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EDITORIAL

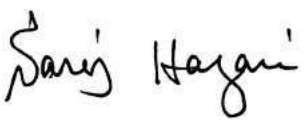
It gives me immense pleasure to write a few words on the eve of publication of BGC Trust University Journal, Volume 5. There is no denying of the fact that a journal is the mirror of research work of academicians of ours and others. Research is an integral part of any academic institution particularly university. It's a soothing and comfortable place that opens a new horizon to the researchers. A journal is a tool for disseminating research findings derived from the studies conducted by the academicians.

The quality of papers determines the standard of the journal and we are steadfast to maintain the standard of the journal. Hence, the guidelines formed for the selection of research papers and publications of journal have strictly been followed. The editorial board primarily screened the articles after the plagiarism test and then the chief editor selected the reviewers for evaluating the papers with valuable comments. Each paper was reviewed by two well known academicians in the relevant area of research. Following the comments of two reviewers, the concerned paper was either selected or rejected. The respective authors asked to modify the the manuscripts as per suggestions of the concerned reviewers. In case of difference of opinions between the two academicians, a third reviewers was selected for settling the issue.

The journal has been sponsored and financed by BGCTUB. I would like to thank all the members of the editorial board for their hearty and sincere effort to make this endeavor a success.

I would like to express my gratitude to the authors for undertaking attempt of preparing research papers with utmost care and sincerity in the teeth of so many limitations.

Despite my utmost efforts, the journal may not be free from errors and if so I won't hesitate to shoulder the responsibility.



Prof. Dr. Saroj kanti Singh Hazari
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Contents

01. **Establishing Linear Regression Equation Model in Kirkpatrick's Model for Assessing Training Effectiveness: An Empirical Study on Private Commercial Banks of Bangladesh** 7-25
Mohd. Kamal Uddin

02. **Evaluation of Executives' Demographic Factors Impacting the Training Effectiveness through Establishing Multiple Regression Model: An Empirical Study on the Private Commercial Banks of Bangladesh** 26-52
Mohd. Kamal Uddin

03. **Application of Non-Linear Optimization Models in Water Resources Systems through Sustainable Management** 53-66
Mamun-Or-Rashid
Dr. Ganesh Chandra Ray

04. **Testing the optimal solutions of nonlinear programming problems by analyzing the sequential quadratic programming method** 67-82
Mamun-Or-Rashid
Dr. Ganesh Chandra Ray

05. **Workplace Counseling for Employee Development: A Study on Banking Sector Employees of Bangladesh** 83-112
Ms. Rownuk Jahan
Ms.Fahmida Zaman
Mr. Mohd. Kamal Uddin

06. **Role of Leadership Styles in Problem Solving at the Private Commercial Banks of Bangladesh** 113-137
Mohona Biswas
Dr. Shameema Ferdausy
Dr. Md. Sahidur Rahman

07. **Upsurge of Multinational Corporations through Capitalism Influences Adversely the Third World Countries like Bangladesh: A Study in Quest of Propitious Mechanisms** 138-161
Mohammad Abdul Hannan

08. **Toponymic Decolonization in Bangladesh** 162-175
Mahamuda Akter
Sarwar Morshed

09. **Social Responsible Marketing Practices in Banking Industry: A Study on Private Commercial Banks of Bangladesh** 176-202
Dr. Md. Sarwar Uddin
Soman Chakraborty

10. **Creative Performance Behavior: The Role of Employee Job Involvement and Job Satisfaction** 203-226
Soman Chakraborty
Dr. Md. Sarwar Uddin

11. **A Critical Evaluation on the Application of Core International Labor Standards in Bangladesh** 227-247
Nazneen Akter

12. **Customers' Perception on Mobile Banking Operation in Bangladesh: Challenges and Strategies** 248-267
Dhiman Barua
Md. Siraz Meah

13. **Relationships among Workplace Friendship, Job Involvement and Job Satisfaction- An Empirical Study on the Private Universities in Bangladesh** 268-288
Soman Chakraborty

14. **Single Differential Cross Sections by Using Multiple Scattering Theory for Ionization of Metastable-2P State Hydrogen Atoms by Electrons at Intermediate Energies** 289-304
Amanul Hoque

15. **Impact of Work Stress and Job Satisfaction on Female Employees' Job Performance in the Private Commercial Banks of Chittagong** 305-325
Sanjida Nusrat Lovely
Rozina Akter

Establishing Linear Regression Equation Model in Kirkpatrick's Model for Assessing Training Effectiveness: An Empirical Study on Private Commercial Banks of Bangladesh

Mohd. Kamal Uddin *

Abstract

Kirkpatrick (1998) pointed out an evaluation process comprising four phases for assessing training effectiveness. The sequence of the four levels is Emotional Reaction, Knowledge Learnt, Behavioral Changes and Result (organizational outcomes) respectively. This paper aims to analyze the effect of the four measuring variables on training effectiveness of private commercial bank executives whom some sorts of trainings are offered. An initiative is taken to formulate a regression equation through quantifying the variables along with respective coefficients explored from an empirical study on 110 executives of private commercial banks located in Bangladesh. The derived regression model identified that the three level processes like Emotional Reaction, Behavioral Changes and Result have significant impact on assessing Training Effectiveness but Learning has been found insignificant. It is found from the correlation analysis that the four evaluating factors of training effectiveness as Kirkpatrick (1998) narrated in his model are not negatively correlated with the dependent variable. The questionnaire was designed with some questions to fulfill the research requirements and involves a combination of both the open and close ended questions. The information gathered from different sources was represented using tabular diagrams and interpreted meaningfully. Finally, the study has developed a conclusion as well as recommendations for the betterment of the sector.

Key Words: Private Commercial Banks (PCBs), Training effectiveness, Kirkpatrick's evaluation model.

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1. Introduction

Banking sector is considered as the prime catalyst in the economic development of a country. Bangladesh being a third world country is often claimed to possess a poor banking system in terms of the quality of services rendered particularly by the public banks. In recent decades, Banking Industry of Bangladesh is becoming more competitive to generate more revenues and sustain longer. Hence, contemporary banks should initiate special competencies for credit recovery and risk management.

The objective and significance of this paper lies in identifying training as a vital issue because proper training is essential to develop knowledge and skills required to gain competency in order to manage change in an organization (Stewart, 1996; John and Cartada, 2002). Most of researches including Colombo and Stanca (2008), Sepulveda (2005) and Konings and Vanormelingen (2009) showed that training is a fundamental and effective instrument in successful accomplishment of the firm's goals and objectives, resulting in higher productivity. Formal training programs are an effective way of directly transferring the organizational goals and values to a whole group of people simultaneously (Shen, 2006). Bushart and Fretwell (1994) state that training increases level of job satisfaction, updates skills for doing a particular job and enhances commitment to their company. Training offers an opportunity for career advancement and employee satisfaction through better job performance and adapting capability to cope with changes (John and Cartada, 2002). Searching a unique method capable of training evaluation in all spheres is now a great challenge. Hence, there is an urgency to develop measurement techniques in this regard. There found several models and usable techniques for measuring training effectiveness in the literature. The model developed by Kirkpatrick (1998) in this context is most popular and acceptable.

Kirkpatrick's (1998) model consists of four levels pointing a basis for measuring training effectiveness.

The paper structurally begins with a brief literature on the effectiveness of training and Kirkpatrick's Evaluation Framework followed by objectives and rationale of the study. Research method comprises of data collection, model formulation, variables clarification and hypotheses specification. Finally, study findings and discussions are followed by concluding remarks.

2. Review of Literature

Although there seems an accelerating impacts of employee training on organizational productivity, there is still scarcity of adequate research based literature on HR Development issues in developing countries (Debrah & Ofori, 2006). It is notable that while developed countries of the world are conducting constant search for economics of training, initiatives in respect to it are rarely found in under-developed countries. Relevant studies (Harvey, 2002; Jackson, 2002 and Kraak, 2005) emphasized on HRM having a research gap on the aspects like impacts of training on incumbent performance. Such research conductions are expected to cover existing gap in the literature as well as identify a basis for in-depth review on training dimensions of HRM in the context of Bangladesh.

Executive training requires a fruitful evaluation to the view point of various dimensions, such as program itself, training content, employee behavior, desired effect whether or not it has. In short, training has to be assessed in terms of training transfer (Wickramasinghe, 2006). An assessment of employee and organizational requirements is to be done and then applied in choosing training methods and trainee executives

(Goldstein, 1991). Especially, executives will be offered training on the basis of the findings of their work assessment. Training should be result-oriented and systematic to be effective. Consequently, training must be viewed as a long term process, not just an infrequent and/or haphazard event (Tannenbaum & Yukl, 1992; Wexley & Latham, 1991). Evaluation refers to the impact of training at the three levels as individual, departmental and organizational levels (Willis, 1998). Surprisingly, it is true that there is no one best method of assessment, just like no best way of training employees. But some methods are technically practiced for the purpose of assessing training outcomes in organization. However, this may best be measured especially on the organizational performance for which trained employees are responsible.

Training evaluation refers to systematic collection, analysis, and synthesis of narrative and judgmental information required formulating effective training decisions regarding the selection, adoption, value, and modification of various instructional activities (Warner & DeSimone, 2009). Effectiveness should be measured to the view point of inherent objectives of the training program under the consideration. If an organization does not assess training, it finds no alternative to test the investment effects and resources can be wasted in improper ways (Foot & Hook, 1996). Effectiveness measuring facilitates a firm to know the feedback and efficient monitoring. Effectiveness findings indicate the causes of outcomes happened and provide instructions for improving employee training prescriptions (Alvarez, Salas & Garofano, 2004).

The Kirkpatrick four-levels approach to training evaluation is the most widely used training evaluation model among practitioners (e.g., Sugrue & Rivera 2005, Twitchell,

Holton & Trott, 2000), although it is not free from constructive criticisms. There found few empirical studies in the this century on designing updated evaluation system except several conceptual frameworks for guiding evaluation measures (Holton, 2005; Kraiger, 2002; Spitzer, 2005; Wang &Wilcox, 2006).

3. Kirkpatrick's Evaluation Model

The Kirkpatrick four-level evaluation model was theoretically framed in 1959 by Donald Kirkpatrick. It achieved wide acceptability as elementary approach to the evaluation of training effectiveness. It has helped focus training evaluation practice on outcomes (Newstrom, 1995). Kirpatrick's (1994) training evaluation framework incorporates four levels of training outcomes: reaction, learning, behavior, and results.

Figure: The Kirkpatrick four-level evaluation model
Source: Kirkpatrick (1994), Alliger and Janak (1989)

Level 1 - Reaction: Reaction refers to the trainees' mental perceptions on the trainings they undergone. It indicates trainee employees' range of liking of a training program.

Kirkpatrick mainly termed 'reaction' as how well trainees favored a particular training course. The drawback of assessing reaction level is that it cannot provide whether the program accomplish the goal beyond ensuring participant satisfaction (Warner & De Simone, 2009).

Level 2 - Learning evaluation: Learning identifies the extent to which trainees increase stock of relevant knowledge, modify attitudes and enhance skill from participating training program. No change in behavior can be expected unless one or more of these learning objectives has been accomplished (Kirkpatrick, 1994).

Level 3 - Behavior or transfer: This variable evaluates the degree to which knowledge and skill for performing a job gathered from the training are being applied in the relevant work. It means the act of transferring knowledge and skills to workplace by trainees. Training becomes ineffective while the skills and abilities acquired are not utilized to the work.

Level 4 - Results: Results refers to the end-outcomes that appear due to the trainees' taking participation in the training program (Kirkpatrick, 1994). Results may include the achievement of objectives, such as employee absenteeism and turnover reduction, cost minimization, productivity increase, and so on. Level - 4 assessment includes the following two indicators:

- **Impact:** What is the change in business metrics attributable to training?
- **ROI:** What is the return on the training investment (calculated by dividing the net dollar value of the benefit by the costs of training)?

4. Rationale of the Study

Employees of most organizations including banking sector, both private and public, feel constant pressure from top level management to prove their worth / value estimating the benefits gained from training over the cost maintained. The essence of quality service is being focused as it is the consequence of effective training. Training is required to meet performance standard / expectations. Concerned top level authority even demands to see tangible results as measured by increase in sales, margins, quality and productivity etc. Professional trainers are also expected to offer need based training with updated knowledge and information for assessing training programs at all levels concerned.

Training practitioners and researchers, in the context of banking industry of Bangladesh, have not yet extensively studied the empirical and simultaneous evaluation training effectiveness to the view point of executive trainees. This study is an attempt to fill this gap by analyzing the opinions and feedbacks of bank executives (respondents) who have gone through some sort of training programs in their service tenure.

5. Objectives of the Study

The current paper aims to examine the impact of Kirkpatrick's four distinct variables on evaluating the effectiveness of training on employee performance of the selected sample private commercial banks (PCBs) located in Bangladesh. Another objective of the paper is to formulate a regression equation model through quantifying the variables along with respective coefficients explored from the empirical study. The research also aims to study the degree of interrelationships among the variables resulting training

effectiveness. The study searches for a brief literature for clarifying the concept of training, its need assessment and the effectiveness to enhance employee service skill. Finally, the author puts forward some fruitful suggestions for enhancing training effectiveness in the banking sector.

6. Research Methods

6.1 Data Collection

The current study is an exploratory research in its ultimate nature as it tries to analyze Kirkpatrick's (1998) four level process of evaluating training effectiveness with a view to measuring the impact of those variables on post-training performance through gathering data from the private commercial bank employees who participated in training(s) in their service tenure. For the present study, ten enlisted banks along with a number of branches are chosen conveniently mainly from urban areas of Bangladesh. The samples of the study comprises of executives, managers of all levels who have participated job related training(s). For the study purpose, 110 respondents were contacted through a self-administered questionnaire for obtaining the information regarding the study purpose. The questionnaire comprises of 20 statements (5 questions for each of the four variables). The responses are rated in the 5-point Likert scale as '1' for 'very small extent', '2' for 'small extent', '3' for 'moderate extent', '4' for 'to a great extent' and '5' for 'very great extent'. Reliability scores of the instruments are found within acceptable levels.

6.2 Model Formulation

In order to validate Kirkpatrick's (1998) four level process of evaluating training effectiveness, a multiple linear regression model is proposed to establish the

relationship measuring the impact of those variables on training effectiveness in the context of private commercial banks of Bangladesh. The multiple linear regression models have been applied using SPSS. The regression model is formulated as follows:

$$\mathbf{TE_{it} = \beta_0 + \beta_1\ (ER) + \beta_2\ (L) + \beta_3\ (B) + \beta_4\ (R) + e_{it}}$$

Where $\boldsymbol{\beta_0}$ is constant and $\boldsymbol{\beta i}$ are the regression coefficient of the explanatory variables, and $\mathbf{e_{it}}$ is the residual error of regression.

6.3 Clarifying Dependent and Independent Variables

The Training Effectiveness (TE) of bank employees is considered as dependent variable in the equation model. The independent variables considered in the model are Emotional Reaction (ER), Knowledge Learnt or Learning (L), Behavioral Changes (B) and Impact on the organizations or Result (R).

6.4 Hypotheses Specification

Modeling multiple linear regressions between the Kirkpatrick's four levels and the training effectiveness requires some propositions to be proved or disproved. The following null hypotheses have been framed to attain the purpose:

$H_0$1: Emotional Reaction has no significant impact on evaluating PCBs employees' training effectiveness.

$H_0$2: Knowledge Learnt or Learning has no significant impact on determining PCBs employees' training effectiveness.

$H_0$3: Behavioral Changes have no significant impact on determining PCBs employees' training effectiveness.

$H_0$4: Organizational Impact or Result has no significant impact on measuring PCBs employees' training effectiveness.

7. Study Findings and Discussion

The results of the study are presented in the tabular form below followed by a meaningful discussion.

7.1 Data Analysis

Table-1: Mean Value and Standard Deviation of Training Effectiveness and Measuring Variables thereof

Variables	N	Min	Max	Mean	SD
ER	110	3.00	5.00	4.51	0.48
L	110	4.00	5.00	4.04	0.30
B	110	1.00	5.00	2.75	1.22
R	110	2.00	5.00	4.01	0.75
Total				3.84	
TE	110	3.00	5.00	4.28	0.49

Source: Author's Study, 2018

The emotional reaction (ER) is considered by the bank executives between 'moderate extent' to 'very great extent' and, on an average the bank executives agreed to a large extent. The study finds the emotional reaction having the mean value of 4.51 with a

standard deviation of 0.48, the largest mean value compared to all other variables in the study. The bank executives think that emotional reaction is the most important occurring factor due to training through which transfer of knowledge invariably takes place. Emotional reaction can be an important measuring variable for determining post-training effectiveness.

In the context of learning from training, the respondents commented 'to a large extent' positively (mean value 4.04 with a standard deviation of 0.30). The bank executives think that learning is the second major occurring factor due to training that enhances the skill level for rendering quality service.

In the context of post training behavioral changes of the trainee employees, the responses of the sample bank executives diverse from 'very small extent' to 'very great extent' as the standard deviation stands for 1.22, largest deviation value in compared to that of all other variables. On an average, the respondents' expression is less than moderate extent (mean value 2.75) for treating the said variable as a determinant of evaluating training effectiveness.

The result (R) i.e., organization's post training outcomes hold an affirmative position as a measuring variable for training effectiveness between 'small extent' to 'very great extent'. On an average the bank executives (sample respondents of the study) agreed to large extent (mean value 4.01 with a standard deviation of 0.75) that banking performance (organizational result) improves while they are offered relevant training by the organization.

The average value 3.84 indicates that the respondents of the present study expressed to a large extent with the Kirkpatrick's four level process for assessing training effectiveness. The mean value of training effectiveness is 4.28 with a standard deviation of 0.49 through which it can be generalized that the executive respondents opined in favor of the stated measuring variables to be the adequate determinants for assessing training effectiveness and uphold the justification and validation of Kirkpatrick's four level model of evaluation.

7.2 Correlation Analysis of the Results

Table-2: Correlation matrix and descriptive statistics for all Training outcome variables and Training Effectiveness

	TE	**ER**	**L**	**B**	**R**
TE	1.00				
ER	0.322*	1.00			
L	0.089	-0.048	1.00		
B	0.691*	0.088	0.272*	1.00	
R	0.094	-0.019	0.041	0.359*	1.00

* Significant at 5% level
Source: Author's Study, 2018

Simple correlation matrix among the factors having impact on the dependent variable is developed for the purpose of determining the existence of multicolinearity problem. Hence, the correlation matrix is shown in the Table - 2. Cooper and Schindler (2003) argued that a multicolinearity problem remains when correlation / values scores are 0.8 or more.

According to the Table - 2, it can be inferred that none of the variables in the study have no high scores of correlation above the standard rule of thumb 80% indicating the presence of multicolinearlity.

It is found from the correlation analysis that the four evaluating factors of training effectiveness as Kirkpatrick (1998) narrated in his model are not negatively correlated with the dependent variable. Actually, the results of the correlation matrix comply with Kirkpatrick's view and the analysis is hence a proven initiative of the model stated in the literature. Inference can be drawn from the findings of the study that Emotional Reaction, Knowledge learnt, Behavioral changes and Result (Impact on the organizations) are positively correlated with the Training Effectiveness.

It is found in the table that the inter-relationships among the independent variables are also positive except in the case of emotional reaction with learning and organizational result. The two inverse relations are contradictory to the literature available but convey the uniqueness of the present study.

7.3 Multiple Regression Analysis of the Data

Table-3: Multiple Regression Analysis

Variables	**Constant Values**	**ER**	**L**	**B**	**R**
βi	0.688* (0.326)	0.225* (0.022)	-0.138 (0.058)	0.910* (0.000)	0.522* (0.004)
t-value	0.965	2.725	-1.848	7.656	2.701
R^2	0.721	Adjusted Value of R^2 = 0.557			
F-test	17.14	Durban Watson Value = 2.322			

*Significant at 5% level, **βi** is a coefficient effect, considered as the predictor of each of the variable of the study.
Source: Author's Study, 2018

The findings of the study resulting from the computation of regression analysis are briefly explained as follows:

- The adjusted value of R^2 describes that 55.7% variability in the training outcome effectiveness can be explained by the independent variables thereof.

- The Durban Watson test value 2.322 represents the absence of no serial correlation among the variables.

- The F-Test value is 17.14 and p-value is less than 5% for the data variables which represents the very well fit of regression model. Hence, the null hypothesis (Ho: There is no significant impact of stated explanatory variables on dependent variable) is not accepted.

- The regression analysis of the data states that only knowledge learnt / learning has no statistically significant impact on determining bank employees' training effectiveness at 5% level of significance.

- The regression coefficients of the other independent variables i.e., emotional reaction, behavioral changes and result are statistically significant at 5% level of significance. These three variables have significant influence on determining bank employees' training outcome effectiveness.

7.4 Regression Equation Formulation

The study findings through regression analysis are hereby portrayed by the following regression equation based on regression coefficients:

$$\mathbf{TE_{it} = 0.688 + 0.225\ ER - 0.138\ L + 0.910\ B + 0.522\ R}$$

- The $\boldsymbol{\beta_1}$ is 22.5%, t-value is 2.725 which is less than p-value at 5% level of significance. Thus H_{01} is rejected. It can be concluded that Emotional Reaction (ER) has significant impact on Training Effectiveness (TE) measurement of the sample trainee respondents in the private banking sector. Any kind of motivational training offered to the employees has an emotional consequence on their mindset full of positive reinforcement toward their work.
- The $\boldsymbol{\beta_2}$ coefficient estimates -13.8% influence of knowledge learnt (L) on Training Effectiveness. But this is not significant at 0.05 level. The t-value appears as -1.848, greater than p-value. So, H_{02} is accepted and inference can be drawn that the Learning has no significant impact on Training Effectiveness.
- In the assessment of training effectiveness, any organization emphasizes on the post training behavioral changes of the employees whom trainings are offered. In this paper, Behavioral changes have highly positive correlation with the Training effectiveness. The $\boldsymbol{\beta}3$ estimates 91% influence on the Training effectiveness, t-value appears as 7.656 and p-value is less at 0.05 significance level, so, H_{03} cannot be accepted. Inference can be made that the employee behavioral change has significant impact on determining Training Effectiveness.

- The regression coefficient β_4 which measures that Result / Organizational outcome has 52.2% influences on Training Effectiveness of sample respondents. The t-value appears as 2.701 and p-value is less at 0.05 level. So, H_{04} cannot be accepted and it is inferred that the organizational result has significant impact on evaluating Training Effectiveness. Organizational productivity and customer satisfaction are both the elements of organizational results or outcomes. So, accomplishing stated objectives through attaining end result is the indicator of employees' training effectiveness.

Based on the above equation, inference can also be drawn from the study that knowledge learnt (L) has negative and insignificant influence on measuring training effectiveness (TE). Actually, banks emphasize on need based learning while designing employee training contents and formal learning is as far as excluded. Service rendering skills are enhanced through executive training.

