the segment of the respondents who disagreed (3%) does not find immense chance for future progression.

Question: 13

I am happy with overall job security.

Table -13: Satisfaction Level about Job Security

	Frequency	%	Valid %	Cumulative %
Disagree	3	3.0	3.0	3.0
Neutral	11	11.0	11.0	14.0
Agree	81	81.0	81.0	95.0
Highly Agree	5	5.0	5.0	100.0
Total	100	100.0	100.0	

Interpretation: About 81% employees were agreed about the overall job security according to their job rules whereas 3% were disagreed with the overall job security because of the new comers. They had a fear to lose their job at anytime from the order of the higher level officers but 5% were highly agreed because they have the satisfaction of not to lose their job in any condition and 11% were neutral to the statements.

Question: 14

The workload is too high.

Table -14: Satisfaction Level about Working Pressure

	Frequency	%	Valid %	Cumulative %
Highly Disagree	4	4.0	4.0	4.0
Disagree	62	62.	62.0	66.0
Neutral	14	14.	14.0	80.0
Agree	11	11	11.0	91.0
Highly Agree	9	9.0	9.0	100.0
Total	100	100.	100.	

Interpretation: The total numbers of responses are 100.From the frequency analysis above it is observed that a greater percentage of the respondents were disagreed to the statement that is 62% where 11% were agreed, 9% were highly agreed and 14% neutral. Typically, the segment of the respondents who disagreed (62%) does not prefer the working pressure.

Question: 15

I have a plan to switch this job.

Table -15: Satisfaction Level about Job Migration

	Frequency	%	Valid %	Cumulative %
Disagree	73	73.0	73.0	73.0
Neutral	12	12.0	12.0	85.0
Agree	11	11.0	11.0	96.0
Highly Agree	4	4.0	4.0	100.0
Total	100	100	100.0	

Interpretation: The total numbers of responses are 100.From the frequency analysis above it is observed that a greater percentage of the respondents were disagreed to the statement that is 73%. Where 11% were agreed, 4% were highly agreed and 12% were neutral to the statements. Typically, the segment of the respondents who disagreed (73%) does plan to switch their job

Interpretation of the Correlation Result

- ✓ Positive Strong Correlation: If the result is between 0.6 to 1 then it refers strong positive correlation. In this model, there is no strong positive correlation.
- ✓ Positive Weak Correlation**:** If the result is between 0.59 to 0 then it refers to positive weak correlation.

Where,

r = Pearson Correlation Coefficient

p = Significance Level

Job Location and Balance Work & Family

There is positive weak correlation between two variables, r =0.314, p =0.042, n =100. Overall, there is positive weak correlation between job location and balance work & family. Improve in job location was correlated with improve in balance work & family.

Decrease in job location was correlated with reducing in balance work & family. The significant level is below 0.05 that means there is statistically correlation between two variables.

Working Pressure and Job Migration

There is positive weak correlation between two variables, r =0.399, p =0.008, n =100. Overall, there is positive weak correlation between working pressure and job migration. Improve in working pressure was correlated with improve in job migration. Decrease in working pressure was correlated with reducing in job migration. The significant level is below 0.05 that means there is statistically correlation between two variables.

Job Motivation and Future Progression

There is positive weak correlation between two variables, r =0.234, p =0.003, n =100. Overall, there is positive weak correlation between job motivation and future progression. Improve in job motivation was correlated with improve in future progression. Decrease in job motivation was correlated with reducing in future progression. The significant level is below 0.05 that means there is statistically correlation between two variables.

Job Efficiency and Responsibility

There is positive weak correlation between two variables, r =0.213, p =0.005, n = 100. Overall, there is positive weak correlation between job efficiency and responsibility. Improve in job efficiency was correlated with improve in responsibility. Decrease in job efficiency was correlated with reducing in responsibility. The significant level is below 0.05 that means there is statistically correlation between two variables.

Friendly Atmosphere and Flexibility

There is positive weak correlation between two variables, r =0.315, p =0.015, n =100. Overall, there is positive weak correlation between friendly atmosphere and flexibility. Improve in friendly atmosphere was correlated with improve in flexibility. Decrease in friendly atmosphere was correlated with reducing in flexibility. The significant level is below 0.05 that means there is statistically correlation between two variables.

Future Progression and Job Security

There is positive weak correlation between two variables, r = 0.322, p =0.008, n =100. Overall, there is positive weak correlation between future progression and job security. Improve in future progression was correlated with improve in job security. Decrease in future progression was correlated with reducing in job security. The significant level is below 0.05 that means there is statistically correlation between two variables.

[Note: Above present result is only the positive relation of different variables which mean result is above 2]

Findings

While investigating the level of employee satisfaction of Janata Bank Limited, the finding is that on average they were satisfied with their jobs. After collecting and analyzing data, these major findings are completely my personal view to prepare this paper. Those are given below-

- ✓ Most of the respondents are neutral with their salary and working environment.

- ✓ Most of the satisfied respondents agree that they are not willing to lose the job at any condition.
- ✓ Most of the respondents are disagreed with the workload. The nature of work has contributed positively towards the employee satisfaction level.
- ✓ Most of the respondents are neutral about their recognition and rewards.
- ✓ Most of the respondents believe that there is a potential chance to future progression.
- ✓ Most of the respondents are happy with their work & family life.
- ✓ Some respondents feel that there is no chance to use their own skills because most of the times they need to follow organizations policies in that case additional skills no need to use.

Conclusion

In the competitive world, it is crucial for each organization to develop a strong presence in the market by maximizing profit margin by satisfying their levels of employees as much as possible. Privatization of bank is not a solution for making a bank profitable rather the levels employee satisfaction of officers is important. There is some evidence that the most of employees are agreed with almost every facility which is provided by Janata Bank Limited. But some employees are disagreed and neutral in case of some issues like job migration, working pressure, responsibility, job efficiently and recognition & rewards. And also found that there is a correlation between and among some factors like job efficiency and responsibility, working pressure and job migration, job motivation and future progression, job efficiency and responsibility, friendly atmosphere and flexibility, future progression and job security.

So, special care should be taken to increase and maintain the levels of employee satisfaction and thereby assist them to increase their efficiency and productivity. Unlike organizations in the developed countries, in Bangladesh the study of the levels employee satisfaction has not attracted the potential employers, notwithstanding, significant number of companies have realized the fact that the growth and timely assurance of the investment depends on how the employer has succeeded in ensuring the levels employee satisfaction of the employees. This is the crucial time for JBL to consolidate the success. They have achieved and go on with its mission. Otherwise, *'A Committed Partner in Progress'* will only be an illusion to them.

Recommendations

The responsible authority of the organization has the responsibility for creating and ensuring a high level of employee satisfaction. The key objectives of leadership should be to enhance the performance of human recourses, to increase the quality of output which ensures the overall productivity of an organization. On the basis of above analysis the major recommendations can be drawn which are as follows:

- ✓ There is a correlation between and among some factors like job efficiency and responsibility, working pressure and job migration, job motivation and future progression, job efficiency and responsibility, friendly atmosphere and flexibility, future progression and job security; so bank should improve these factors in future.

- ✓ A congenial and supportive atmosphere should be maintained in the working place so that officers can enjoy their job although most of the employees are neutral in that case.
- ✓ JBL should have a transparent standing policy for promotion of employees so that an officer not getting promotion can clearly understand the causes behind it and may devote him to be fit for promotion although most of the employees are agreed in this factor.
- ✓ JBL should consider that salary structure and benefits should be reasonable and comparable with that of other banks and/or other similar institutions.
- ✓ As most of the employees are neutral with compensation system of the bank, it should be improved for the better performance of the employees for the bank.
- ✓ JBL should concern about the facility and demand of junior level executive rather than selective officers by removing bias.
- ✓ JBL has to keep improving the strong influence factor in future which consists of future progression, job motivation, job security and salary structure.
- ✓ JBL should increase the less influence factors like working pressure, job migration.

In spite of various shortcomings, the bank authority should think positively and takes care of the above mentioned factors so that dissatisfied level can be reduced at least up to an acceptable level.

References

1. Ivancevich J, Olelans M, Matterson M. 1997, Organizational Behavior and Management, Sydney: Irwin.
2. Islam, M. M. and Hasan, M. 2005, “Employee Satisfaction on Private Sector Banks in Bangladesh: A Study on Dhaka City’s Banks”. Journal of Business Studies. Vol. 3; Number 1 & 2. Bangladesh Open University. ISSN: 1811 -1556.
3. Spector, P.E. 1997, Job Satisfaction: Application, Assessment, Causes, and Consequences. Thousand Oaks, CA: Sage.
4. Patel PC, Cardon M,S. 2010, Adopting HRM Practices and Their Effectiveness in Small Firms facing Product Market Competition, Human Resource Management, 49(2): 265-290
5. The Daily Star 2013, “Leaders can motivate employees.” 21th June, p.9
6. Garrido JM, Perez P, Anton C. 2005, “Determinants of Sales Manager Job Satisfaction: An Analysis of Spanish Industrial Firms, International Journal of Human Resource Management, pp. 1934-1954.
7. Vermon, H. M. and Bedford, T. 1931, “The Absenteeism of Miners in Relation to Short-time and Other Conditions.”Industrial Health Research Board, Report no. 62, H. M. S. O., London.
8. Lee E, Ho H. 1989, Quality of work life the case of Hong Kong, Working Paper Series, Hong Kong Baptist College: Business Research Center, Hong Kong.
9. Kelley, T. 2005, Employee Satisfaction results in improved profitability, retrieved April 4th, 2008

10. Coleman, J. and Kliener, B. H. 1999, “How to Orient Employees into New Position Successfully”. Management Research News. 22(10), 6.92.
11. Hackman J, Oldham G. 1980, Work Redesign”, Addison- Wesley,Reading, MA.
12. Davis K, Newstrom J. 1999, Comportamien to Humano en el Trabajo: Comportamiento Organizaciona (10th Edn). Mexico: McGraw-Hill.
13. Guest D.E. 2004, “Flexible employment contracts, the psychological contract and employee outcomes: an analysis and review of the evidence”. International Journal of Management Review, 5/6 (1): 1-19
14. Silla I, Gracia F, Peiró J.M. 2005, Job insecurity and health related outcomes among different types of temporary workers, Economics and Industrial Democracy, 26: 89–117.
15. Locke, E. A. 1976, “The Nature of Job Satisfaction”. Handbook of Industrial and Organizational Psychology. Achicogo, IL: McNally. pp.1297-1349
16. Herzberg, F. 1979, Motivation and innovation: Who are workers serving? California, Management Review, 22(2), p. 60-70.
17. Rahman, M. I., Saha, S. & Gurung, H. B. 2009, Where the job satisfaction of bank employees lies: an analysis of the satisfaction factors in Bangladesh. The Cost and Management, Journal of ICMAB, 34(3), 1-13

Equanimity of Risk Adjusted Return between General Index and Shariah Index in Bangladesh.

Sharmin Tasmina*

Abstract: The present explorative study examined the risk adjusted return of DSE general index and DSE shariah index for a period of 1st June 2014 to 1st August 2017 with an intention to analyze the risk-adjusted return of both indices and to test whether there is any difference between the same of both indices in Bangladesh. In this paper risk adjusted return of the two indices are calculated by taking the mean returns (two days average) and standard deviation for both indices. Further the symmetry or lack of symmetry and the tails of both indices are measured by using skewness and kurtosis. Pearson correlation is used to describe the relationship between those indices. T-test is employed to test whether there is any mean difference between the indices concerned. Risk adjusted returns are calculated by using various ratios such as: Sharpe Ratio, Treynor Ratio, Jensen Measure etc. During the sample period, it was found that DSE general index surpassed DSE shariah index in terms of risk adjusted returns and there was similarity among the performance patterns of those indices.

Key Words: Shariah Index, General Index, Risk, Equanimity.