8. Conclusion and Recommendation

The results of the findings indicate that post-training outcomes have significant impact on evaluating training effectiveness that affects employees' individual performance and organizational productivity. Moreover these factors are positively correlated with the training effectiveness stating that effort to ensure should be taken so that bankers' service rendering skills are fully utilized in an adequate and timely manner.

This recommends that the authority of both public and private commercial banks in Bangladesh should emphasize training effectiveness assessment on a priority basis to adapt any changes in the service rendering strategies. Management should establish

baseline performance metrics on the basis of training needs assessment. That is, "What measurement is used to identify the gap?" Managers should prepare content and bring changes to it time to time on the basis of feedback arisen from the evaluation process. Organizations should also allocate a significant percentage of training budgets to ensure continuously and timely training conduction.

The study findings are expected to enrich the literature delivering an interesting and fruitful contribution to academic researchers and corporate professionals in the banking sectors of Bangladesh.

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Evaluation of Executives' Demographic Factors Impacting the Training Effectiveness through Establishing Multiple Regression Model: An Empirical Study on the Private Commercial Banks of Bangladesh

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Abstract

In the modern age of privatization, business organizations including banking sector, mainly private-owned, executives are facing constant pressure to justify their existence by proving their worth. The necessity of employee efficiency and their skill development has become universally accepted and that it depends on proper training. Banking industry of Bangladesh is lacking extensive empirical study on simultaneous evaluation of training effectiveness to the view point of bank executives' demographic characteristics. The prime objective of this research is to examine as well as evaluate the impact of executives' demographic factors on training effectiveness of private sector bank executives whom some sorts of trainings are offered. An initiative is taken to formulate a model portraying regression equation through quantifying the demographic variables along with respective coefficients explored from an empirical study on 92 executives of private banks located in Bangladesh. It also investigates a brief literature for clarifying the concept of training effectiveness through trainees' demographics. For the purpose of data analysis, this research uses frequency and percentage calculation; mean score distribution, correlation matrix, multiple regression analysis and ANOVA test as statistical tools. Finally, implications of the study are explained and directions for future researches are forwarded for the betterment of the sector. The findings of this study are expected to create an awareness of the extent of demographic phenomena and provide a useful contribution adding a new dimension of HRM-issues to academic research and professionals in the banking sector of Bangladesh.

Key Words: Demographic Variables, Training Effectiveness, Private Commercial Banks (PCBs).

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1. INTRODUCTION

Bangladesh being a developing country is often claimed of having an under developed banking system, particularly in terms of the customer services rendered by the state owned banks. However, Private Commercial Banks (PCB) achieved overwhelming success in terms of number and diversity of rendering quality banking service in the context of individual as well as national perspectives in the recent decades and, consequently, created a larger field of employment attracting potential youths than ever before. This economically sensitive sector is calling for updated and broader banking skills and abilities for survival and growth, which ultimately requires effective training to the executives. Training and development is defined as the efforts undertaken to improve knowledge, skills and abilities of current and forthcoming working peoples (Aswathappa, 2008). Effectiveness refers to the ability to generate a desired outcome. An effective training program ultimately results in producing predetermined target measurable in terms of standard set in some context. Organizations that are formed to produce revenues for the owners, rendering quality service to the target clients and beneficiaries, must invest in the training of its employees (Evans, 1999). Training evaluation is defined as the systematic collection, analysis, and synthesis of descriptive and judgmental information necessary to make effective training decisions related to the selection, adoption, value, and modification of various instructional activities (Warner & DeSimone, 2009).

Evidence found in the literature available states that employees' demographic issues are significantly affecting the workforce and in the recent time it emerges as a concern for top management. Therefore, It bears an essence for concerned managing authority to examine the phenomenon and variables that identify demographic diversity in the workforce, job characteristics, job environment, education, and occupation and their

influence on training effectiveness. The effectiveness of training program is determined not only by the successful acquisition of critical knowledge but also the ability to effectively transfer that knowledge to the performance environment (Alkesander et al., 2005). Training effectiveness can also be a function of trainee characteristics, training design and contextual factors (Scaduto et. al., 2008). This paper will survey on the demographic variables of the trainee executives serving at the commercial banks whether having a functional relationship to measure the effectiveness of skill enhancing training programs they appeared in their service life.

2. LITERATURE REVIEW

An extensive study of different internationally recognized and peer reviewed journals was conducted on published materials found available in the libraries and digital materials uploaded in the internet. The questions of how people react to training have received continued attention in the literature. Although there has been limited number of empirical researches in the current time on designing and validating training evaluation measures, there have been several conceptual contributions to frameworks guiding evaluation decisions (Holton, 2005; Kraiger, 2002; Spitzer, 2005 and Wang &Wilcox, 2006).

Schmidt (2009) conducted a research on employee demographics and job training satisfaction with a sample of 301 customers and technical service executives in nine U.S and Canadian companies. He found significant relationship between job training satisfaction and employees' service duration but no significant relationship with other variables namely, respondents' formal academic qualification, age, gender and race or ethnicity.

Kate et al., (2009) studied on 310 technicians in China with a view to examining effectiveness of training and development and found that employee perceptions regarding the worth of training have differed by age, gender and job post they hold in the workplace.

Petty et al., (2007) conducted a study on the impact of employees' work related experience. His study findings indicated that work experience had a significant impact on trainees' perception toward supervisor support, company support, colleague support, and motivation. Ibrahim (2004) had an investigation on some of the demographic variables like sex, national identity, academic background and mentor. His study findings indicated that the level of academic achievement did not affect trainees to acquire the skill based knowledge from training programs. Freeman (2009) found that level of education of the employees neither did nor influence the trainees' self efficacy. In some studies, it was revealed that 'age' was an important factor. Old age employees are more disciplined and better educated. Judy and D'Amico (1997) found that the average age is increasing and people are living longer which results in the age diversity of working people turning a challenge for the corporate sector to face. The demographic diversity in age of the workforce appears as significant indicator of training effectiveness. The workforce will be older and more culturally diverse than at any time in the past 40 years (Noe, 2008). More recent models state that service length of an employee is explicitly the result of the interaction of dynamic flows across both jobs and workers in the economy (Davis & Haltiwanger, 1990; Burgess et al., 1999 and 2001). Employees' gender differences have a far reaching impact on supply of and demand for labor market as work organizations and labor markets are clearly classified according to gender (Alvesson & Billing, 1997). On the other hand, Chimote (2010)

found in his research that age and gender had no impact on the trainees' perception toward reaction, learning, behavior, and outcome in judging the efficacy of training program. Chang (1997) also opined that age and gender had no effect on attitude factor.

A number of studies validated gender differences as an affecting variable on training performance. Gibson (1995) stated that culture and gender significantly affects the degree of emphasis placed on certain leadership behaviors and styles. Academic qualification seems to be a significant factor in the development of efficacy (Forlin, 2010). A study by Clark et al., (1996) is proven evidence clarifying that expectations are affected by a worker's age diversity, academic achievement and profession itself. Tharenou (1995) found that eagerness to achieve training was forecasted more by incumbents' individual demographics, like gender differences, age ranges, individual career strategies, work related issues of management and profession, than by perceived organizational predictors of training policies and promotion. Dimitrov (1999) pointed that gender variances in innovative scientific achievement was independent of ethnicity. Long et al., (1999) conducted a study to examine differences in the incidence and volume of enterprise-based education and training between categories of various characteristics of workers and enterprises. They defined worker characteristics comprised of workers' age, sex, ethnicity, education, ability, motivation and tenure.

3. RESEARCH GAP EXPLORED

Finding comparatively a smaller number of researches concerning the demographic variables impacting training effectiveness, the author of this paper explores a significant research gap which necessitates the conduction of the study. In the context of Bangladesh, no large-scale studies or articles were found that evaluated the training effectiveness on the basis of trainees' demographic issues highlighting financial institutions like PCBs of Bangladesh. Although, in the advanced world a notable number of researches were conducted on specific dimensions related to the issue in some other sectors, banking sector remains maiden and away from in-depth research in the dimensions of employees' demographic factors to the view point of its human resources on which present paper focuses.

4. RATIONALE OF THE STUDY

In most business organizations including banking sector, mainly private-owned, executives are facing constant pressure to prove their worth at work. Upper level management wants to see tangible improvements to be evaluated by client hunting – both the depositors and loners, rendering quality service, heightened morale, low turnover, safety records, profits, and share prices and other matters concerning to the board of directors and shareholders. The necessity of employee efficiency and their skill development has become universally accepted and that it depends on proper training. Training should be deemed rationale only when the benefits of training outweighs the cost incurred behind it, when trainee executives show greater excellence than those who are not trained. If training offered to the employees is not assessed, the expenditure incurred for it cannot be compared whether it outweighs or under weighs the gains and organizational resources might be wasted in improper deployment (Foot

& Hook, 1996). Without appropriate valuation of training effectiveness, a service rendering firm has no alternative way to know whether expenditure is being made wisely (Grove & Ostroff, 1991). Academicians, professionals and expert training practitioners, in the context of banking industry of Bangladesh, have not yet taken an extensive empirical study on simultaneous evaluation of training effectiveness to the view point of bank executives' demographic characteristics. The present study is an initiative to cover this gap by describing information and feedbacks gathered from bank executives (respondents) who have gone through some sort of training programs in their service tenure. The rationale of present research lies in the implications of estimated multiple regression model identified thereof generally in the context of HRM policies to improve employee productivity and particularly in enhancing executive training effectiveness in service rendering organizations like PCBs.

5. OBJECTIVES OF THE STUDY

In light of the above research topic followed by literature survey, the study aims to explore bank executives' demographic factors and examine the impact of those factors on the effectiveness of training on their performance in the PCBs of Bangladesh. Another objective of the paper is to formulate a model portraying a regression equation through quantifying the demographic variables along with respective coefficients explored from the first hand study. The research also aims to study the level of pair-wise interrelationships among the variables considered in this research. Finally, the author puts forward some suggestive measures for enhancing service rendering skill through training in the sector.

6. RESEARCH METHODOLOGY

6.1 Population and sample of the study

All employees working in the executive level in the PCBs of Bangladesh are considered as the population for the study. The sample includes some blindly chosen executives from the PCBs of various location mainly urban areas of Bangladesh as all banking services are concentrated in urban areas virtually and sample size comprises of 92 employees for the last three quarters of the financial year (January to September 2017).

6.2 Dependent and independent variables

This study highlights the impact of executives' demographic characteristics on the effectiveness of training offered in the PCBs of Bangladesh. Study finds out the variables that directly or indirectly affect the employee training outcomes. The variables that affect the training effectiveness are called independent variables whereas training effectiveness will be considered as dependent variable. Effect of five independent variables such as employees' age range (A), gender (G), marital status (M), academic qualifications (Q) and service tenure / experience (T) the executives earned in their profession.

6.3 Sampling technique

Simple random sampling technique has been employed for selecting sample executives while sample banks / branches are conveniently chosen in favor of the researcher considering time and expenses for the study. For the present study, ten enlisted PCBs along with a number of branches are chosen conveniently mainly from urban areas of

Bangladesh. The sample includes executives and managers at all levels in the hierarchy who have participated job related training(s).

6.4 Data Collection Tool

In designing the questionnaire, the first task is to identify the variables and domain of construct considering the information what should be best included and what should be carefully excluded from the survey. Hence a questionnaire is prepared based on earlier studies and expert opinion. The upper part of the questionnaire asked for personal profile of the respondents while the later part seeks item descriptions in close ended responses. The items contained in the questionnaire are based on Likert continuum treating 'very small extent' as '1' and 'very great extent' as '5'. Although 200 questionnaires were delivered, only 92 questionnaires were received. Thus the response rate was comparatively low although the banks were frequently visited. The secondary information has been collected from bank annual reports / publications available and Internet. Moreover, desk study on various published and unpublished materials was done.

6.5 Data Analysis Techniques

Both the descriptive and inferential statistics are considered for analyzing the information gathered. Inferential statistics is suitable in quantitative research (Chua, 2006) as well as for this study as it is trying to express respondents' opinion in numeric ranges to some extent. Correlation test identifies the strength of the relationship between two variables (Sekran, 2003). For the purpose of data analysis, this research uses frequency and percentage calculation; mean score distribution, correlation matrix, multiple regression analysis and ANOVA test as statistical tools. In this study, multiple regression is applied to observe the impact of demographic variables as independent

on the training effectiveness as dependent variable. ANOVA-test is done to find whether there exist significant variances within the respondents understudy toward demographic factors which indicate the executive training effectiveness.

6.6 Data Analysis Software

This study uses SPSS software of version-17 for analysis of data. After collecting the questionnaire from respondents, only fully filled up questionnaires are considered for putting into the software. Data are processed in the specific method and tests are done as mentioned in the study so that desired quantitative results through data view are found.

6.7 Hypotheses Formulation

Formulation of Multiple Linear Regressions Model for the training effectiveness basing executives' demographic variables requires some propositions to be proved or disproved. The following null hypotheses have been framed to attain the purpose:

$H_0$1: There is no significant impact of executives' age dimension on the effectiveness of executive training.

$H_0$2: There exists no significant impact of executives' sex dimension on executive training effectiveness.

$H_0$3: There is no significant impact of executives' marital condition on executive training effectiveness.

$H_0$4: There exists no significant impact of executives' tenure of service on the effectiveness of executive training.

$H_0$5: There is no significant impact of executives' academic qualifications on the effectiveness of executive training.

6.8 Model Formulation

In order to evaluate training outcomes, a multiple linear regression model is proposed to establish the relationship measuring the impact of executives' demographic variables on training effectiveness in the context of PCBs of Bangladesh. The multiple linear regression through SPSS version-17 is used. For the study purpose, a multiple regression model highlighting the demographic variables is anticipated as follows:

$$\mathbf{TEF_{it} = \beta_0 + \beta_1 (A) + \beta_2 (G) + \beta_3 (M) + \beta_4 (T) + \beta_5 (Q) + e_{it}}$$

In the regression equation above, $\boldsymbol{\beta_0}$ denotes a constant numeric value. **Bi** (i for 1, 2, 3, 4 and 5) refer to regression coefficients of respective independent demographics, and $\mathbf{e_{it}}$ stands for residual error.

7. DATA ANALYSIS AND FINDINGS

7.1 Personal Profile of the respondents

Only 92 questionnaires out of 200 delivered questionnaires were found completely filled up and returned (thus the response rate stands for 0.46). The first part of the questionnaire seeking the personal profile of the sample respondents includes relevant aspects comprising eight dimensions namely: respondents' range of age, sex differences, marital status, and educational qualification, position hold in the management level, national identity, and religious belief followed and the tenure they spent in the banking profession. The following table illustrates the profile of the sample respondents:

Table 1: Demographic data of the respondents

Characteristics	Frequency	Percentage %

01	Range of Respondents' Age (in Years):	21-30 31-40 41-50 Above 50	12 32 41 7	13.0 34.8 44.6 7.6
02	Educational Qualification:	Under graduate Graduate Post graduate	0 0 92	0.0 0.0 100.0
03	Professional Degrees like Chartered Accountancy / ICMA and so on	Awarded Not awarded	4 88	4.3 95.7
04	Respondents' Sex Identity:	Male Female	74 18	80.4 19.6
05	Marital Status:	Married Unmarried	84 8	91.3 8.7
06	Position in Management Hierarchy:	Senior Middle Junior	35 52 5	38.0 56.5 5.5
07	Service Tenure in banking profession(in Years):	Below 05 06-10 11-15 16-20 21& above	16 32 30 10 4	17.4 34.8 32.6 10.9 4.3
08	Number of trainings undergone	No training Less than 6 6 to 10 More than 10	0 66 18 8	0 71.7 19.6 8.7
09	Nationality	Bangladeshi Non-Bangladeshi	92 0	100 0
10	Religion	Muslims Hindus Buddhists Other	68 22 2 0	73.9 23.9 2.2 0

Source: Field study, 2017

Demographical data of the respondents showed that the age range of the 44.6% respondents were 41 to 50 years of old followed by 31 years to 40 years age group

(34.8%). All of the respondents in this study possess high level of academic background (post graduates - 100%). Only 4 executives were awarded with professional degrees as Chartered Accountancy or CMA. Majority of the bank executives were found male (80.4%) and married (91.3%). Most of the executives were designated with mid level management position (56.5%) followed by senior level management job (38%). Major portion of the respondents possess 6 to 10 years of banking job experience (34.8%) and Muslims by religion (73.9%) while all belong to Bangladeshi nationality by birth (100%). Out of 92 respondents, 71.7% have undergone less than 6 trainings of any type in their service time.

7.2 Analysis of Mean Score Distribution of Executives' Demographics and Training Effectiveness

Table-2: Assigning Numeric Value to the Range of Opinion

Range of Opinion	Numeric Value Assigned
Very Great Extent	5
Large Extent	4
Moderate Extent	3
Small Extent	2
Very Small Extent	1

Table-3: Mean along with Standard Deviation of Executives' Demographics and Training Effectiveness

	N	Min	Max	Mean	SD
Age (A)	92	3.00	5.00	4.01	0.85
Gender (G)	92	1.00	4.00	2.04	1.01
Marital Status (M)	92	1.00	4.00	2.48	1.18
Tenure of Service (T)	92	3.00	5.00	4.08	0.33
Qualification (Q)	92	3.00	5.00	4.25	0.75
Total				3.37	
Training Effectiveness (TEF)	92	3.00	5.00	4.25	0.85

Source: Field study, 2017

The academic qualification of a trainee (Q) is considered 'moderate extent' to 'very great extent' and, above all, the bank executives viewed this variable to a 'large extent'. Current study finds the academic qualification of a bank executive having the mean value of 4.25 with a standard deviation of 0.75, the largest mean value compared to all other variables in the study. The bank executives think that formal academic qualification is the most important influencing factor through which transfer of knowledge really occurs. Educational background can be an important measuring variable for determining post-training effectiveness.

In the context of service tenure (T), the respondents commented to a 'large extent' positively (mean value 4.08 with a standard deviation of 0.33). The bank executives think that service length of an employee is the second major influencing factor that enhances an employee's training effectiveness.

In the context of marital status of the trainees (M), the responses of the sample bank executives diverse from 'very small extent' to 'a large extent' as the standard deviation stands for 1.18, largest deviation value in compared to that of all other variables. On an average, the respondents' expression is less than moderate extent (mean value 2.48) for treating the said variable as a determinant of evaluating training effectiveness.

The 'age of a trainee' variable (A) hold an affirmative position for training effectiveness between 'moderate extent' and 'very great extent'. On average, sample bank executives of the study agreed to large extent (mean value 4.01 with a standard deviation of 0.85) that while they are offered relevant training by the organization, bankers' age dimension appears as another important factor resulting effective training.

In the context of 'gender' variable of the trainee employees (G), the responses of the sample bank executives diverse from 'very small extent' to 'a large extent'. On an average, the respondents' expression is less than moderate extent (mean value 2.04 with a standard deviation of 1.01) for treating the said variable as a determinant of evaluating training effectiveness.

The average value 3.37 indicates that the respondents of the present study expressed more than moderate extent with the five demographic variables for assessing training effectiveness. The mean value of training effectiveness is 4.25 with a standard deviation of 0.85 through which it can be generalized that the respondents opined in

favor of the stated demographic variables to be the adequate determinants for assessing training effectiveness and uphold the justification and validation of some prior research findings.

7.3 Analysis of Correlation Matrix Results

Table 4: Correlation Matrix for Bank Executives' Demographics and Training Effectiveness

Variables of the study	Training Effectiveness (TEF)	Respondents' Demographic Variables				
		Age (A)	Gender (G)	Marital Status (M)	Tenure of Service (T)	Qualification (Q)
Training Effectiveness(TEF)	1					
Age (A)	0.098	1				
Gender (G)	0.006	0.010	1			
Marital Status (M)	0.078	0.689	0.112	1		
Tenure of Service (T)	0.613	0.755	0.223	0.566	1	
Qualification (Q)	0.675	0.591	0.417	0.334	0.676	1

Source: Field study, 2017

In the Table-4, it is found that training effectiveness (TEF) has positive relation with the academic qualification (Q) of the bank executives (r = 0.675). Interpretation can be drawn thereof training outcome increases as executives' formal educational credentials heightens i.e., the higher qualification the bank employees possess, the better training based performance / results they deserve.

The table also states that executives' tenure of service (T) is positively correlated with the training effectiveness (TEF). This implies experienced employees exert more contribution if they are trained properly. The length of service provides an executive with an opportunity of gathering ins and outs of a job he or she entails and a chance to apply as the needed training is offered to him or her adequately. The findings also indicate that the more time or tenure an employee deserves in a banking service, the better they show training results. In the study of Adesola et al., (2013), similar findings and inferences were drawn and thereby conformed.

Respondents' age (A), gender (G) and marital status (M) have positive relationship with training effectiveness (calculating the value of r = 0.098, 0.006 & 0.078) which reveals age-old executives are more training-effective than the young employees. Gender and marital status of the respondents of this study also predict the training effectiveness.

7.4 Demographics' Pair-wise Correlation

It is found in the table that the pair-wise inter-relationships among the demographic factors / independent variables are also positive. Among the five factors, the interrelationship between age (A) and tenure of service (T) is the highest (r = 0.755) which is followed by the relationship between age (A) and marital status (M) (r = 0.689) and then link between tenure of service (T) and academic qualification (Q) (r = 0.676). Very lowest relationship exists between age (A) and gender (G) (r = 0.010) which is ignorable.

7.5 Multiple Regression Analysis of the Data

Table-5: Multiple Regression Analysis

Variables	Constant Values	Age (A)	Gender (G)	Marital Status (M)	Tenure of Service (T)	Qualification (Q)
βi	0.575* (0.332)	0.431* (0.032)	0.051* (0.048)	0.113* (0.041)	0.782* (0.000)	0.825* (0.000)
t-value	0.827	2.865	1.845	2.756	5.756	7.776
R^2	0.548			Adjusted Value of R^2 = 0.525		
F-test	18.152			Durban Watson Value = 2.271		

Source: Field study, 2017

*Significant at 5% level, **βi** is a coefficient effect, considered as the predictor of each of the variable of the study.

The findings of the study resulting from the computation of regression analysis are briefly explained as follows:

a. Value of adjusted R^2 is frequently used in the research of modern times. In this study, the adjusted value of R^2 is calculated as 0.525 which indicates 52.5% of the variance explained in the effectiveness of training that can be predicted by the combination of the independent variables stated in this research. The remaining 47.5% could be influenced by extraneous variables those are not included in the study.

b. The computed Durban Watson test figure of 2.271 denotes existence of co-linear relationship in the study demographic variables.

c. F-Test value is computed as 18.152 and p-value is smaller than 5% for study variables which represents a good fit of the assumed regression model.

d. Regression coefficients of the respondents' demographic variables i.e., age, sex, marital status, service length and formal educational qualification of the bank executives are statistically significant at 5% level of significance. These five demographics have significant influence on assessment of training outcomes / effectiveness.

7.6 Model Summary and ANOVA Findings

Table-6: Predictors of Training Effectiveness (TE) - Model Summary

Model	R-value	R^2	Adjusted R^2	Standard estimate error
1	0.740[a]	0.548	0.525	0.416
a. Predictors: (Constant), age, gender, marital status, tenure of service and academic qualification				

Source: Field study, 2017

The model summary is depicted in the above table. The model summary depicted in the Tble-6 in an association to ANOVA findings, depicted in the Table-7, represents the most possible combination of anticipated demographic variables of the study which uphold the association with the dependent variable – effectiveness of executive training. It can be inferred that the variance is greatly significant because F value is estimated as 18.152 and P as 0.000. Hence, the hypothesis (Ho: There is no significant impact of independent variables incorporated in the research on the dependent variable - executive training effectiveness) is rejected.

Table-7: ANOVA Result

Model		Sum of Squares	Degree of freedom	Mean Square	F	Critical values of F	Significance
1	**Regression**	11.980	5	2.396	18.152	For the 0.05 significance level: $\mathbf{F_{(5,86)} = 2.32}$ For the 0.01 significance level: $\mathbf{F_{(5,86)} = 3.24}$	0.000
	Residual	11.352	86	0.132			
	Total	23.332	91				

Source: Field study, 2017

7.7 Regression Equation Model Formation and Explanation

The research findings using multiple regression analysis are hereby formulated in regression model on the basis of regression coefficients:

$$\mathbf{TEF_{it} = 0.575 + 0.431A + 0.051G + 0.113M + 0.782T + 0.825Q}$$

a. β_1, the regression coefficient for the independent variable - Age is 43.1%, t-value is 2.865 smaller than p-value at 0.05 significance level. Hence, H_{01} is rejected. It can be concluded that Age dimension of the bank executives has significant impact on evaluation of training they appeared while working.

b. The very smallest coefficient value is found in the respondents' gender identity variable - β_2 that estimates only 5.1% influence on training effectiveness. The t-value is 1.845, below the p-value at 5% level of significance. So, H_{02} is rejected. Hence the sex identity can also be interestingly found significant (not highly but positive) in this study.

c. In the evaluation of training effectiveness, the coefficient of the respondents' marital status, $\beta 3$ estimates 11.3% impact on the training effectiveness, t-value is estimated as 2.756 and p-value is lower at 5% level of significance, thus H_{03} is not accepted and an interesting inference can be drawn that marital status of an employee has significant impact on their training effectiveness.

d. The regression coefficient β_4 is found second highest rank in the ascending order of independent variables which measures that service tenure / experience of bank executives has 78.2% influences on training effectiveness. In this regard, t-value is found as 5.756 and p-value stands for 0.000 at 5% level of significance, hence H_{04} is rejected which indicates the variable - service experience - highly significant.

e. Academic background of an employee has highly positive correlation with the training effectiveness and in this paper; the regression coefficient value of β_5 occupies the top most rank in the ascending order of independent variables. The β_5 estimates 82.5% influence on the training effectiveness. In this regard, t-value is estimated as 7.776 and the computed p-value is 0.000 at 5% level of significance, which denotes the rejection of the hypothesis - H_{05}. Inference can be made that the academic qualification of the bank executives has significant impact on evaluating training effectiveness.

8. LIMITATIONS AND DIRRECTIONS FOR FUTURE RESEARCH

The study merely emphasized on the demographic factors of the sample respondents ignoring numerous viable factors affecting training effectiveness. It considers only PCBs as the population for the study and takes narrow size of the sample; hence inferences reached by the study may not be entirely generalized. There remains lack of guidance, as very little study was conducted on this specific issue. The low response rate is another drawback. Because the executives are reluctant to provide information as banks maintain privacy and confidentiality. That is why; the sample is too small to achieve the precision. Rather, the sample size taken in the study is not methodologically justified due to lower response rate as that would represent the total population under the study. At last, why and how the bankers' demographics affect the training effectiveness remains quite unknown and unexplainable in the study. Questionnaire method itself is not free from drawbacks in some extent. Hence, observing method of employee behavior and case study can enable the future researches to gain more insight that typically is difficult to acquire through quantitative analysis. Although quantitative research was used in this study, it is believed that qualitative research would be beneficial in helping to enhance worth understanding of how personal matters are related to training measures. Only a handful number of demographics are examined in this paper. For generalizing the results and wide acceptability, other factors affecting influence of training effectiveness like personal, group and psychological dimensions may also be included in the future research. A study showing effective comparison between the public and private commercial banks may also be conducted. The author hopes for large initiatives to be taken incorporating greater samples, more other personality related psycho-items and the service sectors other than banking in the context of Bangladesh reflecting authenticity of the visible training outcomes.

9. CONCLUSION AND IMPLICATIONS OF THE STUDY

The study findings indicate that executives' demographic characteristics are quite a set of significant influencing factors for the post-training outcomes that affects employees' individual performance and organizational productivity. Respondents' formal

academic qualifications and service tenure are the two major and highly influencing factors. Moreover, these factors are positively correlated with the training effectiveness. Hence, efforts must be taken so that employees' skills are fully utilized through offering them proper and timely requisite training.

The research findings are expected to render a fruitful contribution to the researchers and corporate professionals in the PCBs of Bangladesh. This study explores the factors which are of interest to decision making authority and indicates a different dimension how an organization ensures the benefits of its cost effective training programs offered to the employees. The paper recognizes the relationship between trainees' demographic variables and productivity of expensive training and is expected to be fruitful for the cost conscious top level management. Trainee executives' individual differences and demographic factors should be emphasized while planning and designing training and development programs. This paper highly recommends that it is important to emphasize on the job tenure / experience of the incumbents, their age stage of life, their uniqueness i.e., individualism, self motivation, skills, cognitive ability, self-efficacy, attitude and values, their work ethic and even their sex differences or / and marital status. The study may open a different horizon for broadening and modernizing the traditional training assessment methods. Understanding the affirmative effects of demographics may help the service sector like banking look into the need of paying attention to the facts of employees' personality and demographic issues for ensuring better training outcomes. Managers should make changes to the training program based on feedback from the evaluation process. Organizations should also allocate a significant percentage of training budgets to ensure continuously and timely training conduction. Training should be designed and offered to cover employees' deficiency in performing tasks, and employees should perceive that they

are being treated fairly and equitably with regard to the training they receive (Schmidt, 2009). The paper is also expected to create an awareness of the extent of demographic phenomenon among the bank employees as well as the decision making authority of bank organization. The author thinks this research as an initiative to offer implications in this regard.

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Application of Non-Linear Optimization Models in Water Resources Systems through Sustainable Management

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Abstract

Non-linear optimization models are techniques that are extensively used in the planning and management sciences of water resources systems. In this paper, we propose a new perspective for the optimization of water resource allocation through sustainable management. In order to conduct an accurate and feasible program, we randomly consider a river problem, and our proposed optimization models are connected to three water consuming firms. In these problems, we are able to find the water allocations, the production levels, and the maximum total net benefits. The methods that we used are classical constrained optimization using Lagrange multipliers, Karush-Kuhn-Tucker (KKT) conditions and non-linear programming techniques. Moreover, we discuss our proposed approaches in a greater detail to form the optimization models connecting with some analytical test problems.

Key Words: Non-linear optimization models, Sustainable management, Water consuming firms, Total net benefits, Lagrange multipliers, Karush-Kuhn-Tucker conditions.

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1. Introduction

In recent years, extensively grown in rapid urbanization, industrialization, population growth, and the increasing competition for scarce natural resources we have to face water management challenges especially for river water. Water resources scarcity has become one of the determinants which restrict social and economic sustainable development of any country. Water resources systems (WRS) are essential components of water supply systems among the main infrastructure assets of a country through sustainability assessment. As well known, to represent water resource systems through sustainable management, we need not to extend the analysis to a sufficiently wide time horizon that includes account the variability and water demands. The use of optimization approaches and techniques in WRS that have evolved towards models and in this case sustainability plays a vital role. Optimization methods provide a unifying mathematical technique that occurs naturally in this world. Nonlinear optimization is one of them [1,2,3] . Many nonlinear optimization models and techniques have been used to study the engineering applications [4,5,6,7,8,9] and management sciences [10,11,12,13] . It is connecting with these different kinds of models developed and reported in the scientific literature that has been produced to provide including simulation models [14,15] , dynamic programming [16,17] , linear programming models [18,19] , hierarchical optimization models [20] , non-linear programming models [21,22] and many others. The present study consist of a model which employed basically includes two aspects. One is the objective function, which is designed to allocate water to maximize the economic, social and ecological net benefit of different water allocations as well as the water consumption sector. The second is constraint equation which is designed to set up the constraints according to the NLP problem (P). In this work, we consider the problem statement (P) in which the objective function is non-linear while the constraint function may be either linear or non-linear or both. In this paper, we used the problem (P) to form a non-linear optimization models and applied it to WRS, which we desired. It is done in such a way that the optimal allocation of river water is ensured with suitable management. In this connection we form the Lagrangian function using the objective function and constraints with appropriate Lagrangian multipliers. This

objective function optimizes the net benefits or costs. So, this is very prevalent technique from the view of WRS management and regional sustainable development.

2. Problem statement of general NLP problem

In this section, we consider the problem according to the classical optimization theory, in this case NLP are of two types. They are constrained and unconstrained NLP. This classification is based on the objective function and constraints (linear, nonlinear, and convex), the number of variables (large and small), the smoothness of functions (differentiable and no differentiable) and so on.

In this study, we concentrate on the following constrained nonlinear programming (NLP) problem:

(P) Minimize $z = \varphi(x)$.

Subject to, $g_i(x) = 0, (i \in I)$,

$h_j(x) \le 0, (j \in J)$.

Where $I = \{1,2,.....m\}$ and $J = \{1,2,.....n\}$

The point (or vector) $\bar{x} \in X \subset S$ may lie in the set.

$$X = \{\bar{x} \in R^n \mid g_i(\bar{x}) = 0, h_j(\bar{x}) \le 0, i \in I, j \in J\}.$$

And where $\varphi : R^n \to R$, $g : R^n \to R^m$ and $h : R^n \to R^n$ are given functions of twice continuously differentiable then the set S is called the set of feasible region, $\bar{x}$ is the minimum solution and the minimum value is $f(\bar{x})$.

Example 2.1: Consider the following three dimensional NLP problems:

Minimize $z = \varphi(x) = 2x_1^2 + x_2^2 + 2x_3^2 + x_1x_3 - x_1x_2 + x_1 + 2x_3$

Subject to, $h_1(x) = x_1^2 + x_2^2 - x_3 \le 0$

$$h_2(x) = x_1 + x_2 + 2x_3 \leq 16$$

$$h_3(x) = x_1 + x_2 \geq 3$$

The feasible region of the above problem is illustrated in figure. The KKT optimality conditions[1] are satisfied at the optimal point $x^* = (x_1, x_2, x_3) = (1,2,5)^T$ .We can easily verify that this point is also a KKT point.

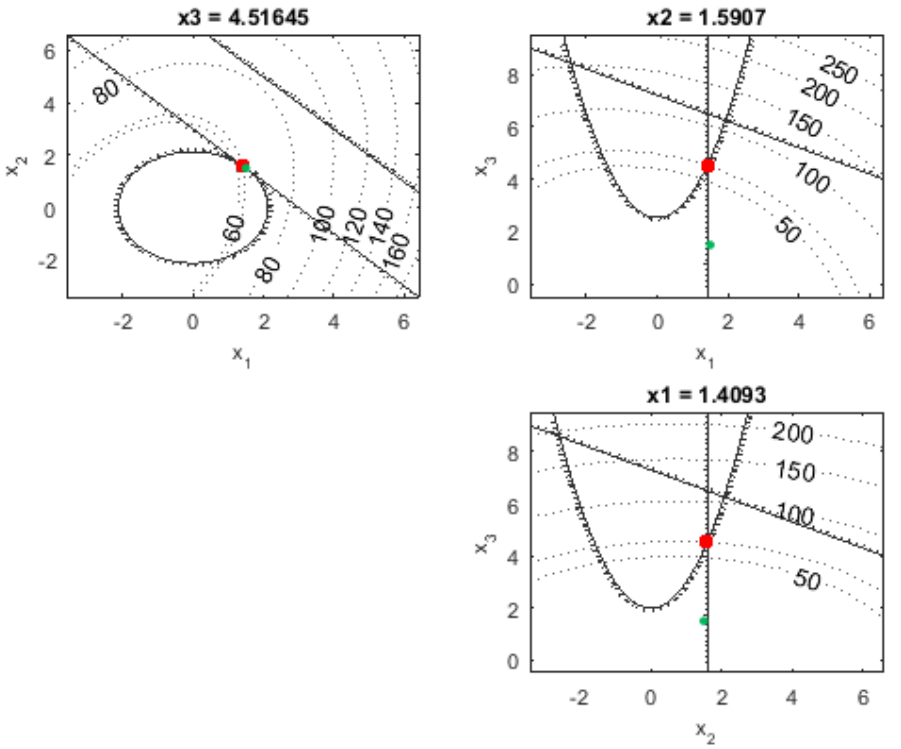

Figure 2.1: Illustration of KKT conditions and the optimum solution is obtained by using MATLAB.

3. Materials and Methods

We discuss the nonlinear optimization model which is also called mathematical programming. This technique includes different types of term such as Lagrange multipliers, linear and non-linear programming (NLP), dynamic programming (DP), quadratic programming (QP), fractional programming and geometrical programming etc. the applicability of each of this method as well as other constrained optimization procedures is much depends on the models of the mathematical structure. We introduce an illustration of the application of the most commonly used constrained optimization techniques in water resources planning and management. These include the classical constrained optimization using Lagrange multipliers and non-linear programming (P).

For this progress, we consider a river problem from which diversions are made to three water consuming firms that belong to the same corporation or places. Each firm produces a product and water is needed in the process of making that product, which is called the critical resources for the said corporation. Let the index $k = 1,2$ and 3 denotes the water allocations by x_k. We also consider that, the problem is to determine the allocations x_k of water to each of three firms $k = (1,2,3)$ that maximizes the total net benefits (TNB), $\sum_k N\beta_k(x_k)$, obtained from all the three firms. The total amount of water available is constrained to a quantity of M.

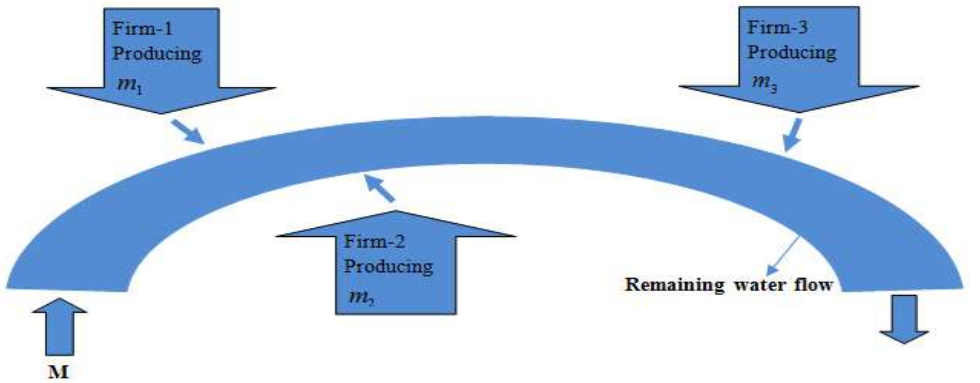

Figure 3.1: Firms consuming water from three allocations and it depends on the amount of water availability M, in river R.

Now let us consider, the TNB be $N\beta_k(x_k)$ can be defined as:

$$\begin{aligned} N\beta_1(x_1) &= -x_1^2 + 6x_1 \\ N\beta_2(x_2) &= -1.5x_2^2 + 7x_2 \\ N\beta_3(x_3) &= -0.5x_3^2 + 8x_3 \end{aligned} \tag{3.1}$$

The above three functions are non-convex (concave) functions which are decreasing marginal net benefits with increasing allocations. So we get the best distribution for the above three firms, which are 3, 2.33 and 8 respectively. Since the derivative of net benefits will be zero i.e. $\frac{dN\beta(x_k)}{dx_k} = 0$. The total amount of water desired by all firms is the sum of each firm's desired allocation, or 13.33 flow units.

Using an incremental-hill-climbing method[23], we get the total available flow M divides into increments and allocate each additional increase to get the maximum net benefits from that incremental amount of water. This procedure works because the functions are concave. In this method, we take each incremental flow ΔM to the use that yields the most significant additional (marginal) net benefit. An allocation is

optimal for any total flow M when the marginal net benefits from each nonzero distribution are equal, or close to any size of the increment ΔM .Assume that the benefit is $\beta_k(x_k)$ and the amount of product produced, m_k, by each firm k is independent on the amount of water, x_k, allocated to it. The production function are typically concave as x_k increases the slope, $\frac{dm_k(x_k)}{dx_k}$, of the production function, $m_k(x_k)$, decreases.

For this example, consider the production functions for the three water-using firms are:

$$\begin{aligned} m_1 &= 0.4(x_1)^{0.9} \\ m_2 &= 0.5(x_2)^{0.8} \\ m_3 &= 0.6(x_3)^{0.7} \end{aligned} \tag{3.2}$$

Similarly the associated cost of production can be expressed by the following convex functions:

$$\begin{aligned} c_1 &= 3(m_1)^{1.3} \\ c_2 &= 5(m_2)^{1.2} \\ c_3 &= 6(m_3)^{1.15} \end{aligned} \tag{3.3}$$

The optimization problem is to find the water allocations, the production levels and the unit prices that together maximize the total net benefit which is obtained from all three firms. The water allocations plus the amount that must remain in the river R , cannot exceed the total amount of water M available.

The model:

Maximize net benefit

Subject to, definitional constraints:

Net benefit=Total return-Total cost

Total return= $(12 - m_1)m_1 + (20 - 1.5m_2)m_2 + (28 - 2.5m_3)m_3$

Total cost= $3(m_1)^{1.30} + 5(m_2)^{1.20} + 6(m_3)^{1.15}$

The production functions defining the relationship between water allocations x_k and production m_k :

$$\begin{aligned} m_1 &\le 0.4(x_1)^{0.9} \\ m_2 &\le 0.5(x_2)^{0.8} \\ m_3 &\le 0.6(x_3)^{0.7} \end{aligned} \tag{3.4}$$

And water allocation restriction: $R + x_1 + x_2 + x_3 \le M$

(3.5)

One can solve the above model for every value of m_k that maximizes the total benefits, assuming water is not a limiting constraint. From the above mentioned equation we obtain the following result:

Total Net benefit:

TNB

$$= \left[(12 - m_1)m_1 + (20 - 1.5m_2)m_2 + (28 - 2.5m_3)m_3\right] - \left[3(m_1)^{1.30} + 5(m_2)^{1.20} + 6(m_3)^{1.15}\right]$$

Then we obviously get from the above equation and can deduce the following derivatives:

$$\frac{\partial(N\beta_k)}{\partial m_1} = 0 = 12 - 2m_1 - 1.3(3)(m_1)^{0.3}$$
$$\frac{\partial(N\beta_k)}{\partial m_2} = 0 = 20 - 3m_2 - 1.2(5)(m_2)^{0.2}$$
$$\frac{\partial(N\beta_k)}{\partial m_3} = 0 = 28 = 5m_3 - 1.15(6)(m_3)^{0.15}$$

From the above simultaneous equations, we obviously obtain $m_1 = 3.2$, $m_2 = 4$ and $m_3 = 3.9$ to be sold for unit price of 8.77, 13.96 and 18.23 respectively, for maximum net revenue of 155.75 units. And this would require water allocations $x_1 = 10.2$, $x_2 = 13.6$ and $x_3 = 14.5$, which give the total flow of 38.3 units.

Now if the available water supplies are less than the desired 38.3 plus the required stream flow R then equation (3.4) and (3.5) need to be added to find the following result. These can rewrite as equalities as they will treated as binding constraints. So writing the Lagrangian form of the objective function as follows:

$$L = \left[(12 - m_1)m_1 + (20 - 1.5m_2)m_2 + (28 - 2.5m_3)m_3\right] \tag{3.6}$$
$$-\left[3(m_1)^{1.30} + 5(m_2)^{1.20} + 6(m_3)^{1.15}\right] - \lambda_1\left[m_1 - 0.4(x_1)^{0.9}\right]$$
$$-\lambda_2\left[m_2 - 0.5(x_2)^{0.8}\right] - \lambda_3\left[m_3 - 0.6(x_3)^{0.7}\right] - \lambda_4\left[R + x_1 + x_2 + x_3 - M\right]$$

Here we observe that the unknown variables λ_k are called Lagrangian multipliers of the constraints k and the value of each λ_k indicate the marginal values of the original objective function.

Now if we differentiating (3.6) with respect to each of ten unknowns and setting to zero, we will be able to obtain ten simultaneous equations for the above proposed problems. These equations are the necessary conditions for an optimal point and they can be solved to find the values of ten unknowns as usual.

Table 3.1: Finding the optimal allocations vs TNB

Water available	(Allocations to firms) x_k			(Product productions) m_k			Lagrange multipliers, λ_k (Marginal net benefits)			
	1	2	3	1	2	3				
$M-R$	x_1	x_2	x_3	m_1	m_2	m_3	λ_1	λ_2	λ_3	λ_4
10	1.2	3.7	5.1	0.46	1.44	1.88	8.0	9.2	11.0	2.8
20	4.2	7.3	8.5	1.46	2.45	2.68	4.7	5.5	6.6	1.5
30	7.5	10.7	11.7	2.46	3.34	3.37	2.0	2.3	2.9	0.6
38	10.1	13.5	14.4	3.20	4.00	3.89	0.1	0.1	0.1	0.0
38.3	10.2	13.6	14.5	3.22	4.02	3.91	0	0	0	0

In this case, we conclude that the multipliers λ_k represent the changes in the TNB value of the objective function (3.6) per unit changes in the product m_k produced. But the λ_4 represents the changes in the TNB per unit changes in the water available for allocation $M-R$. Since non-negativity conditions are imposed, we need to check the boundary solution to get the constraints binding for inequality case.

4. Conclusions

This study addresses that the application of the NLP problem should be optimized from the view of water resource allocation in a river through sustainable management. This

NLP problem described with an objective function. The constraints are formed by using the production functions (m_k) and their relationship with water allocations (x_k). Inequalities (3.4) and (3.5) represent the constraints respectively and (3.6) is the objective function, which gives the optimal solutions for the optimal water allocation. We can easily guess the result from the above table and get the TNV value so that the objective function gives the net benefit. This NLP model can be extended to more water allocations. We can also implement this model, considering multi-objective NLP problems. In that case, we have to impose various constraints related to the economic, social and ecological net benefits using the conditions of water resources utilization, i.e. optimal water resource allocations.