Introduction

Islam prefers investment in equity. As equity transfers part of ownership, so it is important for the muslim investor to know whether the operations of the concerned company is within the boundaries of islam or not. That is they not only need to know the structure of the transaction but also the nature of the counter party. A shariah screening can identify among the listed companies the shariah compliant ones. Thus it will promote financial inclusion of the muslim population who refrain themselves due to their respect for religious boundaries. And besides, shariah compliant indices can be used to Socially Responsible Investment (SRI) products that are attractive to the rational non-muslims too. In January 20, 2014 the journey of DSE Shariah Index was started. The purpose of its introduction in capital market of Bangladesh is to serve as a shariah compliant broad market benchmark measuring the performance of Bangladesh equity market. From its inception DSE took steps to popularize the index. The index was designed and developed by S&P Dow Jones Indices methodology[1].

*Lecturer, Dhaka International University, Department of Business Administration, Dhaka, Bangladesh.

Correspondence to: s.tasmina88@gmail.com.

Among the listed stocks that meet size and liquidity criteria are fit for inclusion in the index. Included stocks are weighted by float-adjusted market capitalization.

Shariah based screens are made according to the guidelines of S&P shariah family of indices in association with Ratings Intelligence Partners to provide shariah screens and filter stocks. The members of Ratings Intelligence Partners are qualified islamic researchers and experts in islamic investment decisions. Screening procedure is divided into two parts. They are summarized below:

Business activities related to Advertising and Media, Pork, Alcohol, Gambling, Financials, (newspapers are allowed, sub-industries are analyzed individually), Pornography, Tobacco, Trading of gold and silver as cash on deferred basis are excluded from the Islamic index. During the selection process, each company's audited annual report is reviewed to ensure that the company is not involved in any non-Shariah compliant activities. Companies found to be involved in islamically forbidden business activities are screened out.

After removing companies with non-compliant business activities, the rest of the companies are examined for compliance in financial ratios, as certain ratios may violate compliance measurements. There are

1. 12 months average of Debt to Market Value of Equity Debt / Market Value of Equity less than 33%

2. 12 months average value of Accounts Receivables / Market value of Equity less than 49%

3. 12 months average value of (Cash + Interest Bearing Securities) / Market value of Equity less than 33%

4. In certain cases, revenues from noncompliant activities are permissible, if they comply with the following threshold that Non-Permissible Income other than Interest Income) / Revenue is less than 5%.[1]

Applying above screening procedure 70 companies is primarily selected. The policy here is that Investors need to pay a fixed fee to have information on the listed compliant companies. But they must not disclose the information to others.

Literature review

A paper compared the risk return relationship between Nifty Shariah index and Nifty Index during the period of 2007 to 2010. The paper employed risk adjusted measures such as Sharpe ratio, Treynor index and Jensen alpha. They found that Nifty Shariah underperformed during the sample period and further they also found that the nature of Nifty Shariah is less volatile in nature. Finally they concluded that both indices move in a similar manner in the stock exchange[2].

The result of introducing Shariah index by Bursa Malaysia in the performance and liquidity of included shares was examined in a paper. The researchers used event study method as well as investigated changes in volume of trade and bid-ask spread. The study found a positive impact on overall financial performance of included shares[3].

The study of another research likened the performance of risk return of Kuala Lampur Shariah Index (KLSI) With Kuala Lampur Composite Index (KLCI). The study covered a period from 1999 to 2002. As a measure of performance they used risk adjusted performance measurement and T-test. The study found that there is no significant difference between the performances of both indices[4].

Financial performance and relationship between KLSI and KLCE for a period of 1999 to 2005 was studied. The study used risk adjusted performance measurement, causality and Johansen co-integration test. They find that there is a trivial return difference and long run bidirectional relationship between both indices[5].

Difference between the monthly returns of Financial time stock Exchange (FTSE) Global Islamic index and Dow Jones Islamic Index with their common index was explored. The researcher took a sample period from January 1996 to December 2004. The researcher divided the sample period into bull market period and bear market period. The study employed Capital asset pricing model, Risk adjusted performance measurement, t-test, Wilcoxon signed, buy and hold return method and cumulative return method in order to examine long run and short run relationship between the above indices. Their findings are: in short run shariah indices over performed and in second bull market period. The study found a similarity in the performance among the islamic index and general indices[6].

Another study found the relationship between Jakarta Islamic Index and other selected market indices for year January 2006 to December 2008. The research used Unit root test, Co – integration and VAR model to test the long run relationship between the chosen indices in the research. Their findings are that there is no long run relationship between Jakarta Islamic Index and other selected Market index during the study period[7].

Thus the above literature review reveals the fact that shariah index is of huge interest to investors and there is a great scope of research in this field. Although no significant study has yet been conducted in the Perspective of Bangladesh but there is opportunity of research in this particular sector.

Methodology

The empirical study was mainly conducted taking the daily secondary time series data for a period of July 1st 2014 to June 30th 2017. In the study movement of prices for the study period are analyzed. Further various risk adjusted measures are applied on the sample data to reach at a conclusion. The samples taken are the daily closing price of DSE general index and DSE Shariah index. This closing price information was collected from the recent market information segment of DSE. The three months treasury bills rate is collected from Bangladesh bank website which is also used as a proxy for risk free return.

1. Firstly mean returns are calculated by taking two days average for both DSEX and DSES. Further to examine the significant differences between the mean returns "t-test" is employed. Later on the researcher has estimated the simple returns by using the following formula:

$R_t = (P_t - P_t – 1) / P_t – 1$

Here, R_t= Return at time t, P_t is the value of index at time t (today's index) and P_t is the index value at time t-1(index value of previous day).

2. Measurement of risk adjusted return performance:

Sharpe Ratio

The industry standard method for calculating risk adjusted return is Sharpe Ratio, developed by Sharpe (1966). Sharpe ratio shows the excess return over the risk free rate that has been earned per unit of volatility[7]. In general a higher Sharpe ratio indicates attractive risk-adjusted return. The Sharpe Index is as follows:

$SI\ it = [(AR_{it} - AR_{fr})] / \sigma_i$

Here,

AR_{it} = Daily average return for the Index over the period

AR_{fr}= daily average of the risk free rate

σ_i = Standard deviaton of Index return

Treynor Ratio (1965)

Treynor ratio is known as reward to volatility ratio which is a risk adjusted measurement of return based on systematic risk. Basic difference between Sharpe Ratio and Treynor Ratio is that the former uses standard deviation and the latter uses beta as a measurement of risk[9]. A higher value of Treynor ratio indicates excellent performance of indices and vice versa. The formula for calculation of Treynor ratio is:

$T_{it} = (AR_{it} – AR_{fr}) / \beta$

Where,

T_{it}= Treynor Index which is a relative measure calculated by assuming Beta=1.

AR_{it}= Mean return of the index

AR_{fr}= Average risk free rate

β = Beta coefficient which is calculated using market model: $R_{it} = \alpha it + \beta i\ R\ m,t + \varepsilon it$ Here R_{it} and Rm,t indicates return on DSES and DSEX respectively, and εit indicates residual.

Jensen Measure (1968)

This measure was first used to evaluate a portfolio manager; whether he can outperform the market. Although his results were negative, Jensen Measure became popular. Jensen alpha is also a risk adjusted measure of returns. If an investor finds that two securities are providing similar returns then he obviously will choose the security with minimum risk. Thus to evaluate a security

Alpha = $R(i) – \{R(f) + (Rm - Rf)\beta\}$

Here, R(i)=Expected Return on DSE Shariah index

R(f)=Risk free rate

R(m)=Expected return on DSE general index

β=Beta of the market

The measure was first used by Michael Jensen in 1968 and was originally designed to evaluate fund managers, i.e. to gauge if it was possible for them to consistently outperform the market. Jenson's results, however, suggested that this is rarely the case.

Jensen's Alpha is also known as "Jensen's Performance Index" and "Jensen's Measure".

Analysis and Findings

Graphical Analysis

Results obtained from the study are analyzed in two ways. At first a graphical analysis is done and later on mathematical analysis is shown to reach at a conclusion regarding the hypothesis.

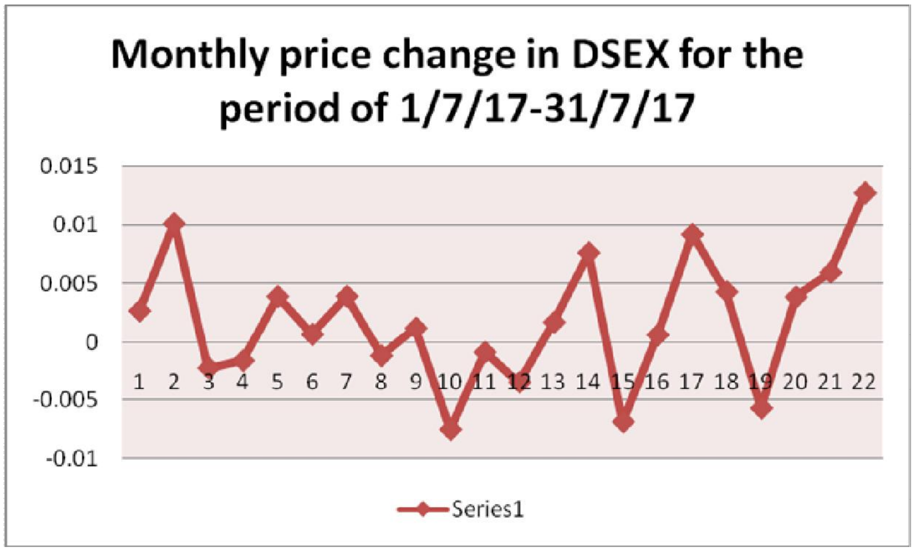


Figure 1: Monthly movement in price change for the period of 01/7/2017-31/7/2017 in DSEX

In figure 1 the change of price in DSE general index from previous day during the month of July 2017 was shown. It was observed that at the middle of the month prices declined and at the end of month prices were highest.

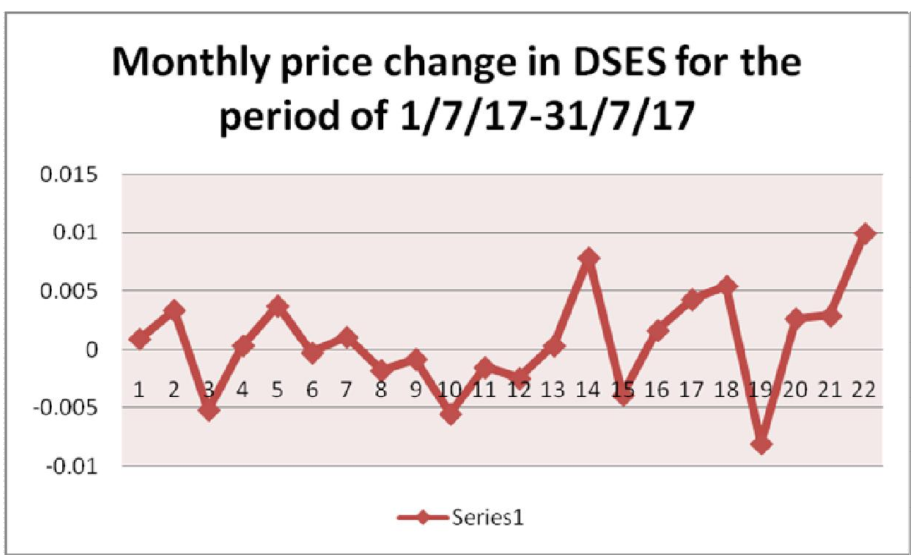


Figure 2: Monthly movement in price change for the period of 01/7/2017-31/7/2017 in DSES

From the above figure 2 it's been observed that price changes were negative in DSE Shariah index three times during the month of July. And the movement pattern of highest and lowest values of both indices are similar.