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Appendix: MATLAB Procedure of the test problem

```
% Objective
fun = @(x) 2*x(1)^2+x(2)^2+2*x(3)^2+x(1)*x(3)-
x(1)*x(2)+x(1)+2*x(3);     %Objective Function Vector (min
f(x))


% Nonlinear Constraints
nlcon = @(x)  [x(1)^2+x(2)^2-x(3);x(1)+x(2)+2*x(3)-
16;x(1)+x(2)-3] %Nonlinear Equality Constraint
cu = [0;0;inf];
cl = [-inf;-inf;0];


% Bounds (lb <= x <= ub)
% lb = -ones(2,1);
% ub = 4*ones(2,1);
```

```
lb = [];
ub = [];
% Initial Guess
x0 = [1.5 1.5 1.5]';

% Options
opts = optiset('solver','ipopt','display','iter');

% Build OPTI Problem
Opt =
opti('fun',fun,'nl',nlcon,cl,cu,'bounds',lb,ub,'x0',x0,'o
ptions',opts)

% Solve NLP
[x,fval,exitflag,info] = solve(Opt)
plot(Opt)
```

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Testing the optimal solutions of nonlinear programming problems by analyzing the sequential quadratic programming method

Mamun-Or-Rashid *
Dr. Ganesh Chandra Ray **

Abstract

Finding the optimal solution is mandatory in the optimization techniques named nonlinear programming problem (NLP). Sequential quadratic programming (SQP) methods is used frequently in solving general NLP problems. In this paper, we test the optimal solution by analyzing SQP method which is useful in solving NLP problems. This method includes Hessian matrix containing second derivatives. Some numerical examples are studied that illustrate the performance of the given method. Karush-Kuhn-Tucker (KKT) conditions are also satisfied by these methods. A MATLAB implementation of the SQP problem is given.

Key Words: Nonlinear programming problem, sequential quadratic programming, Hessian matrix, optimum solution, Karush-Kuhn-Tucker conditions.

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1 Introduction

Sequential quadratic problem methods belong to the most powerful and frequently used nonlinear optimization algorithms and this algorithm was developed in the early 1980's by M.J.D. Powell, a mathematician at Cambridge University. SQP works in solving the problem where KKT conditions are satisfied. This is a very efficient algorithm in terms of the number of function to get the optimum solution of the problem. In 1980, dozens of nonlinear algorithms were tested on roughly 100 different nonlinear problems. In this testing the most effective algorithm was SQP. But SQP was first introduced by Wilson[6]. Fletcher[7] proposed to solve the constraint minimization problem via a sequence of quadratic programming subproblems. And this algorithm received significant attention after the work of Han[8,9]. A survey of the SQP method is given in the literature of Boggs and Tolle[3]. Gould and Toint[5] study of the SQP methods proposed for large scale optimization.

2 Problem formulations of SQP methods for general NLP problems

In this paper, the following NLP problem is considered:

(P) Minimize $z = f(x)$.

Subject to, $g_i(x) = 0, (i \in I)$,

$h_j(x) \le 0, (j \in J)$.

Where $I = \{1,2,.....m\}$ and $J = \{1,2,.....n\}$

The point (or vector) $\bar{x} \in X \subset S$ may lie in the set.

$$X = \{\bar{x} \in R^n \mid g_i(\bar{x}) = 0, h_j(\bar{x}) \le 0, i \in I, j \in J\}.$$

And where $f : R^n \to R$, $g : R^n \to R^m$ and $h : R^n \to R^n$ are given functions of twice continuously differentiable. The set S is called the set of feasible

region of the problem (P), and $\bar{x}$ is the minimum solution and the minimum value is $f(\bar{x})$.

The basic idea to solve the above NLP problems by a sequential quadratic programming framework can be extended in the following ways[1]:

The quadratic approximation at point x_k is:

$$\text{Minimize. } f_a = f(x_k) + \nabla f(x_k)^T \Delta x + \frac{1}{2}(\Delta x)^T \nabla_x^2 L(x_k)\Delta x$$

$$\text{Subject to. } g_i(x_k) + \nabla g_i(x_k)^T \Delta x = 0, \quad i = 1,2,....., m \tag{2.1}$$

$$h_j(x_k) + \nabla h_j(x_k)^T \Delta x \le 0, \quad j = 1,2,....., n$$

The solutions to the above types of problems can be effective only by constraints that are satisfied as equalities of the problem. We also observe that the approximations are the function of Δx. All the gradients and Lagrangian Hessian in (2.1) are computed at the point of expansion and so represent known quantities. The main difficulty in extending SQP to the general NLP problem is the complimentary slackness condition. This equation is obviously nonlinear with SQP format. Then we introduce the complimentary slackness basically enforcing that either a constraint is binding or the associated Lagrange multiplier is zero.

Comments:

i. This type of algorithm is very speedy. It is the most efficient optimization algorithm available in the new field.
ii. Since it does not depend on a traditional line search, so it is often more accurate in identifying the optimum point of the solution space.
iii. The algorithm is partly efficient because it does not enforce the feasibility of the constraint at each step. Instead, it gradually enforces feasibility as part of the KKT conditions.

Relative to engineering problems it has some drawbacks such as

i. It can go infeasible during optimization, sometimes by a relatively large amount; it can crash the engineering model.

ii. Before getting the optimum value, if we terminate the optimization process, SQP does not guarantee that we will have in hand a better design than we started with.

3 Steps for SQP algorithm method for general NLP problems

Here, we follow[1] the following algorithm for the Quasi-Newton Approximation method in the following ways:

i. Making quadratic programming (QP) approximation to the original problem, we use Lagrangian Hessian equal to the identity matrix for the 1st iteration.

ii. Solve the QP problem to obtain an optimum solution and hence the values of Lagrangian multipliers are obtained.

iii. Execute a simple line search by first stepping to the optimum of the QP problem. So taking the initial step is Δx and $x^{new} = x^{pre} + \Delta x$. See at this point a penalty function, composed of the values of the objective and violated constraints, is reduced. Otherwise, cut back the step size until the penalty function is reduced. The penalty function can be taken as $p = f + \sum_{i=1}^{vio} \lambda_i h_i$ where the sum is taken over the set of violated constraints and it will be an absolute value. The Lagrangian multipliers will act as scaling/weighting factors between the objective and violated constraints.

iv. Take the Lagrangian gradient at the new point and take the difference between in x and in the Lagrangian gradient γ. Update the Lagrangian Hessian H_k using the BFGS (Broyden-Fletcher-Goldfarb-Shanno)[2] update.

v. Return to 1st step until $\Delta x \to 0$. When it happens the KKT conditions are satisfied for the original problem.

Example 1: Consider the following NLP problem,

Minimize $f(x) = x_1^4 - x_1^2 x_2 + x_2^2 - 2x_1 + 5$.

Subject to, $h(x) = -\left(x_1 + \frac{1}{4}\right)^2 + \frac{3}{4}x_2 \geq 0$ starting from the point $[-1 \quad 4]$.

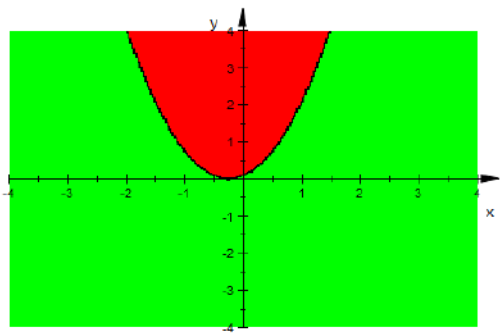

Figure 2.1: The feasible region (green shaded) of the NLP constraint of the above SQP problem.

We have that $(x_0)^T = [-1 \quad 4], f(x_0) = 17$, $\nabla f(x_0)^T = [8 \quad 6]$

$\nabla^2 L(x_0) = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}, g(x_0) = 2.4375$, $\nabla h(x_0)^T = [1.5, 0.75]$

In algebraic form we establish the first approximation as

$$f_a = 17.0 + [8 \quad 6]\begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} + \frac{1}{2}[\Delta x_1 \quad \Delta x_2]\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}\begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix}$$

$$h_a = 2.4375 + \begin{bmatrix} 1.5 & 0.75 \end{bmatrix} \begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} \geq 0$$

Now consider that the above constraint is binding, so the KKT conditions for the optimum value of the approximation are given by the following equations:

$$\nabla f_a - \lambda \nabla h_a = 0,$$

$$h_a = 0$$

The above equations can be written as,

$$8 + \Delta x_1 - \lambda(1.5) = 0$$
$$6 + \Delta x_2 - \lambda(0.75)) = 0$$
$$2.4375 + 1.5\Delta x_1 + 0.75\Delta x_2 = 0$$

The solution of this set of equations is $\Delta x_1 = -0.5$, $\Delta x_2 - 2.25$ and $\lambda = 5.00$.

The proposed step is $x_1 = x_0 + \Delta x = \begin{bmatrix} -1 \\ 4 \end{bmatrix} + \begin{bmatrix} -0.5 \\ -2.25 \end{bmatrix} = \begin{bmatrix} -1.5 \\ 1.75 \end{bmatrix}$

Before accept this step we need to check the penalty function $P = f + \sum_{j=1}^{vio} \lambda_j |h_j|$

To make sure it decreases with the step. At the starting point, the constraint is satisfied, so the penalty function gives the value of objective function, $P = 17$. But at the proposed point the value is $f = 10.5$ and the constraint is slightly violated with $g = -0.25$, and then the penalty function is $P = 10.5 + 5.0 \times |-0.25| = 11.75 < 17$.

So we accept the full step.

Iteration 2:

At $(x_1)^T = [-1.5 \;\; 1.75], f(x_1) = 10.5$, $\nabla f(x_1)^T = [-8.0 \;\; -1.0]$, $h(x_1) = -0.25$, $\nabla h(x_1)^T = [2.5 \;\; 0.75]$.

Now we need to update the Hessian of the Lagrangian, to find this we take the gradient of Lagrangian at x_0 and x_1, i.e.

$$\nabla L(x_0, \lambda_1) = \begin{bmatrix} 8.0 \\ 6.0 \end{bmatrix} - (5.0)\begin{bmatrix} 1.5 \\ 0.75 \end{bmatrix} = \begin{bmatrix} 0.5 \\ 2.25 \end{bmatrix}$$

$$\nabla L(x_1, \lambda_1) = \begin{bmatrix} -8.0 \\ -1.0 \end{bmatrix} - (5.0)\begin{bmatrix} 1.5 \\ 0.75 \end{bmatrix} = \begin{bmatrix} -20.5 \\ 4.75 \end{bmatrix}$$

$$\gamma_0 = \nabla L(x_1, \lambda_1) - \nabla L(x_0, \lambda_1) = \begin{bmatrix} -21.0 \\ -7.0 \end{bmatrix}$$ and

$$\Delta x_0 = \begin{bmatrix} -1.5 \\ 1.75 \end{bmatrix} - \begin{bmatrix} -1.0 \\ 4.0 \end{bmatrix} = \begin{bmatrix} -0.5 \\ -2.25 \end{bmatrix}$$

Now we try to use the following Hessian update

$$H_{k+1} = H_k + \frac{\gamma_k (\gamma_k)^T}{(\gamma_k)^T \Delta x_k} - \frac{H_k \Delta x_k (\Delta x_k)^T H_k}{(\Delta x_k)^T H_k \Delta x_k}$$

Substituting it yields

$$\nabla^2 L(x_1) = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} + \frac{\begin{bmatrix} -21.0 \\ -7.0 \end{bmatrix}\begin{bmatrix} -21.0 & -7.0 \end{bmatrix}}{\begin{bmatrix} -21.0 & -7.0 \end{bmatrix}\begin{bmatrix} -0.5 \\ -2.25 \end{bmatrix}} - \frac{\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}\begin{bmatrix} -0.5 \\ -2.25 \end{bmatrix}\begin{bmatrix} -0.5 & -2.25 \end{bmatrix}\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}}{\begin{bmatrix} -0.5 & -2.25 \end{bmatrix}\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}\begin{bmatrix} -0.5 \\ -2.25 \end{bmatrix}}$$

$$= \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} + \begin{bmatrix} 16.8000 & 5.6000 \\ 5.6000 & 1.8667 \end{bmatrix} - \begin{bmatrix} 0.0471 & 0.2118 \\ 0.2118 & 0.9529 \end{bmatrix} = \begin{bmatrix} 17.7529 & 5.3882 \\ 5.3882 & 1.9137 \end{bmatrix}$$

Therefore the 2nd approximation is

$$f_a = 10.5 + \begin{bmatrix} -8.0 & -1.0 \end{bmatrix}\begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} + \frac{1}{2}\begin{bmatrix} \Delta x_1 & \Delta x_2 \end{bmatrix}\begin{bmatrix} 17.753 & 5.3882 \\ 3.3882 & 1.9137 \end{bmatrix}\begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix}$$

$$h_a = -0.25 + \begin{bmatrix} 2.5 & 0.75 \end{bmatrix} \begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} \geq 0$$

Assuming the constraint is binding the KKT equations is

$$-8 + 17.753\,\Delta x_1 + 5.3882\,\Delta x_2 - \lambda(2.5) = 0$$
$$-1 + 5.3882\,\Delta x_1 + 1.9137\,\Delta x_2 - \lambda(0.75) = 0$$
$$-0.25 + 2.5\Delta x_1 + 0.75\Delta x_2 = 0$$

Solving the above equations we get $\Delta x_1 = 1.6145$, $\Delta x_2 - 5.048$ and $\lambda = -2.615$.

Since λ is negative we need to drop the constraint. Then the solution will be $\Delta x_1 = 2.007$, $\Delta x_2 = -5.131$ and $\lambda = 0$. The required new step is

$$x_2 = x_1 + \Delta x = \begin{bmatrix} -1.5 \\ 1.75 \end{bmatrix} + \begin{bmatrix} 2.007 \\ -5.131 \end{bmatrix} = \begin{bmatrix} 0.507 \\ -3.381 \end{bmatrix}$$

since penalty function increased from 11.75 to 17.48. We make the step 0.5 times the original, and then the new value gives

$$x_2 = x_1 + \Delta x = \begin{bmatrix} -1.5 \\ 1.75 \end{bmatrix} + (0.5) \begin{bmatrix} 2.007 \\ -5.131 \end{bmatrix} = \begin{bmatrix} -0.4965 \\ -0.8155 \end{bmatrix}.$$

At which the penalty function is 7.37 so we can accept this step

Iteration 3:

$$\text{At } (x_2)^T = \begin{bmatrix} -0.4965 & -0.8155 \end{bmatrix}, f(x_2) = 7.367, \nabla f(x_2)^T = \begin{bmatrix} -5.102 & -2.124 \end{bmatrix}$$
$$h(x_2) = -0.6724,\ \nabla h(x_2)^T = \begin{bmatrix} 0.493 & 0.75 \end{bmatrix}$$

$$\nabla L(x_1, \lambda_2) = \begin{bmatrix} -8.0 \\ -1.0 \end{bmatrix} - (0) \begin{bmatrix} 2.5 \\ 0.75 \end{bmatrix} = \begin{bmatrix} -8.0 \\ -1.0 \end{bmatrix}$$

$$\nabla L(x_2,\lambda_2)=\begin{bmatrix}-5.102\\-2.124\end{bmatrix}-(0)\begin{bmatrix}0.493\\0.75\end{bmatrix}=\begin{bmatrix}-5.102\\-2.124\end{bmatrix}$$

$$\gamma_1=\nabla L(x_2,\lambda_2)-\nabla L(x_1,\lambda_2)=\begin{bmatrix}2.898\\-1.124\end{bmatrix}\text{ and}$$

$$\Delta x_1=\begin{bmatrix}-0.4965\\0.8155\end{bmatrix}-\begin{bmatrix}-1.5\\1.75\end{bmatrix}=\begin{bmatrix}1.004\\-2.5655\end{bmatrix}$$

For this the new Hessian is

$$\nabla^2 L(x_2)=\begin{bmatrix}17.7529 & 5.3882\\5.3882 & 1.9137\end{bmatrix}+\begin{bmatrix}1.4497 & -0.5623\\-0.5623 & -0.2181\end{bmatrix}-\begin{bmatrix}5.8551 & 0.7320\\0.7320 & 0.0915\end{bmatrix}=\begin{bmatrix}13.3475 & 4.093\\4.0939 & 2.040\end{bmatrix}$$

So the 3rd approximation is

$$f_a=7.367+\begin{bmatrix}-5.102 & -2.124\end{bmatrix}\begin{bmatrix}\Delta x_1\\\Delta x_2\end{bmatrix}+\frac{1}{2}\begin{bmatrix}\Delta x_1 & \Delta x_2\end{bmatrix}\begin{bmatrix}13.3475 & 4.0939\\4.0939 & 2.0403\end{bmatrix}\begin{bmatrix}\Delta x_1\\\Delta x_2\end{bmatrix}$$

$$h_a=-0.6724+\begin{bmatrix}0.493 & 0.75\end{bmatrix}\begin{bmatrix}\Delta x_1\\\Delta x_2\end{bmatrix}\geq 0$$

Assuming the constraint is binding the KKT equations is

$$-5.102+13.3475\,\Delta x_1+4.0939\,\Delta x_2-\lambda(0.493)=0$$
$$-2.124+4.0939\,\Delta x_1+2.0403\,\Delta x_2-\lambda(0.75)=0$$
$$-0.6724+0.493\,\Delta x_1+0.75\,\Delta x_2=0$$

Here the solution set is $\Delta x_1=0.1399$, $\Delta x_2=0.8046$ and $\lambda=0.1205$.

Hence the new proposed step is

$$x_3=x_2+\Delta x=\begin{bmatrix}-0.4965\\-0.8155\end{bmatrix}+\begin{bmatrix}0.1399\\0.8046\end{bmatrix}=\begin{bmatrix}-0.3566\\-0.0109\end{bmatrix}$$

At this penalty function has decreased from 7.37 to 5.85.

Iteration 4:

$\text{At}\,(x_3)^T = [-0.3566 \quad -0.0109\,],\ f(x_3) = 5.859$,

$\nabla f(x_3)^T = [-2.9101 \quad -0.2761\,]\ \ h(x_3) = -0.01954$,

$\nabla h(x_3)^T = [0.2132 \quad 0.75]$

$$\nabla L(x_2, \lambda_3) = \begin{bmatrix} -5.102 \\ -2.124 \end{bmatrix} - (0.1205) \begin{bmatrix} 0.493 \\ 0.75 \end{bmatrix} = \begin{bmatrix} -5.161 \\ -2.214 \end{bmatrix}$$

$$\nabla L(x_3, \lambda_3) = \begin{bmatrix} -2.910 \\ -0.2761 \end{bmatrix} - (0.1205) \begin{bmatrix} 0.2132 \\ 0.75 \end{bmatrix} = \begin{bmatrix} -2.936 \\ -0.3665 \end{bmatrix}$$

$$\gamma_2 = \nabla L(x_3, \lambda_3) - \nabla L(x_2, \lambda_3) = \begin{bmatrix} 2.225 \\ -1.8475 \end{bmatrix}, \text{ and}$$

$$\Delta x_2 = \begin{bmatrix} -0.3566 \\ 0.0109 \end{bmatrix} - \begin{bmatrix} -0.4965 \\ -0.8155 \end{bmatrix} = \begin{bmatrix} 0.1399 \\ -0.8046 \end{bmatrix}$$

At this stage the Hessian of Lagrangian is

$$\nabla^2 L(x_3) = \begin{bmatrix} 13.3475 & 4.0939 \\ 4.0939 & 2.0403 \end{bmatrix} + \begin{bmatrix} 2.7537 & 2.2865 \\ 2.2865 & 1.8986 \end{bmatrix} - \begin{bmatrix} 10.6397 & 4.5647 \\ 4.5647 & 1.9584 \end{bmatrix} = \begin{bmatrix} 5.4616 & 1.8157 \\ 1.8157 & 1.9805 \end{bmatrix}$$

So the 4th approximation is

$$f_a = 5.859 + [-2.910 \quad -0.2761] \begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} + \frac{1}{2} [\Delta x_1 \quad \Delta x_2] \begin{bmatrix} 5.4616 & 1.8157 \\ 1.8157 & 1.9805 \end{bmatrix} \begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix}$$

$$h_a = -0.0195 + [0.2132 \quad 0.75] \begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} \geq 0$$

Assuming the constraint is binding the KKT equations is

$$-2.190 + 5.4616\,\Delta x_1 + 1.8157\,\Delta x_2 - \lambda(0.2132) = 0$$
$$-0.2761 + 1.8157\,\Delta x_1 + 1.9805\,\Delta x_2 - \lambda(0.75) = 0$$
$$-0.0195 + 0.2132\,\Delta x_1 + 0.75\,\Delta x_2 = 0$$

Here the solution set is $\Delta x_1 = 0.6099$, $\Delta x_2 = -0.1474$ and $\lambda = 0.7192$.

Hence the new proposed step is

$$x_4 = x_3 + \Delta x = \begin{bmatrix} -0.3566 \\ -0.0109 \end{bmatrix} + \begin{bmatrix} 0.6099 \\ 0.1474 \end{bmatrix} = \begin{bmatrix} -0.2533 \\ -0.1583 \end{bmatrix}$$

At this penalty function has decreased from 5.85 to 4.87.

Iteration 5:

$$\text{At}(x_4)^T = [-0.2533 \quad -0.1583\,], f(x_4) = 4.6071,$$

$$\nabla f(x_4)^T = [-1.268 \quad -0.4449\,]\ h(x_4) = -0.3724,\ \nabla h(x_4)^T = [-1.007 \quad 0.75]$$

$$\nabla L(x_3, \lambda_4) = \begin{bmatrix} -2.9101 \\ -0.2761 \end{bmatrix} - (0.7192) \begin{bmatrix} 0.2132 \\ 0.75 \end{bmatrix} = \begin{bmatrix} -3.063 \\ -0.8155 \end{bmatrix}$$

$$\nabla L(x_4, \lambda_4) = \begin{bmatrix} -1.268 \\ -0.4449 \end{bmatrix} - (0.7192) \begin{bmatrix} -1.007 \\ 0.75 \end{bmatrix} = \begin{bmatrix} -0.5438 \\ -0.9843 \end{bmatrix}$$

$$\gamma_3 = \nabla L(x_4, \lambda_4) - \nabla L(x_3, \lambda_4) = \begin{bmatrix} 2.519 \\ -0.1688 \end{bmatrix} \text{ and}$$

$$\Delta x_3 = \begin{bmatrix} -0.2533 \\ 0.1583 \end{bmatrix} - \begin{bmatrix} -0.3566 \\ -0.0109 \end{bmatrix} = \begin{bmatrix} 0.6099 \\ -0.1474 \end{bmatrix}$$

At this stage the Hessian of Lagrangian is

$$\nabla^2 L(x_4) = \begin{bmatrix} 5.4616 & 1.8157 \\ 1.8157 & 1.9805 \end{bmatrix} + \begin{bmatrix} 4.0644 & -0.2724 \\ -0.2724 & 0.0183 \end{bmatrix} - \begin{bmatrix} 5.3681 & 1.4290 \\ 1.4290 & 0.3804 \end{bmatrix} = \begin{bmatrix} 4.1578 & 0.1144 \\ 0.1144 & 1.6184 \end{bmatrix}$$

So the 5th approximation is

$$f_a = 4.6071 + \begin{bmatrix} -1.268 & -0.4449 \end{bmatrix} \begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} + \frac{1}{2} \begin{bmatrix} \Delta x_1 & \Delta x_2 \end{bmatrix} \begin{bmatrix} 4.1578 & 0.1144 \\ 0.1144 & 1.6184 \end{bmatrix} \begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix}$$

$$h_a = -0.3724 + \begin{bmatrix} -1.007 & 0.75 \end{bmatrix} \begin{bmatrix} \Delta x_1 \\ \Delta x_2 \end{bmatrix} \geq 0$$

Assuming the constraint is binding the KKT equation is

$$-1.268 + 4.1578\,\Delta x_1 + 0.1144\,\Delta x_2 - \lambda(-1.007) = 0$$
$$-0.4449 + 0.1144\,\Delta x_1 + 1.6184\,\Delta x_2 - \lambda(0.75) = 0$$
$$-0.3724 - 1.007\,\Delta x_1 + 0.75\,\Delta x_2 = 0$$

Here the solution set is $\Delta x_1 = 0.0988$, $\Delta x_2 = -0.6292$ and $\lambda = 0.7797$.