Descriptive Statistics:

As the first part of the analysis, the researcher discloses the descriptive statistics of DSE General Index and DSE Shariah index for the sample period of 1st January 2014 to 1st August 2017. At this point the study examines the hypothesis below:

H_o= Returns of the DSE general index and DSE Shariah Index hve a normal distribution over the sample period.

For testing the hypothesis a table of results obtained from related analysis is given below.

Table-1: Summary Statistics

Indices	Mean	SD	Skewness	Kurtusis	No of Observations
DSEX	4.6535	258.22154	1.114	2.207	742
DSES	1.1020	68.44129	0.134	-0.058	742

From the above Table-1 it is observed that the mean returns for both indices are positive but DSEX outperformed DSES, but at the same time the higher return was accompanied by a relatively higher Standard Deviation during the sample period. While on the other hand both indices are positively skewed which means that both indices may have haunt small negative outcomes but severe bad scenario is not common in these indices. The Kurtusis for DSE general index is less than 3 which means that the index is platykurtic and has extremely dispersed points along the X axis. On the other hand DSE Shariah index shows a negative value that indicates it has more data in its tails rather than in its peak and also implies that the index is less extreme.

Thus from the above analysis a conclusion can be drawn on the hypothesis that the null hypothesis is rejected, indicating that the returns of both indices are not normally distributed.

Difference in mean return and risk-adjusted returns:

From analysis and interpretation of data for the sample period it was found that mean return for DSE Shariah Index is lower than the returns of DSE General Index. In this part the study examines whether there is any difference between mean returns of both indices. Thus hypothesis here is as follows:

Ho= There is no significant difference between mean return and risk-adjusted return among DSEX and DSES.

Table-2: t-Value and Correlation Results Summary

Index	**Mean Difference**	**t-Value**	**Correlation**
DSEX	4806.35211	310.208	**0.966**
DSES	1143.33406	376.410	

In the above table 2 mean difference, t-value and correlations are shown. From the calculated statistics it is found that t-value for both indices are near to similar. And they have strong positive correlation. Thus it can be concluded from the above data that both indices have similarity in their returns. Also they have strong positive correlation.

Positive and negative return analysis:

In this part daily closing prices are analyzed. During the study period 772 samples on both indices were collected. From them in DSX 364 no of indices shows negative returns and the rest 408 showed a positive return. In DSES 378 no of days returns were negative and in 394 days returns were positive.

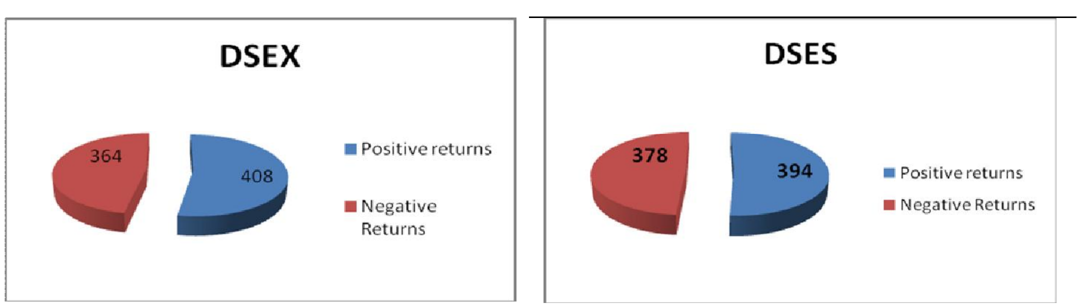


Figure-3: Positive and negative returns in DSEX and DSES

The above chart shows the same scenario and thus a similar pattern in positive negative return analysis between DSE general Index and DSE Shariah Index in Bangladesh is seen.

Risk adjusted return

In calculating risk-adjusted returns of DSE general index and DSE Shariah Index, DSE general index is considered as benchmark and 3 month Treasury bill rate in Bangladesh is taken as Risk-free rate. Beta is calculated using the slope between DSE Shariah index and General index. The results for risk adjusted return calculations are summarized in the table-3 below:

Table-3: Results obtained from Ratios

<table>
<tr><td>Index</td><td>Sharpe Ratio</td><td>Treynor ratio</td><td>Jensen Alpha</td><td>Beta</td><td>Expected Return (CAPM)</td></tr>
<tr><td>DSEX</td><td>-0.00047</td><td>-0.1936</td><td rowspan="2">-3.673</td><td rowspan="2">0.923025</td><td rowspan="2">4.82</td></tr>
<tr><td>DSES</td><td>-0.0457</td><td>-3.8567</td></tr>
</table>

From Table-3 it has been observed that Sharpe ratios of both indices are negative. This indicates that the excess returns in both indices are lower than the risk free rate offered in Bangladesh. In case of Treynor ratio and Jensen alpha similar results are seen. As Beta is positive, the negative results are thus the ultimate consequence of lower returns. According to CAPM the expected return is also lower than the risk free rate. Thus the investors in both indices get ales returns than risk free rate by taking high risk. In the aggregate it has been observed that DSE General Index has greater returns than DSE Shariah, on the contrary Shariah index is less risky than the general index. Finally both the indices reflect a similar pattern in risk adjusted return performance in Bangladesh for the sample period.

Conclusion

The present study inquires into the issue that whether there is any similarity between risk adjusted return performance of DSE general index and DSE Shariah index. Although information regarding the shariah compliant companies was not publicly disclosed, yet a comprehensive study has been conducted from available market information. In the study movement of prices for the study period are analyzed. Further various risk adjusted measures are applied on the sample data to reach at a conclusion. During the study period it has been found that returns of General index outperformed its counterpart. As inclusion of Shariah index in Stock market of Bangladesh is a new event, its performance is yet to see the light. But it is worth mentioning that in those few years it has got huge response. While the riskiness of Shariah index is lower than its counterpart. The risk adjusted performance of both indices is poor as per the results. Finally the risk adjusted performance of both indices is similar during the sample period. Existing literature on Shariah index in Bangladesh are very few. The study thus can further be extended. One probable extension is to examine the ways to make the index popular to general investors. Further information on included companies and regular update of inclusion should be made public, so that more studies could be done. The study has also disclosed the low volatile nature of DSE Shariah index than DSE General Index. Finally, the study concludes that DSE Shariah and DSE General Indices in Bangladesh show similar performance in term of returns.

References:

1. Dhaka Stock Exchange. 2017. www.dsebd.org (accessed August 30, 2017).

2. Dharani M., & Natarajan, P. 2011. Equanimity of Risk and Return Relationship between Shariah Index and General Index in India. *Journal of Social and Development Sciences. 2*(5): 213-222.

3. Sadeghi M.2008 Financial Performance of Shariah-Compliant Investment: Evidence from Malaysian Stock Market, International Research Journal of Finance and Economics ISSN 1450-2887 Issue 20

4. Ahmad & Ibrahim. 2002. A Study of Performance of the KLSE Shariah Index, *Malaysian Management Journal*, 6 (1&2): 25-34.

5. Albaity, M. and Ahmad, R. 2008. Performance of Shariah and Composite Indices: Evidence from Bursa Malaysia. Asian Academy of management journal of Accounting and Finance. 4(1): 23-43.

6. Hussein, A. K. 2005. Islamic Investment: Evidence From Dow Jones and FTSE Indices, Working paper, Islamic Business Research Centre, Norway.

7. Beik, S. I. and Wardhana, W. 2009. The Relationship between Jakarta Islamic Index and Other Selected Markets: Evidence from Impulse Response Function. Persatuan Pelajar Indonesia International Islamic University Malaysia. ppi-iium.org/.../The%20Relationship%20between %20JII% 20&% 20US.pdf.

8. Sharpe, W. F. 1964. Capital Asset Pricing: A Theory of Market Equilibrium under Conditions of Risk. *Journal of Finance*, 19(September): 425-42.

9. Treynor, J.L. 1965 How to Rate Management of Investment Funds. Harvard Business Review, vol. 43, January–February, pp. 63–75. www.kantakji.com/fiqh/Files/ Markets/ Khaled_A_Hussein_1.pdf

10. Hakim, S., and M. Rashidian 2002, “Risk & Return of Islamic Stock Market Indexes”, Economic Research Forum Annual Meetings, Sharjah, UAE.

FACTORS FOR DETERMINING HUMAN RESOURCE SUPPLY IN BANGLADESH

Sonjoy Maitra*

Abstract: The aim of this study is to identify the factors for determining HR supply in Bangladesh. The workforce in Bangladesh can be categorized into skilled and unskilled workers. The demand of workforce particularly can be linked to the nature of industry of Bangladesh. Bangladesh has made tremendous development in the labor intensive industry. For instance, the Garment industry is the source of largest employment of the unskilled workers. On the other side massive improvement in the general, engineering, medical, vocational and technical education are contributing to create skilled workforce. Bangladesh to create the more opportunity to access in the global market is shifting its focus from the labor intensive industries. Last couple of years Bangladesh is witnessing the government intensive priority on the digitalization of the public sectors. It is truly a big motivation for the private investor to make more investment in the ICT based business. Global Technology firms are investing in Bangladesh to manufacture their product. Recently large investment has come from global giant Samsung and LG for setting up manufacturing plants in Bangladesh. In every sector foreign investors are now choosing Bangladesh for manufacturing higher value product. Therefore the demand of skilled worker is significantly increasing in our country. Supply of Skilled workforce largely varies comparing to the unskilled workforce. The demand of unskilled workforce is high in the informal sectors. College and university are the traditional suppliers of the skilled workforce. The growth and future attractiveness of industry, compensation package, opportunity of professional deployment and education, job security and the working environment are the factors that determine the supply of workforce of any particular industry of Bangladesh.

Key words: Workforce, Skilled and Unskilled Workers, Human Resources Turnover, Timely payment, working hour and working environment.

*Assistant Professor, Dept. of Accounting, Faculty of Business Administration, Hamdard University Bangladesh,

Correspondence to: sonjoymaitra79@gmail.com.

Introduction

Bangladesh is a highly populous country of the world having about 160 million people. About one third of the total population is employed. According to Bangladesh Bureau of Statistics, 2017, the total labor force of the country was 63.70 million in 2016-17 with 1.04% growth rate a year on average. Among this population, unemployed population in 2016-17 was 2.70 million. However, the creation of job opportunities in different sectors is simply incompatible to this increase of unemployed people. So, the prospect of the whole economy of Bangladesh depends on the properties of the human resource supply. So, the requirement for human resource is not quite enough to create the employment facility for the existing unemployed people. Accordingly, the financial system faces excess supply of human resource. In job market, employment is determined by the supply of human resource in situations of full employment. However, in the states of being without a job and underemployment, employment is determined by the demand factors. Hence, the components of the supply function and the determinations of employment need to be analyzed separately.[1]

Keynes stated that a definite level of frictional joblessness was characteristic of all sorts of labor markets. However, involuntary joblessness may arise when a condition of disequilibrium exists in the job markets, with supply exceeding demand.[2]Any level of unemployment beyond the natural rate of unemployment most likely due to insufficient demand in the overall economy.

The human resource supply depends on some indicators like timely payment, wage satisfaction level, working environment, recreation, bonus, working hours, woman safety and security, etc. If these demands are fulfilled by the organizations and industries, then efficiency of the human resource will be high. Otherwise, the economic growth of the organizations and industries won't be in satisfactory level.

Objectives of the study

The objective of the study is to understand the nature of the human resource supply in Bangladesh which has been developed basis upon different factors.

- To compare age and knowledge, skill as well as ability (KSA) in different age groups and relationship between turnover with timely payment of wages.

- To develop the correlation among different factors of labor supply in Bangladesh.

Methodology

For the purpose of primary data were collected (>18 years) by the structured questionnaire. The processes of questionnaire preparation and finalization are as follows:

- Pre-testing the questionnaire by reconnaissance survey and
- Finalization of questionnaire

Data collection: On the basis of the objectives of the study a structure of the questionnaire was prepared based on information getting from survey, literature review, etc. Then a few numbers of questionnaires were tested in the field. But, it was observed that there was lacking of some information which needs to be updated. Then, a final questionnaire was prepared on the basis of the information getting from pre-testing of questionnaire.

Sampling: Bankers, Garment workers, Leasing Company workers were the key persons for interviewing during the field survey. Among the many sample collection methods, the simple random sampling procedure was followed for the purpose of data collection. The number of total sample was 50. Of them 35 were male and 15 were female.
Data Analysis: The data are put in the SPSS spread sheet. Then SPSS software has been used for the analysis of the data and development of table as well as graph.

Literature Review

This section reviews the literature on labor force participation (LFP) and labor supply both in Bangladesh and worldwide. Organizational factors represent the characteristics of the organization that influence human resource adoption in the firm. Troshani et al., (2011) stated that for successful innovation adoption, organization size, top level management support and skilled workforce are considered as important factors. [3] Chletsos et al., (2000) found that the growth rate has a positive impact on the employment level.[4] However, there is a negative relationship between employment and labor productively.Female Labor Force Participation (FLFP)rate is over 40 percent in Bangladesh and Nepal, 32 percent in India and Bhutan, 36 percent in Sri Lanka compared to only 27 percent in Pakistan.[5,6] Aly and Quisi (1996) investigated socio-economic factors that influence Kuwaiti women's' labor market participation decision[7]. Discussing FLFP rates in a macro level study for west Malaysia and Singapore, Fong (1975) estimated the changes in these rates from 1921 to 1957 and related these changes to socio-economic changes[8].

Amin (2005) has argued that increasing female labor force participation in Bangladesh has been dueto better enumeration of women's home based economic activities[9]. The major focus of the paper is onthe factors associated with women's participation in paid employment. The study obtained the results that women who are heads of households, have a smaller family and less education, live in urban areas and have less wealth are more likely to engage in paid work. The number of children below age five has an insignificant impact while microcredit borrowing has a positive impact. The only problem is related to the interpretation of the impact of education, which actually is similar to the wealth impact. Both may, again, be due to the fact that paid work is actually a combination of regular salaried employment and daily employment.

A study by the Asian Development Bank (ADB) and ILO (2011) looked at the labor market situationin Asian countries and especially highlighted the impact of the global financial crisis, which engulfedthe industrial economies since 2008[10]. Although it does not analyze the Bangladesh situation separately,some of the policy conclusions for South Asia region can be very relevant for this country.The studyhighlighted that gender inequalities are rooted not only in social and cultural norms but are alsodeeply entrenched in the policy focus and institutional environment. In addition, Rahman and Islam (2013)stated that female wage is observed to be only two thirds of the male wage[11]. The ratios are similarfor rural and urban areas. Thefemale to male ratio for monthly salary of employees is much lower than the ratio of daily wage. Gender differential of wageconsists of three factors, gender segmentation of occupation, differences in endowment and purediscrimination, which is linked to the lower bargaining power of female workers.

Khandker (1987) observes that the higher the education of a woman, the higher is the opportunity cost of not producing cash income and the higher is the probability that she participates in market work. Husband's education has a negative effect[12]. Similarly, increase in female wage reduces the probability of women's home production.

Majumdar and Begum (2000) draw on a combination of survey data and published studies on the RMG sector employment[13]. The papers provide information on work environment and the extent of gender differences in the terms of employment. The studies report that women employed in the RMG sector have a lower mean average age compared to their male counterpart. The average age of women in the latest survey was 20.4 years compared to 25 years for male workers in the sample. According to GoB (2006), safety in case of fire and for other hazards has been documented in Bangladesh Labor Act 2006[14].

Ahmed (1981) has stated on the aggregate level of rural labor supply. He said that rural unemployment is not involuntary largely prevalent among family workers of middle and rich farm households[15]. Landless and land-poor wage workers do not remain unemployed even for a few days, except during natural calamities when crops and employment potentials are lost. Hossain (1996) argues that since the rural people in Bangladesh live in village generation after generation, they know how to adopt and cope with the vulnerable situation[16]. The author says that the rural people have developed various income and employment smoothing mechanisms through which they can manage to remain employed. Over the year landlessness and near-landlessness is gradually increasing while it is neither a necessary nor a sufficient condition for rural poverty.

Results and Discussion

Bangladesh is a labor surplus country. The policy and legislation are quite intensive for human resource, and the then the economic growth will be faster. The findings from different factors are given below:

Comparison between age and knowledge, skill as well as ability (KSA)

The Figure1 shows that, at the age of 20-25, human resource has low knowledge, skill,ability (KSA) compared to the human resource (HR)at age of 26-30.Moreover, human resource at above 30has highest KSA among others. That is why, it can be said that,

- At age of 20-25, human resource starts to gather it's KSA
- At age of 26-30, human resource gathers average knowledge and skill. But it has high potential ability than others.
- At age of 30-45, human resource gathersso high knowledge and skill. But it has low potential ability than compared to others.

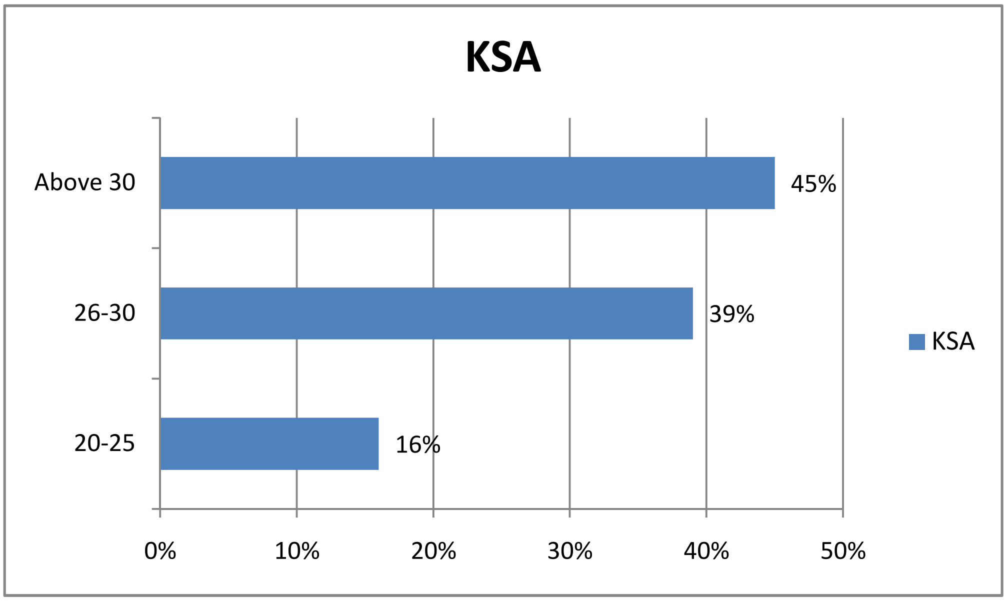


Figure 1:The comparative picture between Age and KSA

Descriptive Statistics of different factors of human resource supply

The Table 1 represents a summary picture of some indicators such as education level of respondent, wage satisfaction level, training necessity of human resource, knowledge, skill and ability of human resource and importance of human resource. From this table, it can be said that the mean of education level is in between S. S. C. and H. S. C. and it could fluctuate ± 1.15. In addition, satisfaction level by wage is about to negative. Furthermore, the training necessity of human resource is very much needed that will increase the knowledge, skill and ability of human resource.

Table1**:** Descriptive Statistics

Factors	Sample	Minimum	Maximum	Mean	Std. Deviation
Education Level of Respondent	50	1.00	4.00	2.8400	1.14927
Wage Satisfaction Level	50	1.00	2.00	1.9000	.46291
Training Necessity HR	50	1.00	2.00	1.1000	.32826
Knowledge, Skill and Ability of HR	50	1.00	2.00	1.1200	.37033
Importance of HR	50	1.00	2.00	1.0600	.23990
Valid N (listwise)	50				

Relation between timely payment and turnover

The comparative picture between timely payment and turnover rate is presented in Figure 2. From the above graph it can be stated that these two factors have inverse relation where due time payment refers to decreased turnover such as when timely payment is 55% then turnover rate is only 14%. On the other hand, if the due time payment is not met then turnover rate will decrease such as when timely payment is 18% then turnover rate is 48%.

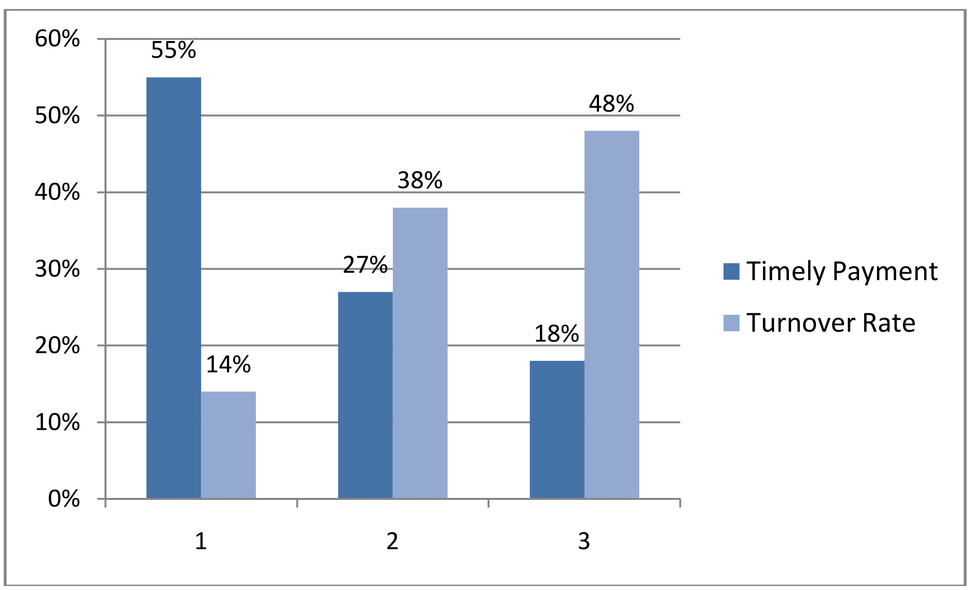


Figure 2: The comparative picture between timely payment and turnover rate

The Pearson correlation among different factors of labor supply in Bangladesh

The Table 2 introduces correlation of different factors of labor supply in Bangladesh like trade union right, standard wage for living, timely payment of human resources, and policy of bonus, increment allowance, and satisfaction on working environment. As per the table, The Pearson correlation between timely payment and trade union is -.403 that implies the variables change in the opposite direction. The two asterisks indicate that degree of confidence is high. On the contrary, Pearson correlation between the policy of bonus, increment allowance and standard wage for living is 0.117 that greater than 0.01. So, relation between policy of bonus, increment allowance and standard wage for living change in same direction.

Table 2: Correlations among different factors of labor supply in Bangladesh

Factors		Trade Union Right	Standard Wage for Living	Timely Payment of HR	Policy of Bonus, Increment Allowance	Satisfaction on Working Environment
Trade Union Right	Pearson Correlation	1	.063	-.403**	-.215	-.096
	Sig. (2-tailed)		.664	.004	.133	.506
	N	50	50	50	50	50
Standard Wage for Living	Pearson Correlation	.063	1	.083	.117	.177
	Sig. (2-tailed)	.664		.567	.418	.219
	N	50	50	50	50	50
Timely Payment of HR	Pearson Correlation	-.403**	.083	1	.268	-.027
	Sig. (2-tailed)	.004	.567		.060	.853
	N	50	50	50	50	50
Policy of Bonus, Increment Allowance	Pearson Correlation	-.215	.117	.268	1	-.256
	Sig. (2-tailed)	.133	.418	.060		.073
	N	50	50	50	50	50
Satisfaction on Working Environment	Pearson Correlation	-.096	.177	-.027	-.256	1
	Sig. (2-tailed)	.506	.219	.853	.073	
	N	50	50	50	50	50
**. Correlation is significant at the 0.01 level (2-tailed).						