Hence the new proposed step is

$$x_5 = x_4 + \Delta x = \begin{bmatrix} -0.2533 \\ -0.1583 \end{bmatrix} + \begin{bmatrix} 0.0988 \\ 0.6292 \end{bmatrix} = \begin{bmatrix} 0.3521 \\ 0.4709 \end{bmatrix}$$

At this penalty function has decreased from 4.87 to 4.55. We would continue in this fashion until Δx goes to zero, and then we will be able to know that the original KKT equations are satisfied. The solution of this problem is $\left(x^*\right)^T = \begin{bmatrix} 0.495 & 0.739 \end{bmatrix}$ and $f^* = 4.50$

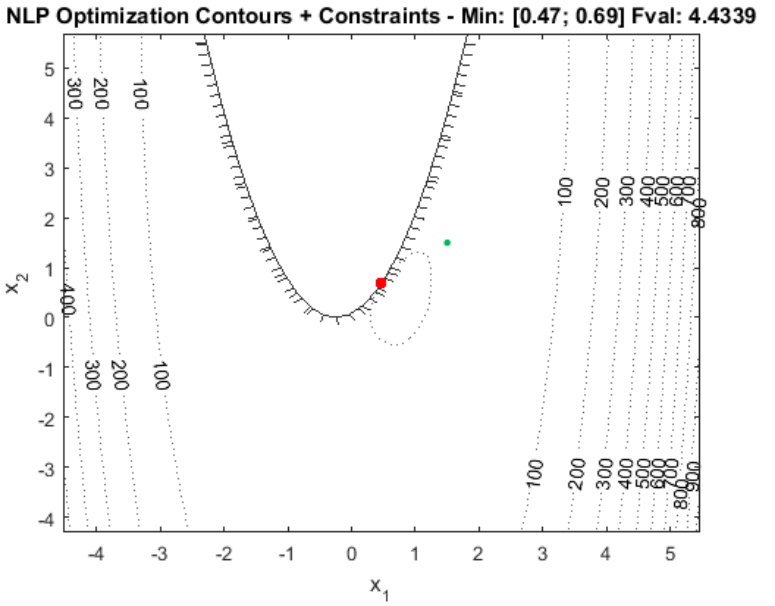

Figure 2.2: The optimal solution of the above SQP problem is obtained by using MATLAB. *Published with MATLAB® R2015a*

Example 2: Consider the following NLP problem for equality constraint only,

Minimize $f(x) = (x_2 - 2)^2 - x_1^2$.

Subject to, $g(x) = 4x_1^2 + x_2^2 - 1$ starting from the point $[2.0 \quad 4.0]$.

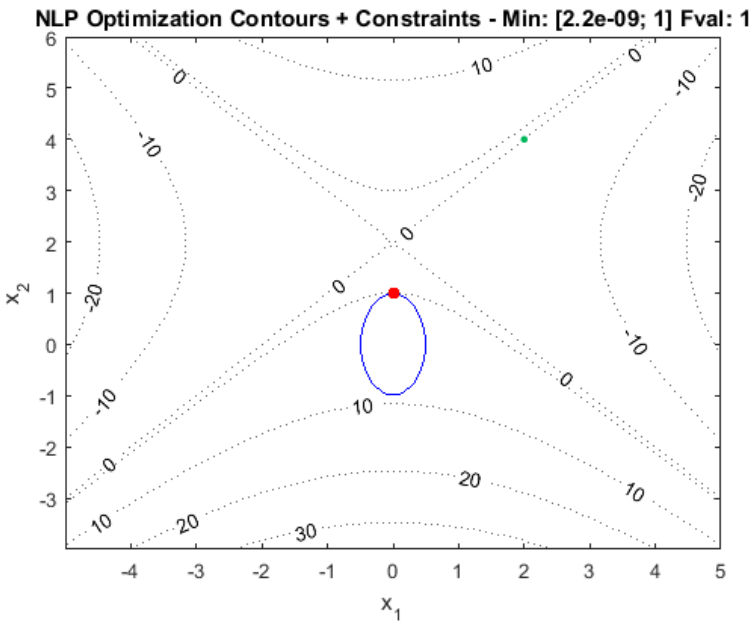

Figure 2.3: The optimal solution of the above SQP problem is obtained by using MATLAB.

For the above NLP problem, we conclude that the KKT conditions are satisfied at $(0 \quad 1)$ and we observe that after 9 iterations the optimal solution of that problem is $(x^*)^T = [0.0 \quad 1.0]$ and $f^* = 1.0$

4 Conclusions

From the above two test problems, we observe that the SQP algorithm is effective and give an optimal solution as our desired MATLAB solutions. We conclude that SQP is one of the most successful methods for the numerical solution for constraint NLP problem and it is mainly developed having in mind to ensure the convergence of the solution. SQP methods are easily applied to the following formulations such as: in various constraints (active set strategy),

in the least square optimization (Gauss-Newton type), in the system of nonlinear equations (Newton's method), in linearly constrained optimization and distributed computing etc. In case of problem (P), local convergences follow from the equality constraint if the active set of the problem is the same as the active set of the problem, at least in the last iterations.

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Workplace Counseling for Employee Development: A Study on Banking Sector Employees of Bangladesh

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Abstract

This paper aimed at exploring the importance of workplace counseling for the development of employees in enhancing quality banking service. The study is mainly based on primary and secondary data. The data have been gathered from 100 employees through convenience sampling method from public and private banks in Bangladesh. This study adopts descriptive Statistics and correlation to analyze and interpret data. Authors found in most of the banks there was no formal provision for workplace counseling. Respondents opined that some banks have in-house counseling system and the service is provided by the managers or senior colleagues. In this study, respondents opined positively that workplace counseling helps to increase motivation, morale, satisfaction, self - efficacy etc. and reduce stress, conflict, workplace bullying, turnover, absenteeism etc. which are essential for the development of the employee. Authors have found there is a high degree of positive correlation between workplace counseling and employee development (r =0.7598). A major limitation of this study is convenience sampling for data collection as it shrinks the generalizability of the study findings. Finally, the study suggests that banking sectors need to form an independent 'Counseling cell' comprised of expert consultants to ensure an ongoing employee development program.

Key Words: Workplace counseling, employee development, quality banking service.

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1. Introduction

It is the era of globalization where competition is increasing day by day in every sector of the economy. Individuals and organizations should have to fit themselves to survive in the constantly changing global village. So, to cope up with change and competition one has to work hard. Sometimes he or she has to face excessive pressure that creates stress. Recently CNN Travel discloses a list of 10 cities for creating most mental stress, among them; Dhaka in Bangladesh holds 7th position (Khan, 2017). Mental stress is also observed in the workplace due to technological change, workforce diversity, inter personal conflict with colleagues, unsuitable work conditions, unhealthy work environment etc. Adel (2017) mentioned that mental health is ignored in the workplace and seems to be less important and alien thought to many Bangladeshis. She further added that workplace environment should be open and care for protecting mental health in the workplace, so that employee feels comfortable. There are different ways to keep employees out of stress. Workplace counseling is one of them. Workplace counseling is one kind of services provided by the employer to solve employees work and personal problems.

At present, the bank has drawn major attention as a sign of a country's economy and act as a lubricant for the whole economy (Chowdhury, 2002). Competent employees are essential to work in an uncertain environment with maximum output in the competitive banking sector (Mughal, Akram, & Ali, 2014). The customer is a vital part of a bank. Customer retention is possible through better services by competent employees. It will not be possible to render better services if employees suffer from mental stress at workplace. Bankers face mental stress due to several reasons like pressure for deposit collection, dealing with customers, loan recovery, lengthy working hours, relationship problems with colleagues, discrimination, workplace bullying, lack of training facilities, lack of promotional opportunities, fail to understand market strategy, job security, leadership style, unrealistic deadline to complete a task, increased number of banks, balance work-life conflict, personal causes etc. A correlation exists between mental and physical health. Frustration is one kind of mental health problem but causes suffering to physical health in many ways like back pain, muscle pain, migraine, vomiting, dysentery, dental problems, allergy problems, heart

diseases etc. (Pain in depression, 2017). World Federation for Mental Health reported that an employee loses 36 work days a year due to depression and in Europe 617 billion dollars are spent because of depression at work (Sarker, 2017). The human resource manager can play the significant role in providing counseling to employees in a bank. Malaysian Social Welfare Ministry sent many of its officers to foreign countries for imparting training as a counselor (Peter, 1998). Human resource manager can't play a significant role in counseling if they are not well trained in handling employees' problems. If stress is not properly managed in a workplace, there will occur employee depression that acts as a threat for the organization to survive in the competitive market.

World Federation for Mental Health took initiative to declare 10th October as "World Mental Health Day" to bring awareness for mental health in 1992 and the theme for this year is "Mental Health in the Workplace" (Sarkar, 2017). So, authors of this paper feel interest to work on the emerging issue of workplace counseling which acts as a remedy for mental stress and helps to develop mental health in the workplace. Every medicine has some side effects. If anyone wants to reduce stress by taking medicine he/she may become victim to some negative effects physically but proper counseling can work as a side effect free tonic for the employees in the workplace to reduce stress, turnover, absenteeism, frustration, fatigue, boredom, workplace bullying and increases motivation, satisfaction, morale, organizational commitment, self-efficacy, ethics, work-life balance etc. So, workplace counseling would be an effective measure for the bankers to reduce the occupational stress that helps employees to enhance quality banking service to the customers.

This study is an attempt to explore the importance of counseling at the workplace for the development of employees of the banking sector in Bangladesh and to find out whether there exists a correlation between workplace counseling and employee development. Finally, this paper puts forward some suggestive measures for the decision making authority of banking sector for implementing with a view to create favorable working environment therein.

2. Rationale of the Study

The bank plays a crucial role for the development of country. Chowdhury (2002) stated that a country's economic development depends on the fully developed banking system. Banking sector development depends on its human resources. Development of human resources may be hindered due to job stress and personal problems which effect physically and mentally. Workplace counseling may be considered as one of the vital ways to develop firm's human resources. Many developed countries focused on mental health development programs for their employees for better performance. In Britain and North America, 75% of medium and large organizations afford workplace counseling program for their employees (Carrol & Walton, 1999). Tham (1998) mentioned that Malaysia has focused on counseling program for employees within the organization or near the organization to developed and preserved human resources. Many organizations in our country ignore to take initiatives regarding mental health development program for their employees.

From the total health expenditure, government health department spent less than 0.5% for mental health development which is very insignificant (WHO report based on Bangladesh, 2006). So, it is clear that our people are not conscious of mental health development. Workplace counseling is one kind of employee assistance program for mental health development that relief from workplace stress and even try to solve personal problems of employees. Authors of this paper find interest to do research on this issue as they feel its essence in banking sector is undeniable. They found most of the banking organization operating in Bangladesh is lacking this vital factor. Authors did not get also any remarkable research in this field regarding Bangladesh perspective. So these research gaps encouraged authors to work on the present study for the wellbeing of employees and the betterment of the organization.

3. Literature review

The following literature is based on workplace counseling for employee development. Very few literatures have been found regarding workplace counseling for employee development in enhancing quality banking sector.

(Ntenga, Andrew, & Elegwa, 2014) mentioned that a well-structured and properly implemented guidance and counseling program has a significant effect on the performance of commercial banks in Kenya. They also opined that if the banks have to perform better they must satisfy its customers that largely depend on the satisfaction, loyalty, and productivity of the employees. Employee satisfaction can be attained by offering them an open and approachable guidance and counseling services operated by a well-trained professional counselor. (OJO & Yinyinola, 2015) stated that dehumanizing attitude and behavior in the workplace has a negative effect on employees mental and physical health causing problems related to depression, tension, feeling of degradation, invalidation, and demoralization which can reduce their performance and productivity. They pointed out that employee's access to free and confidential workplace counseling services can help to utilize the full potentiality of the employees which can finally develop the organization's performance.

Tuvulla and Byaruhanga (2017) identified that harassment at workplace, retrenchment, the introduction of new technologies; changes in work practices, financial and marital problems are the various professional and personal problems of workers in the Mumias Sugar Company Limited, Kenya that affect their performance in the workplace. They opined that cost-effective, acceptable and in-house workplace counseling service can diminish their problems and can significantly improve their performance. Matolo and Mukulu (2016) mentioned that workplace counseling services at Kenyatta University, Kenya plays an important role in reducing workplace stress, helps employees to face challenges positively and helps to build positive employee attitude which ultimately can enhance desired employee performance and can turn the employees to a healthy workforce. Ray (2011) opined that management can confine unpleasant or ineligible behavior and attitude of troubled employees by providing caring facilities like counseling services to employees and can change the organization's culture.

For providing better counseling services the author emphasized on the proper interpersonal and communication skills of the managers. Martin (2015) argued that overstress, increase workload, conflict, bullying, undermining and unhealthy relationship with co-workers can negatively affect the employee's performance. By offering support services like workplace counseling can act as a tool to lessen

workplace strain and pressure. Counseling can be effective if the managers or supervisors are skilled in listening, communication and language pattern; skilled in managing anger, frustration, and stress. In this study, Ekpang (2015) tried to find out the causes and remedies of the weak performance of employees, advantages, and guidelines for workplace counseling. He mentioned that an organization's service, productivity, and workers performance can be enhanced if workplace counseling is arranged for underperforming employees due to their personal problems. Aydogdu and Uzel (2010) identified the necessity of workplace counseling taking a sample from the university in Istanbul. They divided two focus groups for taking data. One focus group from academic staff and another group of administrative staff, both the group opined positively about workplace counseling. They also mentioned different types of social support program and employee assistance program that encourages employees for positive thinking for the betterment of the organization. This study also focused on some factors for rendering counseling services to the employees like ethics, sincerity, confidentiality etc. (Cox, Ness, & Carlson, 2008) identified depressions that prevail in the workplace. They mentioned various sources of depression which are harmful to physical health and performance in the organization. They explored various strategies for reducing depression at a workplace. Among those strategies counseling at a workplace is one of the strategies for reducing depression.

Navare (2008) mentioned that counseling helps people to manage themselves. She also mentioned that Tata consultancy services introduce a network named as "Maitree" in 2005 to render counseling services for its 300000 employees. Rapid change in technology, change the workplace that creates stress due to heavy workload which hampers productivity and work life conflict. She further addressed many situations that cause emotional stress. She found a way to remove these stress named workplace counseling that ultimately benefits the employees and the organization. (Nyasha et al., 2013) conducted a case study at Bulawayo Premier Service Medical Aid Society (PSMAS) in Zimbabwe. They worked on two segments management and general worker. They opined that workplace counseling helps them to change their behavior positively like wellbeing improvement of employees, boosting self-confidence, improvement seriousness at a workplace, reduce workplace bullying, reduce turnover,

their interests and investments to Indian-belonged business institutions such as, the Tata and Birlas. Besides, Most of active US firms, along with IBM ran away from India in respond to government emphasis on supreme ownership of their involvement. The words move from Jones and Bucheli (2005) that in Malaysia the companies of British stayed famously on the 1960s, in portion that's why the new ethnic Malay government was anxious of keeping a check on the minority, ethnic Chinese business sector. In fact, the techniques of the British corporations were organized by the subsequent colonial government, and as depression with the government added, and agony about the future, the very well established merchant houses started to ransack the amenities outer part of the country. In the ending 1970s and starting of 1980s, initiatives were arranged to alleviate the role of British and other Western corporations in the vegetation and mining sides even in Malaysia. In 1981 the Malaysian government, using artisan forwards on the London Stock Exchange, safe restraint over the vast British rubber and oil palm business in Malaysia. Multinationals in the asset sector had fewer options to conciliate with governments. From the late 1960s governments in most host countries shifted to take responsibility of the foreign ownership of the natural resources in their countries. Occasionally, this was done by entirely nationalization, which ignored the organization little to negotiate. It is opined by Lundan (2004) that in most of pro-Western nations, such as Malaysia, state-belonged companies were used as auto mobiles to purchase the foreign companies which owned the country's vast rubber and oil palm plantations, with home then being shifted back to Malaysia and the individual local corporations.

5. Prospective Aspects of MNCs in Bangladesh as a Host Country

As Bangladesh is a developing country, she is in want of investment for both infrastructural development and industrial blooming. As per the word of Lan (2008) that the foreign direct investments inflow to the host countries is still one of the supreme factors for financial advancements for many developing countries. After the birth in 1971, Bangladesh has faced many boisterous situations passed decades of dictatorship covered with religious bigotry. Bangladesh is to face obstructive states in this modern competitive and global economy. Nonetheless, she has a great number of laborer resources in garments sector. In Bangladesh laborer cost is much cheaper than

effects on physical and mental health that causes poor performance which ultimately reduces organizational profit. He also suggested that counseling helps to develop physical and mental health for effective performance.

4. Objectives of the study

The following objectives are formulated for conducting the research:

a) To explore the importance of counseling for the employee development of banking sector in Bangladesh.
b) To find out the correlation between workplace counseling and employee development.
c) To offer some recommendations regarding workplace counseling to enhance quality banking service in Bangladesh.

5. Research Methodology

The target population of the study was employees of both the public and private sector banks in Bangladesh. Data were collected from 100 employees. So the sample size was 100. Authors preferred to use convenience sampling method for assembling data. Convenience sampling indicates some portion of a population that scrutinized by convenience, neither by judgment nor by chance (Gupta, 1995). For authors' convenience, this sampling method is applied here.

Primary and secondary data were used to complete the research work. Primary data were collected through self-administered questionnaire and interview method. Some demographic information like name of respondents, age, sex, educational qualification, a name of the organization attached, marital status, position and tenure of service is also included in the questionnaire for better understanding about the respondent. The five-point Likert scale was used for recording respondents' response (ranging from 5 as strongly agree and 1 as strongly disagree). Authors used secondary sources for conducting research and the sources were from books, research articles, newspaper etc. Authors used Cronbach's alpha for measuring the reliability of workplace counseling and employee development. The reliability test score is .905. The value of Cronbach's alpha ranges from 0 to 1 but the satisfactory values should be more than .60 for reliable

(Cronbach, 1951; Malhotra, 2002). For determining validity authors used content validity. Content validity means to check the content of a scale that signifies the measurement task (Malhotra, 2007). Some modification of questionnaire was done after taking opinion from experts.

To analyze and interpret quantitative data, SPSS 16 was used for descriptive statistics that are mean and standard deviation. Percentage analysis is done manually. For inferential statistics, correlation analysis was used manually. Information is taken from an unstructured interview, open and close-ended questions from self-structured questionnaire were described briefly.

Hypothesis Formulation

The following hypothesis has to be formulated to verify if there exists any relation between workplace counseling and employee development.

H_0: There is no relationship between workplace counseling and employee development.

H_1: There is a positive relationship between workplace counseling and employee development.

6. Findings and Discussions

6.1Percentage Analysis

The findings of the study regarding workplace counseling and employee development are given in the tabular form:

Table-1: Perceptions of employees regarding workplace counseling

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Workplace counseling provision should be provided in the organizations	82%	18%	0%	0%	0%	100%

Source: Authors' study, 2017

6.1.1 Inference from table-1

From the above table, it is observed that 100% respondents opined that workplace counseling provision should be available in the organization because it is basic need for today's stressful and competitive job environment. Every organization should have at least in-house workplace counseling for the development of employees.

Table-2: Perceptions of employees regarding workplace counseling for employee development

Serial	Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
1	Workplace counseling helps to reduce stress and conflict	56%	42%	2%	0%	0%	100 %
2	It reduces turnover and absenteeism	31%	51%	9%	9%	0%	100 %
3	It removes frustration, fatigue and boredom	42%	49%	05%	4%	0%	100 %
4	It eliminates workplace bullying	28%	65%	7%	0%	0%	100 %
5	It increases employee motivation and satisfaction	42%	54%	4%	0%	0%	100 %

6	It increases morale and organizational commitment	32%	60%	7%	1%	0%	100 %
7	It increases self- efficacy	52%	39%	6%	3%	0%	100 %
8	It increases employee engagement and organizational citizenship behavior	35%	54%	9%	2%	0%	100 %
9	It increases productivity	45%	43%	11%	1%	0%	100 %
10	It develops mental health, positive attitude and behavior	49%	45%	6%	0%	0%	100 %
11	It controls emotions	38%	43%	18%	0%	1%	100 %
12	It focuses on ethics	31%	61%	6%	2%	0%	100 %
13	It encourages employee for positive thinking	48%	47%	5%	0%	0%	100 %

14	It helps to cope with positive change	38%	48%	14%	0%	0%	100 %
15	It helps to develop career	48%	41%	10%	1%	0%	100 %
16	It helps employees for effective performance	52%	40%	8%	0%	0%	100 %
17	It helps to build communicatio n network with employees, peers, managers and customers	42%	50%	6%	2%	0%	100 %
18	It creates favorable work environment	35%	51%	11%	3%	0%	100 %
19	It reduces work-life conflict	41%	47%	9%	3%	0%	100 %

Source: Authors' study, 2017

6.1.2 Inference drawn from statement-1 (table-2)

Majority respondents (98%) believe that workplace counseling helps to reduce stress and conflict. Employee stress is a kind of threat to the organization. If it is not properly managed, it will hamper interpersonal relationship. Both stress and conflict are harmful to the congenial working environment. In this situation, workplace counseling can play a significant role in reducing stress and conflict which is reflected from the responses of the respondents.

6.1.3 Inference drawn from statement- 2

A greater portion of respondents (82%) opined that workplace counseling helps to reduce turnover and absenteeism. Frequent turnover of employees increase organizational cost and if knowledgeable and experienced employees leave the organization then the organization has to suffer. Frequent absenteeism of employees indicates some problems between the employees and the organization. Counseling can help to reduce turnover and absenteeism by proper communication with employees.

6.1.4 Inference drawn from statement-3

Most of the respondents (91%) agree that workplace counseling removes frustration, fatigue, and boredom. Frustrated people do not get the motivation to do any work, they do not give proper concentration to work and they suffer from acute mental pressures which decrease productivity. On the other hand, fatigue and boredom disrupt work performance. Workplace counseling helps to encourage management to bring diversity to work and in this way; it helps employees to reduce frustration, fatigue, and boredom.