Conclusion

In conclusion, this study has identified factors that influence the supply of workforce. The workforces have the diversity in terms of age, skill, education and experience. Because of this diversity there are different supply source of workers in the labor market. Village and urban slum are the major source of unskilled workers. A large number of people every year migrate to the big cities in search of work from the rural areas where natural disaster is high, employment opportunity is low and agriculture is the only economic activity. This illiterate poor people are employed mostly in the low paid informal sectors. School, college universities are the source of entry level fresh employees. Other than of our own skilled workforce many skilled migrant workers are employed in many critical and technical industrial job. Inflow of foreign nationals as skilled worker is increasing every year. Many retired private and government employees who have long expertise in the special field are working as consultant in our country. Many retired military personnel are joining in the workforce after their retirement. Association of the different professionals could be a major supply source of skilled workers. The employees who are coming back to Bangladesh after completing their foreign assignment could the source of skilled workforce. However more than 50% people are young of this country. Unfortunately we could not turn them in to human capital as we have the major drawbacks in our education system. Therefore there is severe shortage of the skilled workforce in our country. The identified factors in this study that control supply of workforce of any particular industry are the growth and future attractiveness of that industry, compensation package, opportunity of career development, job security and working conditions.

References

1. Rahman, R. I., 1993. Determinants of Wage Employment and Labour Supply in the Labour Surplus Situation of Rural Bangladesh. The Bangladesh Development Studies, Vol. XXI, No. 2, June 1993, pp 45-66, Dhaka, Bangladesh.

2. Hall, R. E., 1970. Why Is the Unemployment Rate So High at Full Employment? Brooking Papers on Economic Activity (3:1970).

3. Troshani, I., Jerram, C., & Hill, S. R. 2011. Exploring the public sector adoption of HRIS. Industrial Management & Data Systems, 111(3), 470-488.

4. Chletsos,Kollias and Manolas., 2000 . The Socio-Economic Determinants of Labour Demand in Greece: 1980-2001. http://ius.unicas.it/mc2005/papers/chietsos.pdf

5. World Bank Indicators, 1999. World Development Indicators 2000, Washington, D.C.

6. UNDP (United Nations Development Programme)., 1995a. Human Development Report 1995. New York: Oxford University Press.

7. Aly, Y.H. and Quisi, I. A.,1996. Determinantsof Female Labor Force Participation in Kuwait: A Logit Analyses", The Middle East Business and Economic Review, 8(2).

8. Fong, M. S., 1975. Female Labor Force Participation in a Modernizing Society: Malaya and Singapore, 1921-57, Papers of East West Population Institute, Honolulu Hawaii: East West Center Hawaii. No. 34.

9. Amin, S., 2005. Selective inclusion or active discrimination? Women and Labour Market in Bangladesh, Chapter 12, Emerging Issues in Bangladesh Economy: A Review of Bangladesh's Development 2005-06, Dhaka.

10. International Labour Organization (ILO) and Asian Development Bank (ADB), 2011. Women andLabour Markets in Asia. Rebalancing for Gender Equality (Geneva, ILO).

11. Rahman, R, I. and Islam, R., 2013.Female labor force participation in Bangladesh: Trends, drivers and barriers,International Labor Organization Asia - Pacific Working Paper Series,D WT for South Asia and Country Office for India.

12. Khandker, S. 1987. Labour Market Participation of Married Women in Bangladesh, Review of Economics and Statistics, Vol. LXIX, No. 3.

13. Majumder, P. P.; Begum, A. 2000. The Gender Imbalances in the Export Oriented Garment Industry in Bangladesh, Policy Research on Gender and Development, Working Paper Series No. 12 June 2000 (Washington DC, The World Bank)

14. GoB (Government of Bangladesh), 2006. Bangladesh Labour Act, 2006, Chapter VI: Safety, pp 42-47.

15. Ahmad, I., 1981. Wage Determination in Bangladesh Agriculture. Oxford Economic papers, 33, 1981, pp 298-322.

16. Hossain, A., 1996. Macroeconomic Issues and Policies: The case of Bangladesh, University Press Limited, Dhaka, Bangladesh.

Cyber Sexual Harassment in Bangladesh:A Sociological Perspective

Abdur Rahim Mollah[1], Jamsedur Rahman[2]

Abstract: This articlediscusses the cyber harassment that takes place using electronic technology. Electrononic technology includes devices and equipment such as cell phones and tables as well as communication tools including social media sites such as text messages,facebookchat and websites.As a branch of "Cyber Crime",cyber harassment is increasing day by day everywhere in the world as well as Bangladesh. To discuss about cyber harassment ,at first need to know the definition of cyber crime harassmentin cyber space has added new dimentions, going beyond typical day-to day harassment. Such cyber harassment covers posting indecent pictures, lewd comments, obnoxious and humiliating message and so on.Major causes behind the harassment in the physical world and the cyberspaces are motley. In general, motivation of intimacy seeking, or refusal,revenge, peer pressures, odd social norms,poor implementation of laws and so on induce harassment in real world. On the country, virtual harassment is stimulated by attempts at making fun of the victim, or personal disputes,refusal and the very nature and open-ended looseness of internet use.Cybersexsual harassment can range from lewd comments on Facebook, Twitter and Instagram to uploading a girl's image on a public fouram without her consent,from exhibition of unwanted sexual attention to distribution of pornographic materials online. The harassers are not always complete strangers,but may also be friends or acquaintances from off –line social interactions.

Key words: Cyber , Harassment, Sexual.

Introduction

Online harassment and threats are not a new phenomenon, but the degree to which these are directed at women and girls have begun to receive increased attention from news media, academia and law enforcement. Forms of harassment can vary widely, from name-calling and trolling to persistent stalking and shaming to outright sexual and death threats.

1. Assistant Professor,Department of Sociology,Dhaka International University,Dhaka,Bangladesh.
2. Lecturer, Department of Sociology,Dhaka International University,Dhaka, Bangladesh.
Correspondence:abdurrahimsust@yahoo.com, jmsedur_ju@yahoo.com

To some degree, the problem is structural and dates back to the Internet's early days: The Telecommunications Act of 1996 allowed operators of websites to avoid liability for what users post, although the limits of this continue to be tested in the courts and many aspects of the Communications Decency Act provision are not entirely settled. But it remains the case that the wide-open environment that enables creativity, innovation and vigorous debate online paradoxically also enables derogatory, anonymous speech for which there is often little legal recourse. Because of the volume of data and information they deal with, many Internet and social media companies struggle to articulate and enforce standards, even on more obvious issues such as the online messaging of violent extremists. Most warn that death threats, for example, are not protected by free speech, but banning users in an environment with anonymity is a challenge. In particular, the problems inherent on the micro blogging platform Twitter, which, unlike Facebook, allows for anonymity, have been playing out publicly

Objective of the Study

General Objective

The general objective of this research paper is to point up the "**Cyber Sexual Harassment in Bangladesh.**

Specific Objective

The Specific targets to be fulfilled were as follows:

i. To find out the effects of Cyber Sexual Harassment in Bangladesh
ii. To find out the Facebook Sexual Harassment in Bangladesh
iii. To analyze the Internet harassment and online threats targeting women.

Methodology of the Study

Both primary and secondary sources were used to collect information for this research and report. Following information/variables were considered to conduct this study that is illustrated.

Study Area

The report has been compiled through both primary and secondary data. As the primary source of the report, the researcher conducted various exclusive interviews among the facebookusasurse. A semi structured questionnaire was used to conduct the interviews. Secondary data have been collected from various studies made available through library work and via searching through journals available in the Internet. The collected data have been interpreted to complete the report. The researcher has undertaken an extensive literature survey in order to review the historical perspective of the social media.Thestudy areas are:

- Dhaka International UniversityCampus,Green Road.
- Farmgate

Sources of Data

Primary data are given below

- ➢ Personal Interview
- ➢ Face to face conversation with the officer
- ➢ Direct observation
- ➢ The Questionnaire
- ➢ Schedule survey
- ➢ Informal discussion with professionals

Secondary data

Secondary data are the data that have been already collected by someone and readily available from other sources. Such data are quickly obtainable than the primary data. This data are very much helpful when Primary data cannot be obtained at all. The secondary data are collected from the following sources:-

- ✓ Website
- ✓ Different books and related journals
- ✓ Previous internship reports
- ✓ Corporate newsletters
- ✓ Manual

Sample Size

The sample size of the research shall 50.

Processing and Analysis of Data

The research work is basically based on the primary data, so a huge amount of primary data was collected in forms of questionnaire survey, observation and key informant interview. And on the other hand, secondary data was one of the important parts of the research to make the research more strong in term of acceptance and the real impact of cyber sexualharassment in Bangladesh which is naturally vulnerable. Secondary data have beencollected from different books, articles, journals, research papers, newspapers, internet etc., in textual form from students and professionals.

Data analysis and Interpretation of Data Information

After the collection of all information from all possible sources, the collected data have been analyzed and investigated to understanding the real condition of the city. The general and advanced statistical and analytical tools were used to analyze the collected data with Microsoft Excel 2007. Then findings were portrayed and arranged through various tables, charts and graphs. The data analysis included DescriptiveStatistics.

The related findings were established based on the data analyzed and different issues of the social media.

Literature Review

The following studies and papers provide further perspective on these and related issues of online threats and harassment:

"Offences that are committed against individuals or groups of individuals with a criminal motive to intentionally harm the reputation of the victim or cause physical or mental harm, or loss, to the victim directly or indirectly, using modern telecommunication networks such as Internet (Chat rooms, emails, notice boards and groups) and mobile phones (SMS/MMS)".

Cyber harassment is a part of cyber crime which defames and humiliates an individual or a group According to U.S. Legal Definitions, "cyber-harassment could be limited to posting rumors or gossips about a person in the internet bringing about hatred in other’s minds; or it may go to the extent of personally identifying victims and publishing materials severely defaming and humiliating them".[1]

“Online Harassment,Defamation and Hateful Speech:A primer of the Legal Landscape”

"This interdisciplinary project focused on online speech directed at women and seeks to provide a primer on (i) what legal remedies, if any, are available for victims of sexist, misogynist, or harassing online speech, and (ii) if such legal remedies and procedures exist, whether practical hurdles stand in the way of victims' abilities to stop harassing or defamatory behavior and to obtain legal relief. The study concluded that while online harassment and hateful speech is a significant problem, there are few legal remedies for victims. This is partly due to issues of jurisdiction and anonymity, partly due to the protection of internet speech under the First Amendment, and partly due to the lack of expertise and resources on online speech at various levels of law enforcement. Given this landscape, the problem of online harassment and hateful speech is unlikely to be solved solely by victims using existing laws; law should be utilized in combination with other practical solutions."[2]

"Embodied Harms: Gender, Shame and Technology-Facilitated Sexual Violence" "Criminality in cyberspace has been the subject of much debate since the 1990s, yet comparatively little attention has been paid to technology-facilitated sexual violence and harassment (TFSV). The aim of this article is to explore the ways in which retraditionalized gender hierarchies and inequalities are manifested in online contexts, and to conceptualize the cause and effects of TFSV as "embodied harms." We argue that problematic mind/body and online/off-line dualisms result in a failure to grasp the unique nature of embodied harms, precluding an adequate understanding and theorization of TFSV."[3]

"Perpetuating Online Sexism Offline: Anonymity, Interactivity and the Effects of Sexist Hashtags on Social Media" "Sexism and sexual harassment are not uncommon in online environments such as social networking sites, forums, and video games. This experiment investigated whether users' anonymity and level of interactivity with sexist content on social media influenced sexist attitudes and offline behavior. Participants (N = 172) used a Twitter account that was anonymous or had personally identifying details. They were asked to share (i.e., retweet) or write posts incorporating a sexist hashtag. After exposure, participants completed two purportedly unrelated tasks, a survey and a job hiring simulation in which they evaluated male and female candidates' resumés. Anonymous participants reported greater hostile sexism after tweeting than nonanonymous participants. Participants who composed sexist tweets reported greater hostile sexism and ranked female job candidates as less competent than those who retweeted, although this did not significantly affect their likelihood to hire."[4]

"Online Incivility or Sexual Harassment?Conceptualising Women's Experiences in the Digital Age" "Launched in 2006, the growth of Twitter as a microblogging platform has been exponential, yet little research to date specifically considers women's experiences of the medium. This article draws on a case study of the mencallmethingshashtag, in which women describe and discuss the verbal abuse that they have received online from men. Providing a broad based context for the specific analysis of the mencallmethingshashtag, I concentrate on the theoretical contributions made by western feminist research over the last 30 years to embed the aggressive harassment of women online in a wide review of types of threats to women. I argue that the harassment conveyed in the hashtag should be recognized as online sexual harassment, and a form of excluding women's voices from the digital public sphere."[5]

"Exploring Differences in How Men and Women Respond to Threats to *Positive Face* on Social Media" "A three-condition (rejection, criticism, control) experiment (N = 78) with gender treated as an additional factor and moderating variable examined gender differences in response to two types of threats to positive face — rejection and criticism — on a social-networking site. Results showed it did not matter if men or women were rejected or criticized on a social-networking site; both threats to positive face lead to more retaliatory aggression, compared to the control. However, men retaliated to a greater extent than women to both types of threats. Also, men responded differently to criticism than to rejection, while women's results did not vary. Findings are discussed in relation to face theory and politeness theory, particularly in regard to computer-mediated communication."[6]

"Sexual Harassment""The rise of sexual discrimination in cyberspace is only one of the most recent and most striking examples of the phenomenon's increasing complexity. Sexual harassment law, however, has not kept pace with this evolution. Discrimination law has not been adequately 'updated' to address new and amplified practices of sex discrimination. Its two principal limitations are (1) it treats only sexual harassment that occurs in certain protected settings (e.g. the workplace or school) as actionable and (2) it assumes that both the activity and the resulting harm of sexual harassment occur in the same protected setting. Thus, it is unable to address any harassment that occurs completely or partially outside of traditionally protected settings. By contrast, this article proposes a ‘multiple-setting’ conception of sexual harassment that both moves beyond traditionally protected settings and explicitly acknowledges that sexual harassment in one setting can produce harms in another. In order to address multiple-setting harassment, a third-party liability regime similar to that of traditional sexual harassment law should be introduced into non-traditional contexts. In the particular case of online harassment, liability should attach to website operators. This regime will create an incentive for website operators to adopt preemptive, self-regulatory measures against online sexual harassment, much as employers have done in the offline setting.”[7]

“Criminalizing Revenge Porn”“Violations of sexual privacy, notably the non-consensual publication of sexually graphic images in violation of someone’s trust, deserve criminal punishment. They deny subjects’ ability to decide if and when they are sexually exposed to the public and undermine trust needed for intimate relationships. Then too they produce grave emotional and dignitary harms, exact steep financial costs, and increase the risks of physical assault. A narrowly and carefully crafted criminal statute can comport with the First Amendment. The criminalization of revenge porn is necessary to protect against devastating privacy invasions that chill self-expression and ruin lives.”[8]

“Sexism in Online Video Games: The Role of Conformity to Masculine Norms and Social Dominance Orientation” “Sexism toward women in online video game environments has become a pervasive and divisive issue in the gaming community. In this study, we sought to determine what personality traits, demographic variables, and levels of game play predicted sexist attitudes towards women who play video games. Male and female participants (N = 301) who were players of networked video games were invited to participate in an anonymous online survey. Social dominance orientation and conformity to some types of masculine norms (desire for power over women and the need for heterosexual self-presentation) predicted higher scores on the Video Game Sexism Scale (i.e., greater sexist beliefs about women and gaming). Implications for the social gaming environment and female gamers are discussed.”[9]

Cyber sexual harassment look like

Cyber sexual harassment can range from lewd comments on Facebook and Twitter to uploading a girl's image on a public forum without her consent, from exhibition of unwanted sexual attention to distribution of pornographic materials online. The harassers are not always complete strangers, but may also be friends or acquaintances from off-line social interactions.

Reporting cyber sexual harassment

In most cases, women feel that reporting the incidents would not bring them any justice; rather, it would give rise to intrusive questions about her character and bring disgrace to her and her family. If the incidents are of a less severe nature (such as offensive comments on Facebook), they think that authorities would dismiss them as insignificant.

"We do not usually get cases of cyber sexual harassment, and even in the rare instances that we do, in the end, women don't want to go to court, for fear of societal and institutional discrimination," says Salma Ali, the Executive Director of Bangladesh National Woman Lawyers Association (BNWLA).

Are existing laws enough

- Legal experts note that cases can be filed under the existing Women and Children Repression Prevention Act 2000 (amended 2003), Information and Communications Technology (ICT) Act 2006 and Pornography Control Act 2012. However, there is no comprehensive law or section adequately dealing with sexual harassment in social media and other digital platforms.
- "The problem is that our laws have not been effectively updated to deal with offences that use digital media, and our evidence laws are still so archaic that they don't allow for use of electronic evidence," argues Sara.

70% of Facebook users are victims of harassment, training to live in the government

70 percent of the internet users in Bangladesh are harassed. **Cyber**crime is increasing day by day. The government has taken an initiative to train thousands of girls in schools because of the increase in the number of crimes. Already 10 thousand students have been trained through a pilot project. Cyber security experts believe that the Internet will help the students to protect themselves against harassment or blackmail.The Department of Information and Communication Technology (ICT) of the Bangladesh Government has recently completed a pilot project, in which students are taught how to protect themselves in urban areas, online threats or cyber

harassment. State Minister of ICT Junaid Ahmed told Polk Media that 10 thousand students of 40 schools and colleges participated in the project.The 15-year-old Saha, who participated in the workshop, thinks he has benefited from the training.In the last 15 years, the number of internet users has increased double every year.About half of Bangladeshi social media users are women and women. The authorities said that about 70% of them were victims of cyber crime.

Cyber Harassment And Women

Cyber harassment is a part of cyber crime which defames and humiliates an individual or a group. According to U.S. Legal Definitions,*"cyber-harassment could be limited to posting rumors or gossips about a person in the internet bringing about hatred in other's minds; or it may go to the extent of personally identifying victims and publishing materials severely defaming and humiliating them"*.

Types of cyber Harassment in Bangladesh

Creating Fake Profile: A statistics of 2014 shows that there are **83.09 millions** fake profile in Facebook **(Graham Cluley,2014)**

This statistics indicates the severity of Fake profiles in internet . These Fake profiles can be opened in social networking site like Facebook , YouTube , Linked In , Twitter or anywhere else in the cyber space .These fake profiles are opened for various reasons :

- Harassing a group or an individual
- Hiding actual identity for doing illegal works on Facebook
- Spreading anti religious , anti national sentiment
- Business purpose
- Spamming
- Political propaganda

Putting Bad Comments

Recently national cricketer " Nasir Hussein " asked some Bangladeshi people not to follow him on Facebook . Why a national figure and celebrity made that decision ?

"Dear fans, I really get hurt by your comments. I posted this pic on request of my younger sister; many of you put bad comments on it. And some of them made fun posts with it. I have removed the picture. Are you happy now? I do not need fans like you. Whoever do not like me, please don't follow me and put comments in my picture .Thank you! "

Spreading False News And Rumor About Someone

When a news is published or broadcasted in a mainstream media , the news is checked ,edited and verified by an editor . And he is responsible for the news to the law enforcement agency .

But, in online media the situation is different. One can publish and spread a news and remain anonymous. He doesn't need to be accountable to anyone. So, he has a full liberty to publish and spread a news and most often the liberty is used to spread false news and rumor.

Recently BBC has published a survey of online newspapers and social media . The result of this survey is alarming. More than $1/4^{th\%}$ news online are fake.

The most irritating and alarming fact is that people believe those news and share those on various social networking sites.

This news creates a hoax and mislead an individual or a group into serious trouble.

Spamming

"Electronic spamming is the use of electronic messaging systems to send unsolicited messages (spam), especially advertising, as well as sending messages repeatedly on the same site. While the most widely recognized form of spam is email spam, the term is applied to similar abuses in other media: instant messaging spam, Usenet newsgroup spam, Web search engine spam, spam in blogs, wiki spam, online classified ads spam, mobile phone messaging spam, Internet forum spam, junk fax transmissions, social spam, television advertising and file sharing spam."

Sexual or Pornographic Content

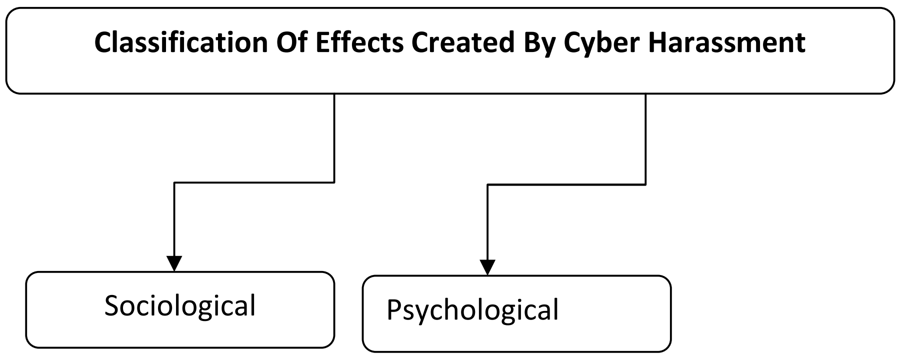
This screenshot has been taken from Facebook . In online there are millions of contents like this. This is a simple example of pornography in online sphere .

Women and Cyber Harassment : A Bangladeshi Perspective

Women are the worst victim of cyber crimeand harassment everywhere in the world as well as Bangladesh . “Crimes targeted against women with a motive to intentionally harm the victim psychologically and physically, using modern telecommunication networks such as internet and mobile phones”[1]

Effects of Cyber Harassment on women in Bangladesh

The effects of Cyber Harassment on women are many . These effects divided into two major parts .



Sociological Effect

Bangladeshi people are not well educated .Since ,they are not well educated ,they can not justify many things like "Everything published on Facebook ,Twitter ,YouTube or Blogs are not true . Many of them may be false. Many of them may be fake .Many of them have no authentic newssource ."[10]

Psychological Effect

Whena fake account is opened , a girl has to face many problems . The main problem is from society and herself that affects the mental health of a girl .

These effects can be divided into following points .

- Frustration
- Guilt, embarrassment, self-blame
- Apprehension, fear, terror of being alone or that they, others or pets will be harmed.
- Feeling isolated and helpless to stop the harassment
- Depression (all symptoms related to depression)

- Anxiety, panic attacks , Inability to sleep – nightmares, ruminating
- Personality changes due to becoming more suspicious, introverted or aggressive
- Self-medication alcohol/ drugs or using prescribed medications
- Suicide thoughts or attempts

Cyber harassment can lead a women into deep psychological problem as mentioned before .

Suicide Attempts due to Cyber harassment In Bangladesh

Laws and their implementation regarding Cyber Crime And Harassment In Bangladesh

To cope with the emerging threat of cyber crime and harassment Bangladesh Government has initiated **2 laws .** They are ,

- ICT Act 2006
- Amendment of Telecommunication Act 2001 .