6.1.5 Inference drawn from statement -4

It is observed in this study, 93% respondents believe that workplace counseling eliminates workplace bullying. Workplace bullying spoils self-confidence and personality which hamper employee performance. Workplace counseling helps to create employee-friendly work environment that boost self-confidence which is a precondition for better performance.

6.1.6 Inference drawn from statement -5

Majority respondents (96%) opined that workplace counseling helps to increase employee motivation and satisfaction because motivation inspires employee for better work and satisfied employee can satisfy the customer.

6.1.7 Inference drawn from statement -6

Workplace counseling can play a significant role in formulating sound organizational policy, maintaining a good relationship between manager and employees, achieving goals, solving personal problems, increasing group cohesiveness etc. These factors help employees to increase morale and if employees get favorable work environment they become committed to the organization which is reflected in the respondents' opinions as the majority of the respondents (92%) believe that workplace counseling can help to increase employee morale and commitment towards organization.

6.1.8 Inference is drawn from statement -7

Workplace counseling helps to build confidence so that they become capable to do meaningful work which is reflected by the responses of 91% respondents. Hence inference can be drawn that counseling has a good relationship with employees' self-efficacy.

6.1.9 Inference drawn from statement -8

Workplace counseling encourages an employee to involve themselves with work, with satisfaction and increase enthusiasm which helps to increase productivity in the organization. Workplace counseling encourages employees to do work more than their formal job requirements which are effective for the organization. Maximum respondents (89%) opined that workplace counseling can help employees to increase employee engagement and organizational citizenship behavior.

6.1.10 Inference drawn from statement -9

A greater portion of respondents (88%) opined that workplace counseling helps to increase productivity. Workplace counseling flourishes inner intelligence, honesty,

ethics, positive thinking, removes depression and stress which results in increasing better performance.

6.1.11 Inference drawn from statement -10

Majority of the respondents (94%) opined that workplace counseling can develop mental health; positive attitude and behavior of employees. The advancement of global business that creates competition in the workplace to increase pressure and stress among the employees which greatly affect their mental harmony. Counseling services can help the employees to overcome their mental disturbances and enable them to behave in a positive way.

6.1.12 Inference drawn from statement -11

It is found that 81% respondents argued that workplace counseling helps employees to control their emotion and can create an effective and productive working environment in the organization. Negative emotions of employees such as depression, anger, frustration, stress etc. can hinder the work performance which can be minimized by counseling services.

6.1.13 Inference drawn from statement -12

The Greater portion that is 92 % respondents expressed that workplace counseling helps employees to demonstrate ethical behavior such as honesty, integrity, accountability and help them understand what is right or wrong. Such ethical behavior can positively affect the morale and productivity of the organization.

6.1.14 Inference drawn from statement -13

Due to wrong and negative thinking of employees various problems like interpersonal conflict, bullying, undermining and harassment may occur which can lead to the unpleasant working environment. Most of the respondents that are 95 % viewed that counseling in the workplace can help to change the initial thinking of employees in a positive way and create a sound working environment.

6.1.15 Inference drawn from statement -14

A majority that is 86 % of respondents opined that workplace counseling services act as a tool to cope up with changes that occur due to globalization, competition, advancement of technology etc. and can reduce the immense mental pressure they have to take for adopting the changes.

6.1.16 Inference drawn from statement -15

Workplace counseling services can provide proper guidance and direction in developing their career which is reflected (89%) in the respondents' opinion.

6.1.17 Inference drawn from statement -16

Most of the respondents that are 92 % recognized that workplace counseling can enhance employee performance by solving their personal and professional problems, and can help to reduce absenteeism, turnover, unethical behaviors and attitudes.

6.1.18 Inference drawn from statement -17

The majority that is 92% of respondents believe that workplace counseling helps to build communication network with peers, managers, and customers by establishing an open and friendly working environment. Such types of environment help employees to express their views, opinions, and problems freely, to communicate information with their managers easily and to maintain a healthy relationship with their peers and customers.

6.1.19 Inference drawn from statement -18

Most of the respondents that are 86% believe that workplace counseling can create a favorable working environment by reducing stress, improving mental health, co-operative and supportive attitude of employees. This type of working environment can increase the enthusiasm of workers to perform better.

6.1.20 Inference drawn from statement -19

In today's business environment every employee has to perform various roles and due to a huge workload and long working hour, they cannot play their roles properly which

creates work-life conflict. Work- life conflict is related to job stress, burnout, absenteeism, dissatisfaction and poor performance. Workplace counseling can help employees to a great extent to balance work-life conflict by reducing its negative consequences. This judgment is also reflected from the majority that is 88 % of respondents.

6.2 Mean and Standard Deviation Analysis

Table-3: Respondents perceptions regarding workplace counseling on employee development

Factors	Number	Minimum	Maximum	Mean	Standard deviation
Workplace counseling provision should be provided in the organization	100	4	5	4.82	0.38612
Workplace counseling helps to reduce stress and conflict	100	3	5	4.57	0.53664
It reduces turnover and absenteeism	100	2	5	4.03	0.86987
It removes frustration, fatigue and boredom	100	2	5	4.32	0.75049
It eliminates workplace bullying	100	3	5	4.21	0.55587
It increases employee motivation and satisfaction	100	3	5	4.36	0.55994
It increases morale and organizational commitment	100	2	5	4.21	0.60794
It increases self-efficacy	100	2	5	4.38	0.74914

It increases employee engagement and organizational citizenship behavior	100	2	5	4.24	0.68343
It increases productivity	100	2	5	4.33	0.69711
It develops mental health, positive attitude and behavior	100	3	5	4.42	.0.62247
It controls emotion	100	1	5	4.18	0.79620
It focuses on ethics	100	2	5	4.25	0.64157
It encourages employee for positive thinking	100	3	5	4.42	0.58913
It helps to cope with change	100	3	5	4.24	0.68343
It helps to develop career	100	2	5	4.35	0.71598
It helps employee for effective performance	100	3	5	4.40	0.65134
It helps to build communication network with employers, peers, managers and customers	100	2	5	4.33	0.68246
It creates favorable work environment	100	2	5	4.19	0.67712
It reduces work-life conflict	100	2	5	4.27	0.75015

Source: Authors' study, 2017

Inferences from table-3

From the above table it is observed that employees perceived most emphasizing factor that is workplace counseling should be available in the organization because its mean value is highest (4.82) and the standard deviation is lowest (0.38612). On the other

hand, employees feel least emphasizing factor that is workplace counseling helps to reduce turnover and absenteeism because its mean is lowest (4.03) and the standard deviation is highest (0.86987).

6.3 Correlation Analysis

Authors were trying to find out whether any relation exists between workplace counseling and employee development. Authors used Karl Pearson coefficient of correlation for measuring the relationship between two variables. Authors denoted workplace counseling as X and employee development as Y. Authors got the values of X by adding frequencies of all variables (separate scale) related with workplace counseling, divides the total frequencies with the number of variables and multiplying frequencies with scale value. Authors also got the values of Y by adding frequencies of all variables (separate scale) related with employee development, divides the total frequencies with the number of variables and multiplying frequencies with scale value. The correlation analysis has been shown in the table-4.

Table-4: Correlation Analysis

X	Y	xy	x^2	y^2
410	206.5785	84697.185	168100	42674.68
72	196.842	14172.624	5184	38746.77
0	24.1578	0	0	583.59
0	3.0526	0	0	9.3183
0	0.0526	0	0	.00276676
∑X= 482	∑Y= 430.68	∑xy= 98869.809	∑ x^2=173284	∑y^2= 82014.36107

Source: Authors' study, 2017

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{n}}{\sqrt{\left[\sum x^2 - \frac{(\sum x)^2}{n}\right]\left[\sum y^2 - \frac{(\sum y)^2}{n}\right]}}$$

$$= \frac{98{,}869.809 - \frac{482 \times 430.68}{5}}{\sqrt{\left[173284 - \frac{(482)^2}{5}\right]\left[82014.36107 - \frac{(430.68)^2}{5}\right]}}$$

$$= \frac{98{,}869.809 - 41{,}517.552}{\sqrt{[173284 - 46464.8][82014.36107 - 37097.05248]}}$$

$$= \frac{57352.257}{\sqrt{126819.2 \times 44917.30859}}$$

$$= \frac{57352.257}{\sqrt{5696377142}} = \frac{57352.257}{75474.34757}$$

r=0.7598

From the above result, it is clear that there is a high degree of positive correlation between workplace counseling and employee development. So, it is not possible to accept the null hypothesis which means there is a significant relationship between workplace counseling and employee development.

6.4 Analysis of Coefficient of Determination

$r^2 = 0.5772$ means coefficient of determination. This indicates that 57.72% of the total variation in Y (employee development) is explained by the variation in the variable X (workplace counseling).

7. Limitations of the Research

The main drawback of the study is the focus group method of sampling for which a limited number of respondents is convenient. For this, it is not highly suitable to generalize the research findings over the whole banking sector. Short time frame and self-funding are other limitations from the authors' side. Management treats the counseling provision as extra-burden expensive measures, so data gathering faces difficulties to some extent. In a study, Carroll and Walton (1999) stated that sometimes management involved in organizational politics by providing in-house counseling

system to manipulate employees. In in-house counseling at a workplace may mislay bankers' privacy which is another constraint on employees' part. Employees thus seem to be reluctant in providing accurate information.

8. Recommendations

On the basis of the study findings, the following recommendations are made to attract the attention of the concerned individuals and upper-level professionals.

a) Banking sectors need to form an independent ‘Counseling cell' comprised of expert consultants to ensure an ongoing employee development program.

b) Expenditure maintained for nurturing and upgrading the human resources is to be treated one of the investments by which a bank intends to reap benefits in the long run.

c) Anxiety, job stress, frustration, fatigue, work-life balancing and other employee-related sensitive issues in favor of banks' greater interest should carefully be handled. Bank organization should formulate employee retention strategies regardless of job position.

d) In addition to monthly remuneration, there should be offered extra fringe benefits and flexible work arrangement to build a self-motivated productive workforce. Then, an employee does not want to leave the organization and in this way, it is possible to retain an employee.

e) There should maintain equality, justice, fair treatment for all level of bank employees in the context of employee recognition, career advancement, and timely promotion. Executive perquisites are to be offered to attract and retain qualified professionals.

f) The caring, inspiring and employee-friendly work environment is deemed essential for effective management and should abide by national and international standard and other comparable units within the industry.

g) Finally, awareness at all levels of the society should be generated regarding the essence of the counseling benefits. Caring and sharing among the incumbents within the organization should be in practice so that the employees feel belongingness.

9. Conclusion

Banking sector being rapidly and constantly emerging as well as challenging compared to other in the recent decades require a high emphasis on its human resource development. The competition takes a new shape and becomes acuter ultimately by the entry of new and innovative banks into the service industry. Workplace counseling is a type of employee welfare program that helps an employee deserve a positive perception of his job, his job place and even about himself. It facilitates an employee to affirmatively view all job-related aspects to enable him to work in a tension-free mood. Roy (2011) stated that a person seeks counseling program to overcome his/ her problems. Counseling develops an affirmative attitude and enthusiastic motives that invariably produce a positive state of mindset. It is found in the study that there exists a high positive correlation between workplace counseling and employee development in the banking sector job holders. The opinion survey regarding workplace counseling was found positive. This indicates the urgency of workplace counseling in the context of banking sector irrespective of the male and female as well as seniors and juniors. Rather this sensitive issue is now attracting the attention of bank professionals and academic researchers.

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Appendix

Questionnaire

Topic on Workplace Counseling for Employee Development

Please take a few minutes to fill out the questionnaire based on "Work Place Counseling for Employee Development". We are grateful to you for your time and appreciate your cooperation. Your all information will be kept confidential and will be used for our research. Thank you for your participation.

Section-A

PERSONAL INFORMATION

Name:

Age:

Sex:

Marital Status:

Educational Qualification:

Designation:

Organization:

Tenure/ length of service:

Section-B

Please put your opinion about the following statements on 5 point Likert Scale.

(Strongly agree=5, Agree=4, neither agree nor disagree=3, Disagree=2, strongly disagree=1)

Perception of employees regarding work place counseling

Serial No.	Variables	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	Work place counseling provision should be provided in the organization					
2	Work place counseling helps to reduce stress and conflict					
3	It reduces turnover and absenteeism					
4	It removes frustration, fatigue and boredom					
5	It eliminates work place bullying					

6	It increases employee motivation and satisfaction					
7	It increases morale and organizational commitment					
8	It increases self-efficacy					
9	It increases employee engagement and organizational citizenship behavior					
10	It increases productivity					
11	It develops mental health, positive attitude and behavior					
12	It controls emotion					
13	It focuses on ethics					

14.	It encourages employee for positive thinking					
15.	It helps to cope with change					
16.	It helps to develop career					
17.	It helps employee for effective performance					
18.	It helps to build communication network with peers, managers and customers					
19.	It creates favorable work environment					
20.	It reduces work life conflict					

Section-C

1. Do you have work place counseling provision in your organization?
   - ❖ Yes
   - ❖ No

2. What is your preference about the adoption of an in-house or out-house counseling provision?
   - ❖ In-house
   - ❖ Out-house

3. Does your supervisor or manager help you as counselor when you face problem?
   - ❖ Yes
   - ❖ No

4. Do you have any suggestions regarding workplace counseling?

Role of Leadership Styles in Problem Solving at the Private Commercial Banks of Bangladesh

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Prof. Dr. Md. Sahidur Rahman ***

Abstract

The purpose of this study is to unveil the role of leadership styles in problem solving at the private commercial banks of Bangladesh. The participants were 356 bankers who took part in the study voluntarily. Leadership styles (transformational, transactional, and laissez-faire) were measured by the Multifactor Leadership Questionnaire 5X (Bass & Avolio, 2000) while Basadur's Simplex Problem-Solving Model was used to measure the problem solving skills of employees at the private commercial banks of Bangladesh. In data collection, a convenience sampling technique was used. Descriptive statistics and inferential statistics were used to investigate the relationships between leadership styles and problem solving. Findings revealed that problem solving skills was positively correlated with transformational leadership ($r = 0.56$, $p < .01$) and transactional leadership ($r = 0.36$, $p < .01$) while it was negatively correlated with laissez-faire leadership ($r = -0.10$, $p < .01$). Results also showed that the demographic characteristics shared a negligible correlation with leadership styles and problem solving skills. An important implication of the study is that adequate training should be provided for developing leadership skills of the bankers so that they can make valuable contributions for finding appropriate solutions to problems. Implications, limitations, and future research directions are also discussed.

Key Words: Transformational leadership, transactional leadership, laissez-faire leadership, problem solving, private commercial banks.

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1. Introduction

The private commercial banks (PCBs) have made a distinctive mark in the banking history of Bangladesh by ensuring an unbroken and unprecedented tradition of excellence in service, technological superiority, and financial stability. As the number of new banks is increasing day by day, thereby, PCBs experience rapidly evolving customer needs, huge competition, diversification, and more difficult problems, which in turn expose PCBs to a great extent of risks and challenges. In addition, the difficulty and complexity of problems, in their expeditious advancement at the PCBs of Bangladesh, mandate the critical need for leaders who are able to cope with problems because they are the inevitable parts of one's life and often source of stress. Leaders must respect each other's expertise and find ways to identify and solve complex problems and challenges (Rudd & Jones, 2007). Thus, in the light of intense competition, dynamic environments, and more complex problems, PCBs have been faced with the need to change their way of thinking and how their employees deal with the problems that they encounter on a daily basis (Cheung & Wong, 2011; Suifan & Al-Janini, 2017) as employees tend to lack skills in problem solving (PS) as well as the ability to create innovative solutions to complex problems (Rudd & Jones, 2007). Leadership is a process of influencing others to understand about what needs to be done and how it can be done effectively and the process of facilitating individual and collective efforts to accomplish the shared objectives (Yukl, 2012). Several scholars reported that PS has been repeatedly associated with leadership and has been defined by some researchers as a form of skilled performance grounded in the leaders' capability to solve complex and ill-defined organizational problems (Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000). PS skills may represent a crucial determinant of effective leadership (Mumford, O'Connor, Clifton, Connelly, & Zaccaro, 1993). Research conducted within the last two decades revealed the importance of PS skills in dealing with chronic problems, stressful events in life, and difficulties experienced in adjustment processes (Heppner, Pretorius, Wei, Lee, & Wang, 2002; Deniz, 2013).

Accordingly, the literature review revealed that while there are a growing body of research focusing on leadership styles, however, the in-depth research on leadership

styles (transformational leadership (TFL), transactional leadership (TSL), and laissez-faire leadership (LFL) and its relationship with PS in Bangladesh is largely absent. This research gap has motivated the researcher to investigate the role of leadership styles in PS at the PCBs for the first time in Bangladesh. Moreover, conducting this study will provide insightful information that will help the banking industry to develop and sustain a culture that is favorable to gain more productive, supportive, and healthy experiences at work place.

2. Objectives of the Study

The main objective of this study is to investigate the role of leadership styles in PS at the PCBs of Bangladesh. In order to achieve the main objective, this study proposes the following specific objectives:

1. To understand the relationship between TFL and PS perceived by the employees at the PCBs of Bangladesh.

2. To identify the relationship between TSL and PS perceived by the employees at the PCBs of Bangladesh.

3. To examine the relationship between LFL and PS perceived by the employees at the PCBs of Bangladesh.

3. Literature Review

3.1 Leadership Styles

Leadership is a topic with a vast appeal as most of the people are directly or indirectly, consciously or unconsciously, involved in the process of being influenced or influencing others in the role of leadership (Bodla & Nawaz, 2010). Many previous studies of leadership styles have given rise to various models, among which the topmost model identifies three types of leadership styles: TFL, TSL, and LFL (Bass, 1997).

3.1.1 TFL and Its Components

TFL style is the most taught matters in the whole world as well as in research community (Avolio, 2010; Bass, 1985; 1990; Gill, 2010; Biswas & Rahman, 2017;

Rahman, 2018). Downton (1973) first coined the notion of TFL in his work on rebel leadership (Rahman, Ferdausy, & Uddin, 2012). Burns (1978) introduced the concept of TFL in his writing about the differences between TSL and TFL in political leaders. Transformational leaders motivate followers to perform beyond expectations (Hartog, Muijen, & Koopman, 2011). A transformational leader exhibits idealized influence, provides intellectual stimulation, individualized consideration, and motivates followers to perform beyond expectations (Bass, Avolio, Jung, & Berson, 2003; Bass & Riggio, 2006; Biswas & Rahman, 2017; Rahman, 2018).

a) Idealized influence - This aspect is viewed in two perspectives, which are idealized influence attributes and idealized influence behavior. Leaders with idealized influence attributes usually have very high standards of moral and ethical conduct and they are respected by their followers (Northouse, 2013). Leaders with this behavior demonstrate the ability to change employees' behavior (Bass & Riggio, 2006; Rahman et al., 2012).

c) Inspirational motivation- These leaders communicate high expectations to their followers, inspire them to become committed to and part of the shared vision in the organization (Northouse, 2013). This aspect has enabled leaders to envision the future of all concerns, which ultimately serves the vision of TFL as well (Bass & Riggio, 2006; Rahman et al., 2012).

d) Intellectual stimulation- These leaders stimulate followers to try new approaches and their ideas are not criticized in the event that they differ from those of leaders (Bass & Riggio, 2006; Rahman et al., 2012). This type of leader promotes PS to find creative solutions to the task at hand (Northouse, 2013).

e) Individualized consideration- These leaders provide a supportive climate in which they listen carefully to the individual needs of followers (Northouse, 2013). The behavior of leaders here demonstrates acceptance of individual differences (Bass & Riggio, 2006; Rahman et al., 2012).

3.1.2 TSL and Its Components

TSL is a primarily exchange-oriented relationship that is a task-focused (Bass, 1985; Rahman, 2018). "Transactional leaders offer inducements to move in the direction desired by the leaders, which often is a direction that would also satisfy the self-interests of the followers" (Avolio, 1999, p. 35). TSL occurs when the leader rewards or disciplines the followers, depending on the adequacy of the follower's performance (Bass & Riggio, 2006; Rahman et al., 2012). TSL depends on contingent reward, management by exception (active) and management by exception (passive) (Bass et al., 2003; Bass & Riggio, 2006; Rahman, 2018).

a) Contingent reward-These leaders make clear what one can expect to receive when performance goals are achieved (Bass & Riggio, 2006; Rahman et al., 2012).

b) Management by exception- Management by exception involves corrective criticism, negative feedback, and negative reinforcement and it takes two forms: active and passive (Northouse, 2013).

- **Management by exception (active) -** Active management by exception includes leaders actively monitoring subordinates' behavior to ensure it complies with expected standards of performance (i.e. ensuring compliance with rules and procedures for example) and intervening before problems arise (Lekka & Healey, 2012).
- **Management by exception (passive) -** Passive management by exception involves leaders intervening only after problems have occurred; thus, unlike active management by exception, it represents a reactive form of leadership (Bass & Avolio, 1990; Yukl, 2012; Lekka & Healey, 2012).

3.1.3 LFL

LFL is a "hands-off" approach to leadership (Northouse, 2013). LFL has been described as an absence of leadership and/or avoidance of responsibility whereby the leader avoids making decisions, ignores subordinate problems or needs and provides neither feedback nor rewards (Bass, 1990; Northouse, 2013). LFL indicates an absence of leadership or the avoidance of intervention or both (Bass & Riggio, 2006). Thus,

LFL is a non-leadership since it entails doing nothing and let the things occurs (Avolio 2010; D&D consultants group, 2007; Gill 2010). Laissez-faire leaders abdicate responsibilities or duties assigned to them (Lewin, Lippitt, & White, 1939; Nguyen, Teo, Grover, & Nguyen, 2017).

3.2 The 'Problem' Concept

The word 'problem' comes from old French 'probleme'. A situation can be defined as a problem when an individual feels disturbed by it and also when the problem hinders him from achieving his goal (D'Zurilla & Nezu, 1982; Biswas, Rahman, & Ferdausy, 2017). Again, PS may be defined as successfully searching for an operation or a series of operations in order to transfer the given actual state of the system to a goal state (Newell & Simon, 1972; Dunbar, 1998). In this study, PS was measured by using a 16-item instrument which was designed to ensure that users solve the most significant problems with the best solutions available based on Basadur's Simplex Problem-Solving Model (Basadur, 1995). Simplex model consists of eight steps. Descriptions of these eight steps are as follows (Basadur, 1995; Biswas et al., 2017):

a) Problem finding: It is the first step of Simplex Problem-Solving Model which brings together some series of questions to make sure the users to attack the right problem.

b) Fact finding: It is related to obtain more information about the problem.

c) Problem definition: It ensures that the problems will be addressed neither too broadly nor too narrowly.

d) Planning: It is related to identify who, what, when, where, why and how to make the solution work.

e) Idea finding: It is the brainstorming stage; where many ideas are generated without any judgment or evaluation.

f) Selection and evaluation: It is associated with employing decision-making techniques in order to evaluate, modify, and select the most promising solutions.

g) Selling the idea: It is associated with complex issues that may arise in the process of selling the solution to those in charge.

h) Action: It is the final stage where ultimate solution is put into practice.