Bangladesh police has opened a cyber wing to deal with the increasing rate of cyber threat . This wing is responsible for monitoring cyber crimes and tracking the criminals . people to proper position , we can't remove illicit contents from Internet .

Cyber Crime is the recent addition in the branches of crime.This crime is increasing everywhere in the world as well as Bangladesh.The crime brings about Cyber Harassment.Majority of the people of our country are illiterate. Even , among the educated people, there are many people lacking common sense . Around 30% of online users are female in our country . This minor part of gender lacks technological knowledge. So, it is too much easy for a criminal to harass the female one . After being attacked on online most of the women faces social and psychological problems .The law enforcing agencies and BTRC are still ineffective . Because of their ineffectiveness the criminal get extra privileges to harass the women . With proper steps the government should reduce the rate of Cyber Harassment .But ,first of all the awareness of the common people is needed.

Analysis and Interpretation

In this section the data analysis of the "Cyber Sexul Harassment in Bangladesh " put to various respondents attributes. The results are presented according to the various customs quality dimensions. Each dimension consists of its own specific questions. The results of the report are presented according to these questions that were asked to the respondents with the help of a structured questionnaire. The results of this study are as follows:

Gender of Respondents

Table:1.Gender of Respondents

Frequency	No of respondents	Percent (%)	Valid Percent
Male	43	86	86.0
Female	7	14	14.0
Total	50	100	100

Source: Fieldwork 2017

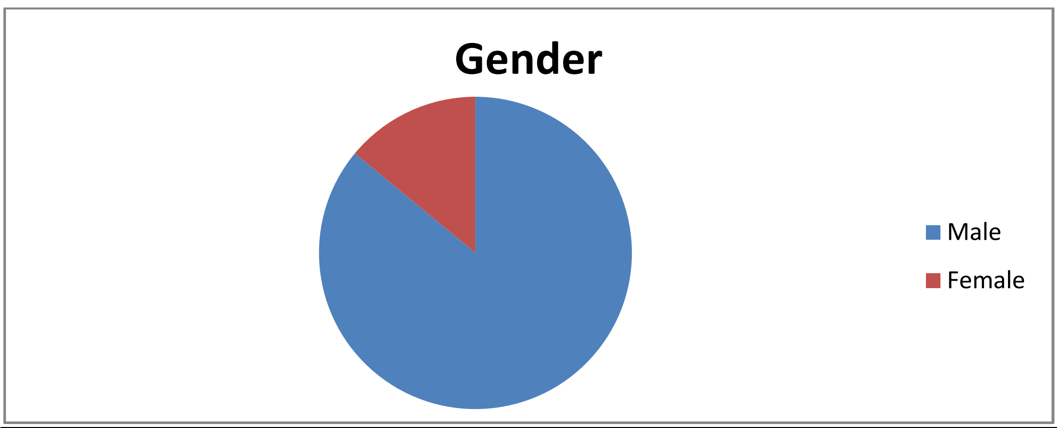


Figure 1.Gender of Respondents

InterpretaitonFigure 1 shows that in the total number of respondents 86% areof male and 14% are of female

Respondents view over cyber sexual harassment

Table :2What does cyber sexual harassment look like?

Frequency	No of respondents	Percent (%)	Valid Percent
Yes	40	80	80.0
No	10	20	20.0
Total	50	100	100

Source: Fieldwork 2017

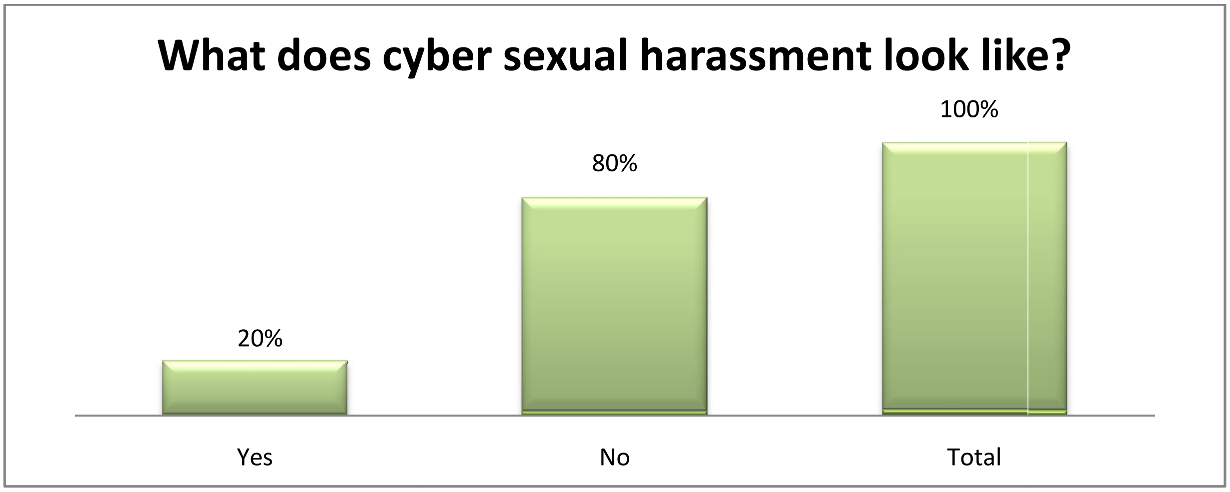


Figure: 2 What does cyber sexual harassment look like?

Interpretation: Fifure 2 shows that among 100 respondents, 80% respondent says that cyber sexual harassment looks likehigh and 20% respondent says that the cyber sexual harassment looks like low.

Respondent views over existing laws

Table: 3 Are existing laws enough?

Frequency	No of respondents	Percent (%)	Valid Percent
Yes	45	90	90.0
No	5	10	10.0
Total	50	100	100.0

Source: Fieldwork 2017

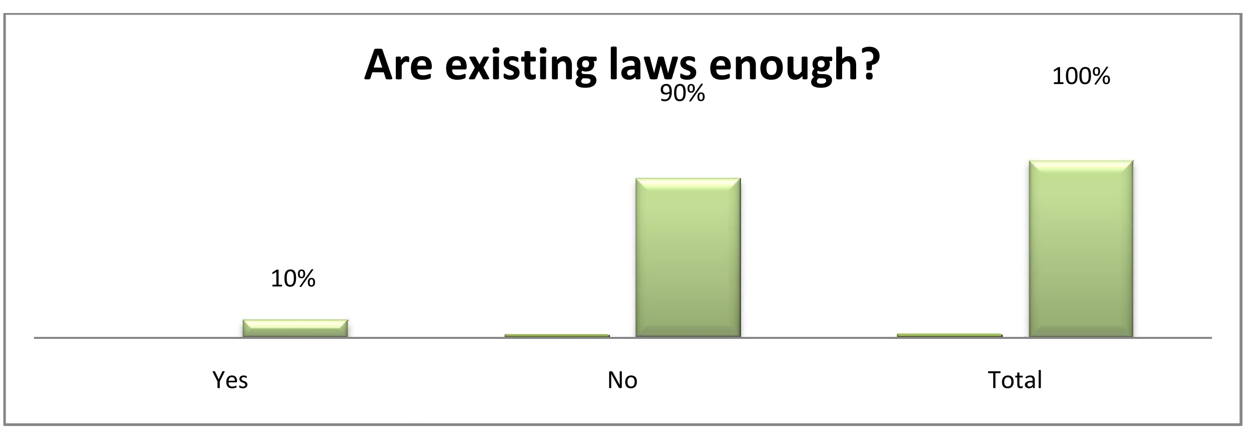


Figure: 3 Are existing laws enough?

Interpretation: Figure 3 shows that among 100 respondents, 90% respondent says that existing lawsare enough for the prevention on the other hand 10% respondent dissatisfied on the existing laws.

Women view over online harassment

Table: 4What are more woman likely to be upset by online harassment?

Frequency	No of respondents	Percent (%)	Valid Percent
Extremely upsetting	15	30	30.0
Very upsetting	10	20	20.0
Some what upsetting	8	16	16.0
A little upsetting	10	20	20.0
Not at all upsetting	7	14	14.0
Total	50	100	100

Source: Fieldwork 2017

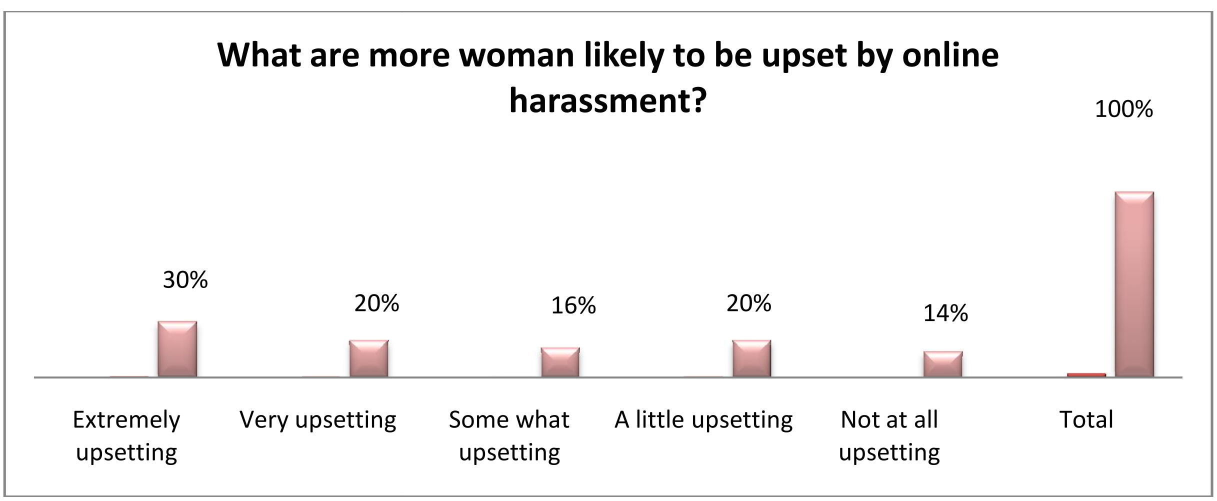


Figure: 4 What are Women more likely to be upset by online harassment?

Interpretation: Figure 4 shows that the among 100 respondents, 30% respondents are extermlyupseting, 20% respondents are very upseting, 20% respondents are a little upseting and14% respondents are not at all upsetting.

Respondents view on the sexual perversion in the Society

Table: 5 What are the causes for sexual perversions in the society?

Frequency	No of respondents	Percent (%)	Valid Percent
Facebook	22	44	50.0
Twiter	10	20	20.0
Instagram	8	16	16.0
YouTube	10	20	14.0
Total	50	100	100

Source: Fieldwork 2017

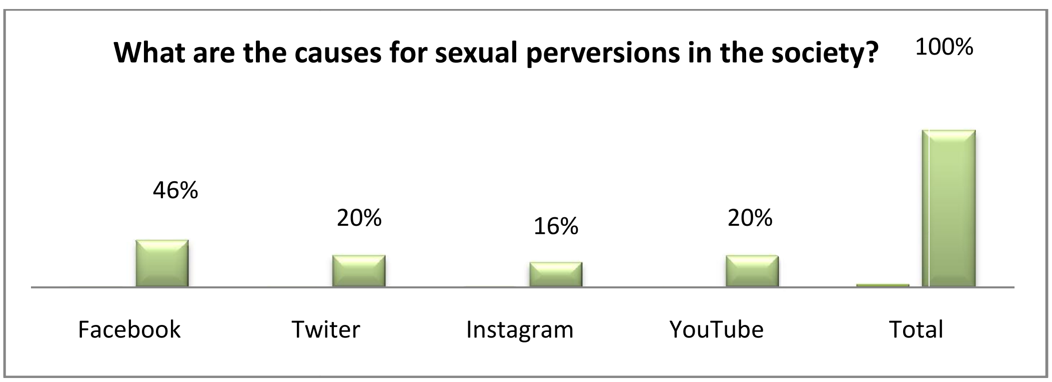


Figure: 5 What are the causes for sexual perversions in the society?

Interpretation: Figure 5 shows that the among 100 respondents, 44% respondent says that the causes of sexual perversions in the society at facbbok, 20% Twiter, 16% persons are instagram and 14% persons are youtube.

Respondent views of obscenity on facebook

Table: 6 What is Promoting obscenity' on Facebook?

Frequency	No of respondents	Percent (%)	Valid Percent
Yes	35	70%	70.0
No	15	30%	30.0
Total	50	100%	100.0

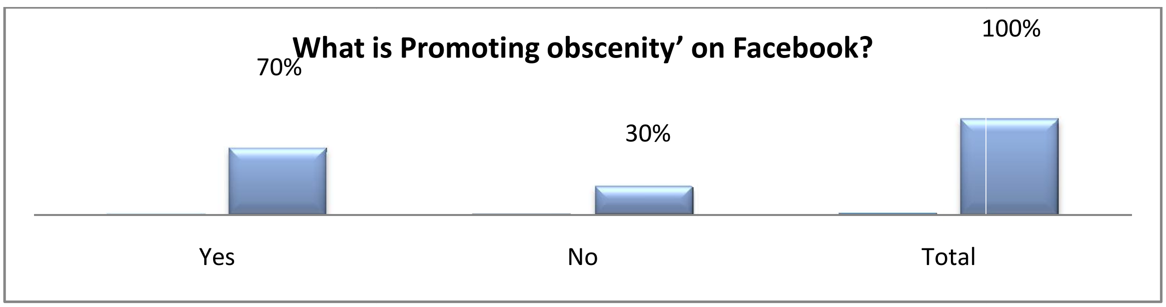


Figure: 6 What is Promoting obscenity' on Facebook?

Interpretation: Figure 6 shows that the among 100 respondents, 70% persons say thatthe Promoting obscenity' on Facebook is highand 30% persons say that the Promoting obscenity' on Facebookis low.

Respondent views about women on Social Media

Table: 7Arethe women main victims of Social Media?

Frequency	No of respondents	Percent (%)	Valid Percent
Yes	39	78	78.0
No	11	22	22.0
Total	50	100	100.0

Source: Fieldwork 2017

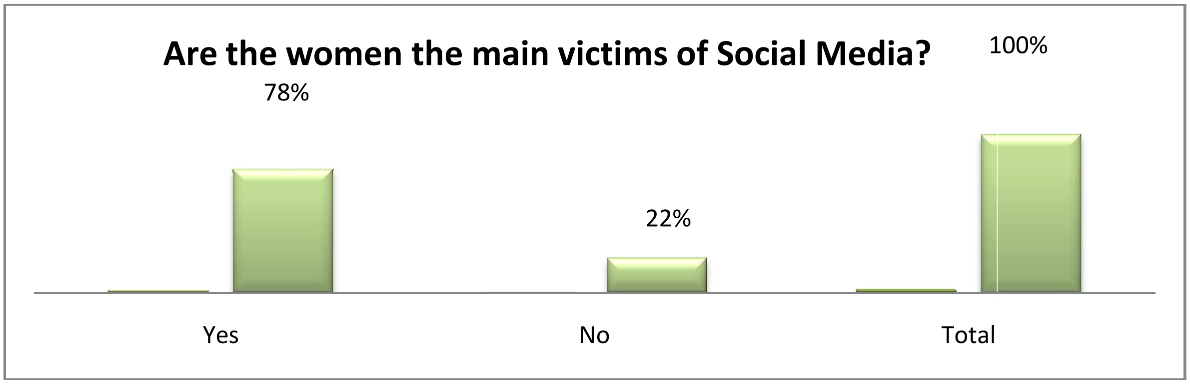


Figure: 7Are the women main victims of Social Media

Interpretation: Figure 7 shows that the among 100 respondents, 76% persons say that women are the main victims of Social Media and 22% persons say that thewomen are not main victims of Social Media.

Table: 8 Effects of using Facebook of Society?

	Discloses PersonalPrivacy	Expensive InternetMegabyte	Huge Friend RequestAccepting	Wastage of Time	Total
Percent(%)	30	20	10	40	100
Frequency	15	10	5	20	50

Source: Fieldwork 2017

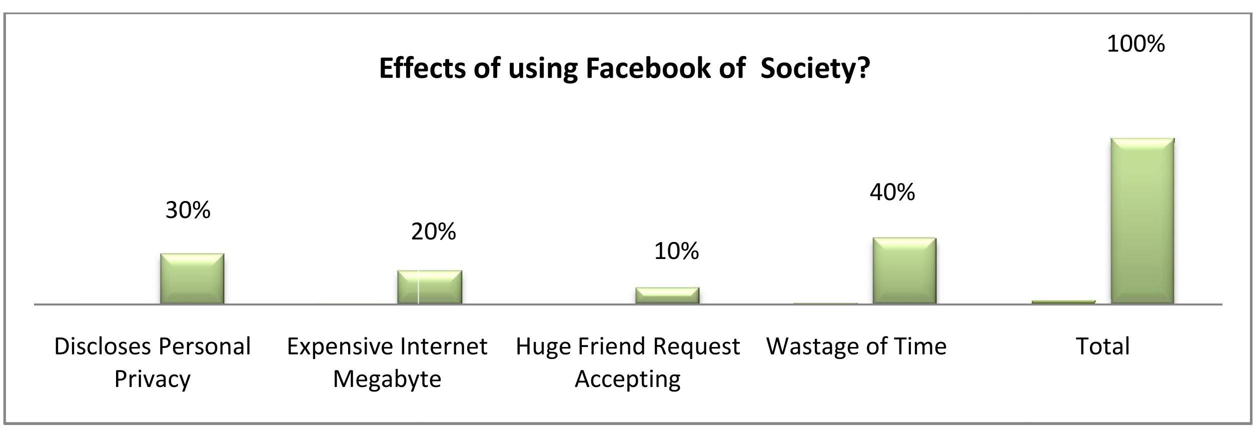


Figure: 8 Effects of using Facebook of Society?

Interpretation: Figure 8 shows that the among 100 respondents, 30% respondents disclose their personal privacy, 20% respondents think that the interntmegabyte is expensive, 10% are accepting huge friend request and 40% respondent think that it is wastage of time.

Respondents view on cyber harassment on women in Bangladesh

Table: 9 What are the effects of cyber harassment on women in Bangladesh?

Frequency	No of respondents	Percent (%)	Valid Percent
High	10	20	20.0
low	40	80	80.0
Total	50	100	100.0

Source: Fieldwork 2017

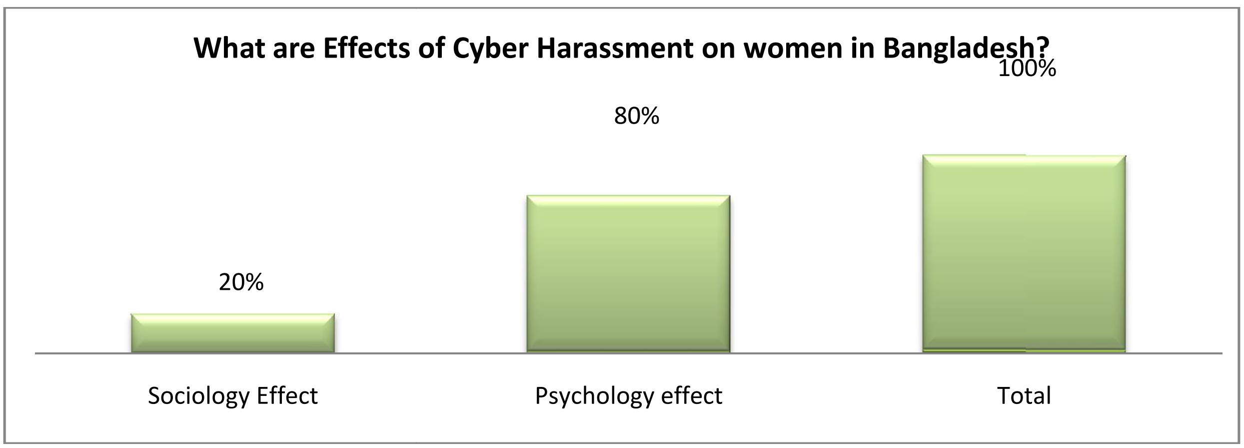


Figure: 9What are Effects of Cyber Harassment On women in Bangladesh?

Interpretation: Figure 9 shows that the among 100 respondents, 20% persons effects of cyber harassment on women in Bangladesh is high on the other hand80 % persons say that the effects of cyber harassment on women in Bangladesh low.

Conclusion

The study concluded that while online harassment and hateful speech is a significant problem, there are few legal remedies for victims. This is partly due to issues of jurisdiction and anonymity, partly due to the protection of internet speech under the First Amendment, and partly due to the lack of expertise and resources on online speech at various levels of law enforcement. Given this landscape, the problem of online harassment and hateful speech is unlikely to be solved solely by victims using existing laws; law should be utilized in combination with other practical solutions.

Recommendation

- BTRC will take immediate action to online harassment on social networks using victims' name and images and running obscene pages with the intent of harassment.
- The commission will take punitive actions within 24 hours after a complaint has been filed for online harassment or criminal activities. The perpetrator will be brought to justice within three days after the complaint is filed.
- Electronic technology includes devices and equipment such as cell phones, computers, and tablets as well as communication tools including social media sites
- Major causes behind the harassment in the physical world and the cyberspaces are motley.
- In general, motivation of intimacy seeking, or refusal, revenge, peer pressures, odd social norms, poor implementation of laws and so on induce harassment in real world.
- Cyber sexual harassment can range from lewd comments on Facebook and Twitter to uploading a girl's image on a public forum without her consent, from exhibition of unwanted sexual attention to distribution of pornographic materials online.
- The harassers are not always complete strangers, but may also be friends or acquaintances from off-line social interactions.

References

1. Halder, D., &Jaishankar, K. (2011) Cyber crime and the Victimization of Women: Laws, Rights, and Regulations , Hershey, PA, USA

2. “Online Harassment, Defamation and Hateful Speech: A Primer of the Legal Landscape” Marwick, Alice E.; Miller, Ross W. Fordham Center on Law and Information Policy Report No. 2, June 2014.

3. “Embodied Harms: Gender, Shame and Technology-Facilitated Sexual Violence” Henry, Nicola; Powell, Anastasia. Violence against Women, March 2015, doi: 10.1177/1077801215576581.

4. “Perpetuating Online Sexism Offline: Anonymity, Interactivity and the Effects of Sexist Hashtags on Social Media” Fox, Jesse; Cruz, Carlos; Lee, Ji Young. Computers in Human Behavior, November 2015, Vol. 52, 436-442. doi: 10.1016/j.chb.2015.06.024.

5. “Online Incivility or Sexual Harassment? Conceptualising Women’s Experiences in the Digital Age” Megarry, Jessica. Women’s Studies International Forum, November–December 2014, Vol. 47, Part A, 46-55. doi: 10.1016/j.wsif.2014.07.012.

6. “Exploring Differences in How Men and Women Respond to Threats to Positive Face on Social Media” Chen, Gina Masullo; Abedin, Zainul. Computers in Human Behavior, September 2014, Vol.38, 118-126. doi: 10.1016/j.chb.2014.05.029.

7. Franks, Mary Anne.- Sexual Harasment, Maryland Law Review ,2012.

8. Citron, Danielle Keats; Franks Marry Anne- Criminalizing Revenge Porn, Wake forest Law Review,2014. Vol.49.

9. Fox, Jesse; Tang Wai- Computer in human behavior, April 2014, Vol.-33, pp 314-320.

10. Suman Ahmed 2012 , “Cyber harassment ! The most feared crime “ , Dhaka .