4. Development of Research Hypotheses

Leadership is solving problems and employees lose confidence in leaders who do not have PS skills, and this creates a dangerous environment (Powell & Persico, 2010). Leadership and PS are both widely accepted as skills which high school graduates must possess to be successful in the current workforce and in higher education (Hooker & Brand, 2010). Friedel (2014) postulated that "leadership is dependent on solving a problem" (p. 74). Frisch (2009) conducted a study to investigate PS style preferences of leaders in an organizational hierarchy and found that leadership exhibited a preference toward the PS skills. In addition, he also found that PS is a trait held by leaders. Wheeler (2001) found that PS is an important component of leadership and that it can be enhanced by training. Marshall (2008) claimed that "leaders are drawn from the best problem solvers" (p. 12). Effective leaders are able to construct teams comprised of individuals with PS skills necessary to solve the problem at hand (Kirton, 2011). Further, leaders must have knowledge of their leadership capacities in relation to the construction of solutions during while solving a problem (Mumford, Zaccaro, Connelly, & Marks, 2000). Moreover, Zacarro, Mumford, Connelly, Marks, and Gilbert (2000) examined leaders' PS capabilities and found that leaders' PS skills and knowledge are the most potent of leader capabilities. Burstiner (2001) found that PS is an essential characteristic of leadership as "many large corporations now provide special training for their management-level personnel in creative approaches to problem-solving" (p 47). Moreover, Zaccaro et al. (2000) claimed that for leaders to be successful they must use creative PS skills to address complex organizational problems. On the other hand, some researchers found no significant relationships between leadership styles and PS (Panchanatham, Rajendran, & Karuppiah, 1993). With this in mind, this study aimed to expand knowledge on the relationship between leadership styles and PS skills of employees at the PCBs of Bangladesh.

4.1. TFL and PS

Transformational leaders may inspire subordinates to go beyond their abilities in providing a better way of completing their tasks and solving problems (Cheung & Wong, 2011). It is found that TFL facilitates the development of employees' PS capacity by shaping a climate of psychological safety conducive to reflexivity processes (Carmeli, Sheaffer, Binyamin, Reiter-Palmon, & Shimoni, 2014). Their study sheds further light on the ways in which transformational leaders help to develop and cultivate employees' capacity for creative PS (Carmeli et al., 2014). Transformational leaders encourage PS in followers rather than constantly providing solutions and directions and a greater pool of knowledge (Buhler, 1995). They encourage employees to go beyond what they have already expected by inspiring them to raise their capabilities and develop PS skills (Limsila & Ogunlana, 2008). Another characteristic of transformational leaders is the fact that they grant their subordinates autonomy and encourage them to cope with the problems as a way to enhance their performance and efficacy (Bass et al., 2003). Bass and Avolio (1994) suggested that a consequence of this behavior is that followers develop the capacity to solve future problems which might be unforeseen by the leader. This is further supported by Walumbwa and Lawler (2003) that transformational leaders can motivate and increase followers' motivation and organizational commitment by getting them to solve problems creatively and also understanding their needs. Hence, the first hypothesis can be developed as follows:

Hypothesis 1: There is a positive relationship between TFL and PS perceived by the employees at the PCBs of Bangladesh.

4.2. TSL and PS

Transactional leaders tend to solve problems or deal with issues pragmatically, taking into account all realistic constraints and opportunities. They concentrate their full attention on dealing with PS, complaint, mistakes and failure. They promote creative PS, inspire loyalty, and treat followers as individuals (Bass, 1985; Frisch, 2009). However, it is reporterd that the transformational leaders exert stronger influence processes than the transactional leaders because they only try to solve them to achieve preset objectives (Bass, 1985). In addition, TSL behaviors involve clarification of

goals, exchange of rewards for meeting objectives, highlighting problems, specifying the standards for compliance, and punishing followers for being out of compliance with those standards. Contingent reward and management-by-exception (active) make up TSL. Contingent reward is how the leader and followers exchange specific rewards for outcomes or results and management-by-exception is a method of leadership associated with either solving or preventing problems. Thus, the second hypothesis can be suggested as follows:

Hypothesis 2: There is a positive relationship between TSL and PS perceived by the employees at the PCBs of Bangladesh.

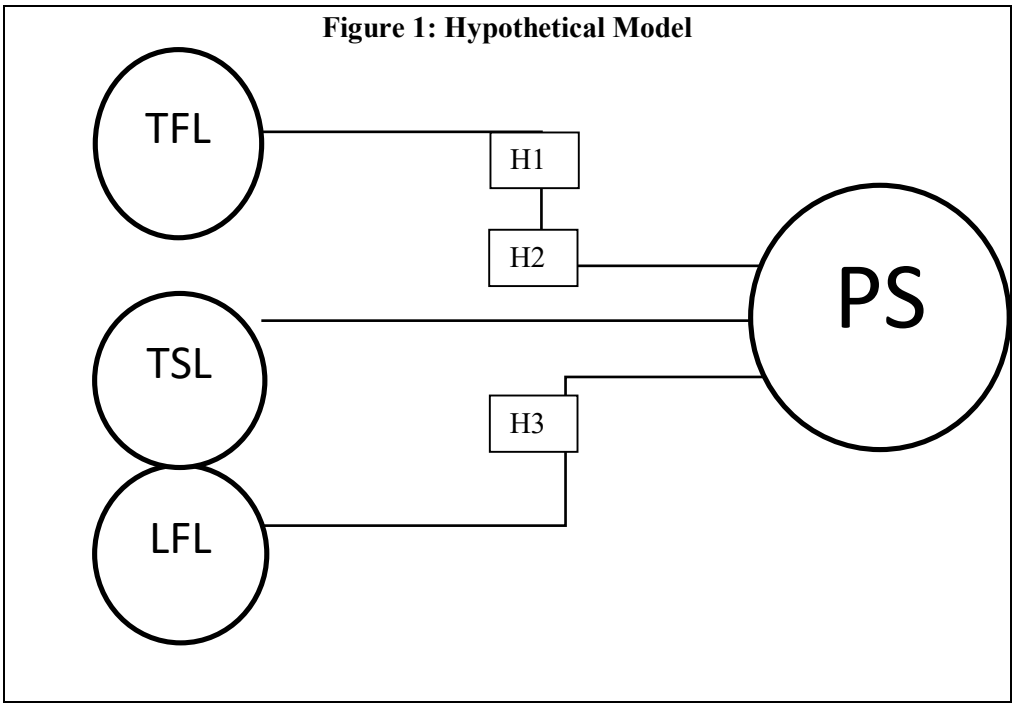
4.3. LFL and PS

Laissez-faire leaders can cause role conflict, low productivity, or low level of job satisfaction (Bass, 1990; Kelloway, Sivanathan, Francis, & Barling, 2005) because such managers refuse to take actions and leave employees with responsibilities for dealing with problems, which makes employees feel unnoticed and segregated (Bass, 2008; Loi, Mao, & Ngo, 2009; Nguyen et al., 2017). They tend to ignore employees' opinions and contributions in PS. Leaders showing laissez-faire behaviors tend to give inappropriate decisions and to distance themselves from operational and co-operational problems (Einarsen, Hoel, Zapf, & Cooper, 2003; Skogstad, Einarsen, Torsheim, Aasland, & Hetland, 2007; Nguyen et al., 2017). Nguyen et al. (2017) found that the LFL behavior avoiding getting involved when problems arise. Furthermore, managers' LFL may be conceptualized as bullying in itself because managers ignore their employees and avoid intervening when problems occur (Nguyen et al., 2017). Therefore, the authors have developed the third hypothesis as follows:

Hypothesis 3: There is a negative relationship between LFL and PS perceived by the employees at the PCBs of Bangladesh.

A hypothetical model was developed for showing the role of EI in PS at the private commercial banks of Bangladesh as follows:

Figure 1: Hypothetical Model



Source: Authors' own contribution, 2018

Note: TFL = Transformational leadership; TSL = Transactional leadership; LFL = Laissez- faire leadership; PS = problem solving

5. Research Methods

5.1 Participants

A total number of 110000 employees working at the total number of 39 listed PCBs of Bangladesh were included as population (Bangladesh Bank, 2016). The PCBs were categorized as first generation, second generation, and third generation. While conducting the study, the respondents were classified into three categories namely: higher-level, mid-level, and lower-level. All respondents were given autonomy and assured that any information provided by them would be kept confidential and used only for academic purposes.

5.2 Survey Instruments

The study adopts the following measures to collect data from the participants.

5.2.1 Multifactor Leadership Questionnaire 5X

TFL, TSL, and LFL were measured by Multifactor Leadership Questionnaire 5X (MLQ5X: Bass & Avolio, 2000) with 37 items to measure subordinates'/employees' perception of their supervisors' TFL, TSL, and LFL. The items were measured on a 5-point Likert scale ranging from 4 (frequently) to 0 (not at all).

5.2.2 PS

A 16-item instrument, the Simplex Problem-Solving Model (Basadur, 1995), was used to measure the PS ability of employees, which provides a problem-solving scenario that is useful in various situations. The items were measured on a 7-point Likert scale ranging from 7 (Strongly Agree) to 1 (Strongly Disagree). The higher score indicates the higher PS ability of the employees.

5.3 Data Collection Procedure

For selecting the respondents, a convenience sampling technique was used in this study. In order to collect data, printed questionnaires were distributed among 425 respondents working at 20 sample PCBs which are situated in Chittagong city to answer the survey questions. 381 questionnaires were found back. After inquiring those, 25 questionnaires had to discard because of incomplete responses. Finally, a total of 356 (83.76%) usable responses were kept for analysis. Then, the raw data were entered into the SPSS statistics 20.0 data editor for statistical analysis. In order to interpret the results of the analysis, Evans (1996) effect size determination score was used as reference.

5.4 Reliability of Scales and Validity of Data

Reliability and validity are the statistical instruments which are used to evaluate whether the research provides a good measure (Whitelaw, 2001). Cronbach's alpha is the most widely used method to measure the reliability of the scale (Hair, Anderson, Tatham, & Black, 2003; Malhotra, 2002; Biswas & Rahman, 2017). It may be mentioned that Cronbach's alpha value ranges from 0 to 1, but a satisfactory value is required to be more than 0.60 for the scale to be reliable (Malhotra, 2002; Cronbach, 1951; Rahman et al., 2012; Biswas & Rahman, 2017). Cronbach's alpha values for the TFL, TSL, LFL, and PS for the current study were 0.88, 0.81, 0.66 and 0.89 respectively. Therefore, these two instruments were highly reliable for data collection.

The validity refers the extent to which differences in observed scale scores reflect true differences among objects on the characteristics being measured, rather than systematic or random error (Malhotra, 2002). The validity of the instruments was ensured by conducting a good number of studies in different countries including Bangladesh (Bass & Avolio, 1995; 2000; Rahim et al., 2002; 2006; Rahman et al. 2012; Biswas et al., 2017; Biswas & Rahman, 2017; Rahman, 2018).

6. Results of the Study

The mean (M) and standard deviation (SD) calculated for leadership styles (TFL, TSL, and LFL) and PS are presented in Table 1. Correlations between the leadership styles and PS are also presented in Table 1.

Table 1: Means, Standard Deviations, Reliabilities, and Correlations between Variables

Variables	Mean	Standard Deviation	Alpha	Correlations			
				1	2	3	4
1. TFL	3.36	0.27	0.88	1			
2. TSL	3.29	0.57	0.81	0.33**	1		
3. LFL	0.92	0.69	0.66	-0.12*	-0.09	1	
4. PS	6.22	0.81	0.89	0.56**	0.36**	-0.10	1

Source: Authors' own research, 2018

** Significant at the 0.01 level; n = 356; TFL= Transformational leadership; TSL= Transactional leadership; LFL= Laissez-faire leadership; PS= Problem solving

Review of the above table demonstrates that there was a significant and positive correlation (moderate) between TFL and PS ($r = 0.56$, $p < 0.01$), while a positive but weak correlation was found between TSL and PS ($r = 0.36$, $p < 0.01$) and between TFL and TSL ($r = 0.33$, $p<.01$), meaning that these variables tend to increase together. But, LFL was negatively correlated with PS ($r= -0.10$, $p<.01$). Thus, it indicates that all hypotheses were supported by the results.

Table 2: Summary of Regression Analysis regarding leadership styles (TFL, TSL, and LFL) with PS

Predictor Variables	Co-efficient (β)	S.E. (β)	Beta	Value of t-statistic	Value of R^2	Value of F –statistic (ANOVA)
TFL	1.70	.13	.56	12.80**	0.32	163.83**
TSL	0.51	0.70	0.36	7.20**	0.13	51.80**
LFL	-.12	0.06	-.10	-1.92	0.01	3.70

Source: Authors' own research, 2018

** Correlation is significant at the 0.01 level; n = 356; TFL= Transformational leadership; TSL= Transactional leadership; LFL= Laissez-faire leadership; PS= Problem Solving

From Table 2, regression analysis shows a significant positive (moderate) relationship between TFL and PS (β=1.70, t=12.80, p<.01). Similarly, regression analysis displays a significant positive (weak) relationship between TSL and PS (β=0.51, t=7.20, p<.01). Additionally, regression analysis shows a negative relationship (very weak) between EI and LFL (β=-.12, t=-1.92, p<.01). Review of the above table demonstrates that about 32%, 13%, and 1% of the variances in PS was explained by TFL, TSL, and LFL. The

presence of unexplained variance suggests that there were other implied predictor variables those account for variations in PS. Thus, it has been suggested that both TFL and TSL might be the significant predictors in explaining the PS ability perceived by the respondents.

Table 3: Summary of Regression Analysis of Demographic Characteristics with leadership styles and PS

Co-variates	Co-efficient (β)				Standard Error (β)				Value of t-statistics				Value of R^2				Value of F-statistic			
	TFL	TSL	LFL	PS	TFL	TSL	LFL	PS	TFL	TSL	LFL	PS	TFL	TSL	LFL	PS	TFL	TSL	LFL	PS
EXP	.001	.022	-.002	-.003	.163	.011	.013	.46	.112	2.00	-.14	-.17								
AGE	.003	-.027	.010	-.001	.005	.009	.011	.02	.750	-2.9*	.879	-.07								
EMP	.001	.001	.001	.001	.004	.000	.000	.01	.747	.426	-2.0	.818								
DEP	-.023	-.043	.071	-.051	.000	.021	.026	.03	-2.24	-2.0	2.7*	-1.6	**.04**	**.09***	**.05**	**.02**	**1.61**	**4.50***	**2.44**	**1.7**
EDU	-.005	.019	.022	-.009	.010	.021	.026	.00	-.542	.914	.861	-.27								
GEN	.010	-.207	.133	-.066	.010	.075	.093	.11	.287	-2.7*	1.43	-.59								
POS	-.07	-.26	.166	-.124	.036	.070	.087	.10	-2.05	-3.7*	1.90	-1.2								

Source: Authors' own research, 2018

** Correlation is significant at the 0.01 level; n = 356; TFL= Transformational leadership; TSL= Transactional leadership; LFL= Laissez-faire leadership; PS= Problem solving

Review of Table 3 demonstrates that only 4%, 9%, 5%, and 2% of the variances in TFL, TSL, LFL, and PS were explained by socio-demographic characteristics (e.g. gender, age, tenure, education, and position). It indicates that a larger portion of variance in TFL, TSL, LFL, and PS were unexplained.

7. Discussions

The present study intends to assess the role of leadership styles in PS at the PCBs of Bangladesh.

The first purpose of this study was to explore the relationship between TFL and PS. To fulfill the purpose, the first hypothesis stated that there was a positive relationship between TFL and PS perceived by the employees at the PCBs of Bangladesh. The result of the current study supported this assertion. Analysis revealed that there was a significant positive correlation (moderate) between TFL and PS ($r=0.56$, $p<.01$) perceived by the employees at the PCBs of Bangladesh. Additionally, regression analysis also demonstrated a significant positive relationship between TFL and PS ($\beta=1.70$, $t=12.80$, $p<.01$). The result of the R^2 was 0.51 which indicates that 32% variances (moderate) in PS were explained by TFL. The research findings provided credence to the empirical support of previous research findings (Bass & Avolio, 1994; Buhler, 1995; Wheeler, 2001; Burstiner, 2001; Bass et al., 2003; Walumbwa & Lawler, 2003; Limsila & Ogunlana, 2008; Frisch, 2009; Cheung & Wong, 2011; Carmeli et al., 2014). The findings of the current study also provided support for the theoretical argument that transformational leaders encourage employees to go beyond what they have already expected by motivating them to develop and cultivate their' capacity for solving problems. Thus, the findings of the study make intuitive sense suggesting that TFL fosters PS capacity of the employees at the PCBs of Bangladesh.

The second purpose of the study was to investigate the relationship between TSL and PS. To fulfill the purpose, the second hypothesis stated that there was a positive relationship between TSL and PS perceived by the employees at the PCBs of Bangladesh. The result of the current study supported this hypothesis. Findings demonstrated that there was a positive correlation (weak) between TSL and PS ($r=0.36$, $p<.01$) perceived by the employees at the PCBs of Bangladesh. Similarly, regression

analysis revealed a significant positive relationship between TSL and PS (β=0.51, t=7.20, p<.01). The result of the R^2 was 0.19 which indicates that only 19% variances (weak) in PS were explained by TSL. Few other literatures have found the similar findings (Bass, 1985; Frisch, 2009). The findings of the current study are in line with Bass (1985) who asserted that TFL is more effective than TSL because the latter remain limited to reacting to the problems when they receive those.

The third purpose of the study was to examine the relationship between LFL and PS. The third hypothesis furnished that there was a negative relationship between LFL and PS perceived by the employees at the PCBs of Bangladesh. The result of the current study supported this argument. Findings showed that there was a negative correlation (very weak) between LFL and PS (r=-0.10, p<.01) perceived by the employees at the PCBs of Bangladesh. Additionally, regression analysis showed a negative relationship between LFL and PS (β=-0.12, t=-1.92, p<.01). The result of the R^2 was 0.01 which indicates that only 1% variances (very weak) in PS were explained by LFL. The findings of this research were parallel with the previous research findings (Einarsen, et al., 2003; Skogstad et al., 2007; Bass, 2008; Loi, et al., 2009; Nguyen et al., 2017). This suggests that laissez-faire employees at the PCBs of Bangladesh have no relationship with PS.

8. Implications for Management

The results of this study have both theoretical and applied impact in terms of implications. From a theoretical perspective, this study will make a valuable contribution to the literature. From an applied perspective, the current study is relevant to practitioners as well as business leaders, as the findings may help them to solve different problems effectively. The research findings will help employees or leaders to become a master problem solver. Professional organizations may use the data to; increase their overall productivity, understand their employees better by making the PS process highly collaborative. Employees or leaders of the PCBs of Bangladesh may use the findings of the study to understand PS as a seamless process that enables them to work more productively with others and the organization to pursue additional profit-generating opportunities.

9. Limitations

Some limitation in this research must be considered in order to provide guidance for future research. First, the sample size (n=356) is very small which might limit the findings of the research. Second, the study consists of employees working only at the PCBs of Bangladesh, thus, the results of the study cannot be generalized to other populations. Third, using convenience sampling technique might limit the generalizability of the findings. Fourth, the study has been considered for a specific location (Chittagong, Bangladesh) which may be a major limitation.

10. Future Research Directions

Future research would benefit from a large sample size, using a variety of samples (Brown & Schutte, 2006) so that the generalization of the findings based on the fact that the sample size might not be limited. Moreover, instead of convenience sampling technique, proportionate stratified random sampling may be used. Future research should investigate the relationships between leadership styles and PS in other contexts, for example, manufacturing or insurance or telecommunication sector. In addition, future research should combine bothqualitative and quantitative methods in order to facilitate a better understanding of the different variables being studied. Finally, future research onPS ability of male and female in their working area is warranted.

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Upsurge of Multinational Corporations through capitalism influences adversely the third world countries like Bangladesh: A study in quest of propitious mechanisms

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Abstract

The blooming of multinational corporations (MNCs) and foreign direct investment (FDI) have been brought about unprecedentedly from 1990s. Of late, the trajectory of influences of multinationals in the developing countries is growing fast. Nonetheless, the developing economy is welcoming the foreign direct investment to overcome the challenges of globalized economy. Hence, it is clear that there is fusion of both pragmatic and pessimistic aspects on the host countries by the flourishing of multinationals. The paper will venture to explore the potential means of integration and balance between FDI and human development index (HDI) on the host economy. Moreover, there is ambit of intangible benefits stemmed from FDI on overall socio-economic conditions of host countries. The study also moves to analyze the subsidiary performances of MNCs through shifting their development strategies. In addition to this, the factors that are keeping core influences on the economy of third world countries like Bangladesh by the multinational corporations (MNCs) are the paramount concerns of the study. The research also shows the descriptive findings that the multinational are keeping disputed footprints on the developing countries like Bangladesh especially as to sustainable development and human rights phenomena. Furthermore, the extent of perusal has been amplified by counting aspiring enterprises for Bangladesh as a consequence of MNCs and pointing out the congenial frameworks for mitigating the gloom-ridden facets of multinationals in the developing countries.

Key Words: Multinational Corporations, Third World Countries, Background of MNCs, Perspective Aspects of MNCs, Menacing to Sustainable Development, Thumps of MNCs to Third World Countries, Quest of Propitious Mechanisms.

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1. Introduction

"Multinational corporations do control. They control the politicians. They control the media. They control the pattern of consumption, entertainment, thinking. They're destroying the planet and laying the foundation for violent outbursts and racial division." ***Jerry Brown.***

In the flourishing era of capitalism the multinational corporations (MNCs) has become inevitable part throughout the economy of global competitive world. Despite this the impact of multinational corporations in the socio-economic situation of developing countries is not beyond controversy. Multinational corporations are egotistical in nature, encourage capital flight and may smack to a country's laws and sovereignty. The amenities of employment provided are often considered to be a modern form of slavery owing to below standard working states and below-living reimbursement. Nonetheless, as a developing country Bangladesh is in need of more foreign direct investment (FDI) for both infrastructural prosperity and industrial enhancement. Being a country of cheap labor is a cardinal reason of tempting the industrialists of multiple countries and MNCs in our garments industry. The paper accentuates that the penetration of MNCs throughout the world, especially in the developing markets has both adverse and efficacious effects. Even though foreign direct investment acts as catalyst to the development of host countries, as a host the developing countries should enhance their indigenous industries which will vie with the MNCs dominated global economy. In fact, MNCs are treated as economic actors in the contemporary global political economy. Notwithstanding that the interaction between MNCs and developing countries is on the rise and conspicuous rate of direct foreign investment in the third world countries is held by MNC. Hence, FDI can reduce poverty in the host country by belching employment and job opportunities. Moreover, in the globalized world multinational companies' presence in developing countries provides employments to the rank and file. In this age of capitalism diversity of MNCs authorize all to be financially benefitted by own efforts rather relying on others. Furthermore, through the entrance of MNCs in the third world countries some laborers are being deprived of their rights and work in the perilous situation where the worker gets lowest remuneration and be exploited. Generally speaking, the relative importance of the

multinational corporation in developing countries is rising in the manufacturing and services sectors and declining in the primary industries, in particular those connected with plantations. Department of economic and social affairs (1973) narrates that as a whole, significance of MNCs is increasing fast. As a source of the net flow of resources to developing countries, private direct investment flows from such corporations. The real dispute is that these MNCs are not conducting business with sector wise diversity in the host countries innocuously. As a consequence, the home economy is being endangered intensely. Despite this not surprisingly it is supposed be realized that the multinationals acts as engine of development in the host countries as a rising economy like Bangladesh. MNCs are perhaps the most important factor for sustainable development, the reason is multinational corporations verily belongs modern technology and keep well-furnished management skills that can be shifted to the developing countries.

2. Objectives of the study

It is an undeniable fact that globalization is a method of creating borderless market throughout the world and by name of this globalization process the capitalists introduce MNCs that exploit the cheap labor available in the third world countries. This research has some prime goals to alleviate obstructive features of MNCs on poorer host countries. Thus, the objectives of the study are summed up in the following ways:

- To accentuate the apathetic features of multinational corporations on the developing countries by empirical analyses.
- To scrutinize the potential extent of FDI to strengthen the socio-economic condition of the host countries.
- To point out the factors that ameliorates the standards of sustainable development.
- To pledge constructive ways of emancipation from covetous impacts of MNCs.
- To ransack the authentic state of MNCs in the host countries like Bangladesh.

3. Connotations of MNCs and Third World Countries

Multinational corporations have become indispensable part of this age of capitalism. The word "Multinational" is composed two words named "Multi" and "National. So the term multinational corporations mean a corporation which involves in more than one country or which has access to international markets. A Multinational Corporation indicates a company which has own amenities and essential branches in more than one country and that country must be other than origin. It is a corporation or company that both manufactures and disposes services and commodities in the diversified states. The systems and ways of these MNCs are taken and dealt with countries according to their realization of the influences of their activities on the finance of the developing countries. It is opined by Onodugu (2012) that the first and foremost normal stimulation is for the developing countries to welcome the corporations on the base which may ameliorate the inflow of FDI as well as bear possibilities to produce earnings and jobs. In short, MNCs are corporations working in varied countries but controlled from one home country. Moreover, there four forms of multinational corporations: Firstly, A multinational, that disseminated organizations having strong link with parent country. Secondly, A global, widespread organization which gains expenses favor by scattered manufacturing where inexpensive assets are prevalent, Thirdly, a company international in nature that emerges on the authentic company technology. Fourthly, A transnational corporation is that unites the prior three aspects. The multinationals that are standing in this age needs organizational and particularly technological efficiency which are essential to face the prime obstacles of modern world. It is evident by Jones (2010a) that in the era of capitalism, the developed countries multinationals maintained slow attention to the customers of host countries, because they were so that indigent that they can't buy luxurious rather basic needs. Following 2nd world war, these techniques commenced to slowly alter, but there were major concerns of what to vend, and how to vend it. In consumer products, organizations primarily shifted goods from advanced countries to developing countries as their incomes increased. Nowadays, some renowned MNCs are namely, Nokia, McDonalds, Microsoft, Exon Mobile and BP. whereas, the relation between MNCs and developing countries has enticed to a acute understanding whose impressions are

abundant. Even though most of researchers have analyzed on the effects of MNCs on the developing countries. Asiedu (2004) mentions that it is essential to comprehend the features of the financial condition of the world which is classified into two segments: a usually solvent and urbanized North and usually impoverished and non-urbanized South which includes the developing countries and their over economy. Third worlds implies the usual colonial countries of Asia, central and South America and Africa. According to the United Nations conference in Brussels, the third world countries have limited institutional and manufacturing adeptness; extreme confusion to outer financial challenges, natural disasters, scarce availability to education, health. Moreover, these countries are inflicted with poor infrastructure and lack of access to information and communication technologies. Thus, a conspicuous rate of FDI in the third world countries is conducted by MNC. Consequently, FDI can alleviate poverty in host country by generating employment and create jobs. Despite the growing international trade of developing countries and activities of global economic institutions that has been noticeable in the past period, poverty and income inequality constantly remain to be the most pressing problems for developing countries. Vescicikova (2014) states that weak infrastructure is an important barrier to further development that hinders the developing countries to reach socio-economic enhancements. Hence, the developing countries lag behind not only in physical infrastructures such as, transport, water, sanitation, energy and communicating systems, but markedly also in social infrastructure which results in low life expectancy and high illiteracy rate.

4. Background of Multinational Corporations

The genesis of works of MNCs is date back in the 17th century, when the first imperialistic companies were established in the Western Europe, primarily in England and Holland. The number of companies was directly or indirectly patronized by state. Leading companies in this period were, Virginia Company, East India Company, Hudson's bay company or royal African Company. The East India Company (1600 - 1874) was one of the earliest MNCs that is a splendid instances of both the amenities and disadvantages of such endeavors. Afterwards, there prevailed a vigorous proceeds earning corporation, whereas, there prevailed a corporation working on abroad, under

very little supervision of the British government their own armed forces, proper use of military power and ultimately achieving responsibility of administrative functions of India. MNCs have come a broad history since then and they have noticed a rise in last few years. Ukessays (2018) narrates that the actual numbers of MNCs were about 7,000 in the 1970's to 78,000 in 2006, which are working in the developing with their paramount earnings.

We know that the modern MNCs has had their foundation in the East and West Indies merchants of the mercantilist era, the term multinational first existed in 1960. That phase spreads from the sixteenth to the eighteenth centuries. Two prime traits are related with MNCs: firstly, the activities of them are involved with more than one state; secondly, MNCs are completely liable for most foreign direct investment (FDI). Consequently, a company that involves in FDI and does value-rising works in more than one country is a multinational corporation. The phase 1970-2000 noticed a huge advancement of work by multinationals. When merely 7,000 MNCs prevailed in 1970, there were the numbers 63,000 indigenous firms with almost 690,000 foreign belongs by the year 2000. MNCs are extending not only in numbers but also economically. In 1998, the yearly tax of the top 5 multinationals is more than twice the GDP (Gross Domestic Product) of the 100 impoverished countries in the world. The genuine size and huge economic strength of MNCs signifies that they have the competence to impress progress plan. By reasons of the achieved advantages involved to them, the very socio-economic and political decisions by the governments are growingly provided by providing congenial atmosphere for attracting foreign direct investment and demands of marketing of MNCs. The outstanding prosperity of MNCs also empowers them to impress plan feedbacks internally.

Jones (2010b) states that at the period the 1960s and 1970s there was a common withdrawal from the third world countries. Several British abroad banks, namely, Standard Chartered and Lloyds Bank International, conducted activities on their enormous historic amenities in Asia, Africa and Latin America, climbing aboard on achievements in the United States and in Britain, recurrently with catastrophic results. Since revenues and rules expanded in India, British firms and shareholders vended

their interests and investments to Indian-belonged business institutions such as, the Tata and Birlas. Besides, Most of active US firms, along with IBM ran away from India in respond to government emphasis on supreme ownership of their involvement. The words move from Jones and Bucheli (2005) that in Malaysia the companies of British stayed famously on the 1960s, in portion that's why the new ethnic Malay government was anxious of keeping a check on the minority, ethnic Chinese business sector. In fact, the techniques of the British corporations were organized by the subsequent colonial government, and as depression with the government added, and agony about the future, the very well established merchant houses started to ransack the amenities outer part of the country. In the ending 1970s and starting of 1980s, initiatives were arranged to alleviate the role of British and other Western corporations in the vegetation and mining sides even in Malaysia. In 1981 the Malaysian government, using artisan forwards on the London Stock Exchange, safe restraint over the vast British rubber and oil palm business in Malaysia. Multinationals in the asset sector had fewer options to conciliate with governments. From the late 1960s governments in most host countries shifted to take responsibility of the foreign ownership of the natural resources in their countries. Occasionally, this was done by entirely nationalization, which ignored the organization little to negotiate. It is opined by Lundan (2004) that in most of pro-Western nations, such as Malaysia, state-belonged companies were used as auto mobiles to purchase the foreign companies which owned the country's vast rubber and oil palm plantations, with home then being shifted back to Malaysia and the individual local corporations.

5. Prospective Aspects of MNCs in Bangladesh as a Host Country

As Bangladesh is a developing country, she is in want of investment for both infrastructural development and industrial blooming. As per the word of Lan (2008) that the foreign direct investments inflow to the host countries is still one of the supreme factors for financial advancements for many developing countries. After the birth in 1971, Bangladesh has faced many boisterous situations passed decades of dictatorship covered with religious bigotry. Bangladesh is to face obstructive states in this modern competitive and global economy. Nonetheless, she has a great number of laborer resources in garments sector. In Bangladesh laborer cost is much cheaper than

any other countries. And so Industrialists from huge countries, especially from USA, UK and some European nations come here for our garments industry. Hence, This scenario of Bangladesh is alluring MNCs in great numbers here. This probable perspective is playing pragmatic influences on our economy. It is known to us that modern world is greatly influenced by the capitalism. As a result of the capitalism the gap between poor and rich is ever widening. A Multinational Company is the entity which is originated from a country (home) and spreads its activities throughout the world. In Indian sub-continent a probable market is available for MNCs. As a consequence, The Indian Sub-continent has been a tempting land of attraction for the businessmen. An alluring scope is found by MNCs in Bangladesh after its birth in 1971. Moreover, In Bangladesh the name of first MNC was American Life Insurance Company ltd. From that time, lately almost 100 MNC have been vying with Bangladesh. To have a lucid concept in Bangladesh all MNCs have been classified into five sectors. Such as the sector of banking, telecommunication, consumer products, pharmaceutical and constructions. Besides, from every sector there have been enlisted two companies for analyzing the situations. In case of banking HSBC Bank and Standard Chartered Bank as the pattern, Unilever and British American Tobacco (BAT) as the pattern in case of consumer products sector, Sanofi Aventis and Novartis from pharmaceutical sector and Holcim and Lafarge Surma Cement from construction sector. Furthermore, through borderless process of globalization and MNCs can be interpreted as a major factor to increase the worldwide trade and exchanges in an increasingly open and international economy. There has been noteworthy advancement in trade and exchanges, not only in traditional international trade in commodities and services, but also in transaction of foreign currencies; in the capital movements; in the transfer of technology; in people going ahead through international travel and migration; and in international flows of information and ideas due to globalization. Faizur (2004) states that FDI and MNCs play a paramount role in the over- all economic growth of a developing country like Bangladesh. MNCs have led to growing competition on a global basis. Notwithstanding that there having some challenges, many benevolent impacts of competition can increase outcomes or proficiency. Spreading markets and competition can motivate to specification and the determination of labor. Specification and the determination of labor, with their application for improving manufacture, now prevail

not just in a host country but also on a worldwide basis. Other beneficial effects include the economics of fortification and scope that can possibly indicate to alleviation in expenses and expenditure and are congenial to progressive financial advancements. So, there are some potential aspects of MNCs in Bangladesh as a host country that are looked over below-

- Scopes of employment have been widened by FDI of multinationals in developing economy. Moreover, most of MNCs recruit local employee for the smooth functioning thus, MNCs play significant role in the development of employment opportunities in Bangladesh as a host country.
- The industrial infrastructures of the developing countries are being ameliorated by the entrance of MNCs. Thus, multinationals can contribute to the development of infrastructures of the developing countries in different sectors. Such as, power projects, modernization of airports, ports and telecommunications of the countries.
- Liberalization of trade is the authentic aftermath of MNCs in the third world countries. In addition to this, economic liberalization upgrades the impacts on developing countries in world trading system.
- Several modes of most sophisticated technology have been transferred by encouraging MNCs in the host countries. If MNCs are set up their then several types of new equipment and machinery are not only imported enriching new technology but also skills and technology based knowledge are also shared with the skill of using the new equipment and machinery.
- Emerging an open market with greater accessibility in the global economy. This openness of MNCs augments the flow in enhancing own trade.
- Touch of technological advances that abase the cost of transportation and communication. Moreover, use of advance technology as a result MNCs reduces several cost data processing and management.
- MNCs bring about some optimistic changes in the trading institutions of host countries. These changes broaden various horizons of trade for ameliorating host economy.

- Multinationals enhance economic growth and industrial advancement in the developing countries like Bangladesh through mutually beneficial exchange.
- Foreign direct investment is expected in enormous way as MNCs main mandate is the investment of money and earning profits. MNCs are contributing greatly in expanding trade and commerce in third world countries which is key component of building foundation of business of host countries.
- Flow of foreign investment is being enhanced in the developing countries like Bangladesh as MNCs are reducing the gap in requirements of foreign capital.
- Non-debt capital begins servicing when MNCs firm reaches the stage of making profits to repatriate. In this MNCs can keep significant role in minimizing stress and strains on the balance of payment of Bangladesh as host country.
- MNCs help the host countries to enrich their exports by enlarging international links. Besides, the multinational can play momentous role in the promotion of exports in the country where they do foreign direct investment.
- Foreign direct investment is increasing in Bangladesh through multinationals that brought about rapid growth and industrialization in the developing world. Several brands namely, Tata, Hyundai, Embracer, Samsung, Infosys, Lenovo, PETRONAS, Cemex or Standard Bank are now visible everywhere. The MNCs in the developing countries are abundantly becoming significant market contributor in their regional as well as global markets by enhancing FDI.
- Growth of Balance of payment is held in the third world countries like Bangladesh through the core influence of FDI of multinational corporations.
- MNCs and domestic producers are required to pay taxes and therefore contribute to the public finances. In most of the cases, proceeds of multinationals are under the provisions of local revenue, as a consequence, a valuable source of revenue is collected for the domestic government which keeps positive impacts on the host countries.
- Range of skills is developed by inclusion of FDI in the host countries like Bangladesh which creates productive impacts in the economy of host countries.

- Wide range of training workshops is arranged by MNCs to ameliorate skills of laborers that help the host countries to make the skillful human resources.
- The more Investment of multinationals, the more motivation is expected for encouraging investments in the host countries. Furthermore, as a result of FDI the culture of competition is ever increasing in the developing countries.
- MNCs help to mitigate cost of production by their wide network of productive activity. Besides, growth of MNCs also keeps congenial impact on the business environment in the host country.
- By the increment of MNCs the host countries like Bangladesh make their market more competitive and break the monopolies.
- Foreign investment has played a central role in establishing the apparel industries in Bangladesh, with MNCs contracting production to locally owned firms, which now dominate the industry. Notwithstanding work opportunities, particularly for women, the integration of Bangladesh into the global apparel sector has produced several consequences leading to inequality. Anner and Hossain (2014) explains that Bangladesh's manufacturing success continues to depend on the country having the lowest labor costs in the world.

6. Thumps of MNCs in the Third World Countries

There is no unmixed blessing in the globe. Even though MNCs are considered as the most indispensable catalyst for out and out development of a host country, there are some pessimistic impacts that imperil the over-all economic condition of developing country like Bangladesh. Moreover, the excessive growth of MNCs enables the poor country to influence policy outcomes at the international level. Nevertheless, through the dissemination of MNCs in the host countries the developing member can face severe challenges from the part of society that can cause social and political weakness due to poverty, illiteracy, income inequality, unemployment, lower per capita income and so on. In fact, all these factors may influence the overall macroeconomic and social environment of the country, which may in turn affect smooth business practices. Again, the consumer ethnocentrism may affect the acceptance of foreign products. However, nowadays, Bangladesh is one of the most attractive targets for MNCs low regulatory burden and immense opportunities and growth potential. In contrast, this country is

prone to diversified obstructive influences which hinder the intended growth of developing countries. A number of pessimistic conditions are accentuated hereinafter that originated as a consequence of outbreak of MNCs in the third world countries like Bangladesh:-

- The increment of MNCs degrade the standards in developing countries than in urbanized nations, there is evidence that the environmental consequences of developing countries are more responsible than local firms working in such countries. This view of thinking suggests that unless we recognize that large company in general are environmentally destructive, then it would be somewhat unexpected to condition of MNCs as purely compatible to sustainable development on the basis that their overall activities destroy the environment. Local firms also sometimes engage in environmentally deteriorating activities which does not provide any justification for MNCs to continuously rift their sophisticated equipments to host countries without adequate safety initiatives.
- It is known that MNCs are the outcome of western colonialism which doesn't enhance balance of payments on both current and capital accounts. Rather the MNCs deteriorate the balance of payment in the host country.
- The large portion of investment by the MNCs acts a powerhouse where the developing countries can't match up to their level. As a result, the gap between rich and poor is ever expanding. This leads to them coercing the government into implementing policies that favor their needs at the expense of the local industry and market.
- At the time of transfer of most sophisticated technology for the purpose of global trade, the powerful MNCs deceive in various ways which tempts to technological fraud. This type of fraud hampers the progress of prosperity.
- MNCs' can easily promote or undermine economic and social rights, which can in turn affect the international community, positively or negatively, depending on the local market of an economy. Despite having scopes of developing economic-social and cultural rights by outburst of MNCs.

Nonetheless, MNCs are degrading and undermining the conditions of economic and social cultural rights.

- MNCs encourage the competitive nature of corporations by lowering their costs and they compete with the local manufacturer who can't match with them. Consequently, MNCs are creating monopoly of the economy and so the peasants of the home country are being discouraged severely.
- There are supposed to make some agreements in case of technology transfer for making smooth functioning MNCs. But it is a matter of regret that there remains special favour for MNCs. This is one kind of technological fraud with the host country like Bangladesh.
- It is true that MNCs functions are conducted beyond the state authority. For this reason MNCs lack accountability in their overall development .The old-fashioned regulatory body and the MNCs' significant economic and political power have resulted in a clash. Moreover, MNCs have exceeded the national legal frameworks and disregarded the fair international bodies that widen the burden of realizing basic rights of host country.
- The existence of MNCs is thoroughly based on a never ending race of profits and capital. Despite being a non-state player MNCs influence to the economy severely. Hence, The host countries have to always fight for sovereignty and face boisterous impact on human rights.
- As Giuliani (2010) argues that FDI lower human rights and does not enhance progress. The other opines that MNCs attempts to grow levels of GDP, greater respect for human rights, and democratization. Helpers of the first opinion are encouraged by Hymer's idea that MNCs have a positive impact in maintaining or increasing their global strength. It is true that there are some complications on different situations of MNCs in the host country. MNCs have also been regarded to take optimistic of weak state capacity in some developing countries, to gather access to assets. However, there is another view that determines MNCs to be the cardinal factors in the improvement of human rights in developing countries.
- Alluring FDI to a developing economy in this era of capitalism has become a prime concern of host countries. Besides, it is true that the more competitive

we are in the global economy, the lesser we follow regulations which is annihilating in nature. To attract the foreign invest we remain in liberal implementation of regulations. Hence, MNCs are capricious to continue any detrimental activities which are prone to imperil the balance of environment of the host country.

- Through capital investment the multinational corporations maintain their utmost endeavor to capture the market of the third world countries. This type of control by MNCs hinder the natural growth of economy of developing countries.
- Of late most of MNCs are following the capital intensive techniques that reduce opportunities of employment in host country like Bangladesh. This capital intensive techniques may be imported by large domestic firms but presently they are being increasingly used by multinational corporations which bring their technology when they in Bangladesh as a host country. Emphasizing this factor, Ayesha (2006) states that in this case technology may be inappropriate not because there is not a spectrum of technology or inappropriate selection is made but because the technology available is circumscribed by the global profit maximizing motives of multinational companies investing in the less-developed country concerned'.

- Most of the cases the multinationals influence over the political government of the host country. Given their economic importance, governments will often agree to changes that may not be beneficial for the long-term welfare of their people.
- Multinationals have been accused of cutting corners on health and safety in countries where regulation and laws are not as rigorous.
- Trimba and Macharia (2014) narrates that in the systematic change of the economic condition of world, the dissemination of huge business has become a new real thumps of MNCs to the overall independence of the different states. In Kenya for example, in spite of several types of interference and economic theories that the country does to continue poorly.

- In the circumstances of the developing countries, the MNCs can never be viewed with imperialism. A new concept of attacking MNCs has come forward over the previous records. They have attained the grief of the previous tense that stated their precursor and have augmented on the competence to earn more proceeds and bestows to overall improvement on their host countries.
- Fast paced growth of populations will tend to a larger market. However, in a populous country, buying energy of its inhabitants remains slow because of lower per capita income. Poverty and illiteracy may be highly effective skilled but large labor force combating against unemployment problem, all of which can be described to a obstructive result for environment. On the other hand, Bristy (2015) states that low life expectancy may imply indigent status of living in a country and other social impacts that again represents social risks for business in the developing countries.
- MNCs always intend to reduce tax liability to the least. One way of doing this is through transfer pricing. The objective of this is to reduce their tax liability in countries with high tax rates and increase them in the countries with low tax rates. They can do this by transferring components and part-finished goods between their operations in different countries at differing prices.

7. Whether MNCs are menacing to Sustainable Development or not:

"Sustainable development is the pathway to the future we want for all. It offers a framework to generate economic growth, achieve social justice, exercise environmental stewardship and strengthen governance" -Ban Ki-moon.

In a period of capitalism MNCs are determined as one of the most important segments to shape the future of the world. Indeed, those segments have brought both rise in wealth and a harmful impression on the environment occurred by the trade related of MNCs. According to the UN, all states will try their best to materialize the Sustainable Development Goals (SDGs). From among 17 goals of SDGs, five goals effectively related sustainable development goals. Those are here: (a) Good health, (b) Clean water and sanitation, (c) Climate Change, (d) Life bellow water, and (e) Life on land. These five remarkable points are directly at perilous situation due to the contamination

of environment. Since many MNCs are in a several members of states, and exploit cheap labor from a state to produce products in order to vend the goods in other states, it has made a state whereas most of MNCs are richer than most of the world's states.

According to global thinking, it known to all that matters concerning environmental sustainability were first emphasized by the 1972 Stockholm Declaration, the terminology was first narrated by the WECD [World Commission for Environment and Development] . Thus, Sustainable development stands for any form of development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs'. Human's intention plays a significant role in functioning of the natural environment that resulted in a remarkable thinking regarding the role of MNCs in society. It is said that MNCs are the most significant factors associated with environmentally destructive works. Nonetheless, MNCs keeps the long-term sustainability of the environment besides their narrow commercial purposes. For the very interest of business, sustainable development indicates that the acquisition of 'commercial techniques that face the needs of the enterprise and its stakeholders. If MNCs are adorned with the fact that the grown technology can contribute to improved environmental management capacity, where MNCs are the main means to achieving sustainable development, because MNCs are most effective source of modern technology transfer and etc.

Generally, Multinational companies are enhancing a chain of supply globally which contributes greatly to the assurance of Sustainable Development Goals .The MNCs are responding with having involvement in third world countries. Moreover, Terpstra and Ofstedah (2013) mentions that MNCs are making people aware of regarding impacts of climate change including poor communities in developing countries, where many people are especially vulnerable to heat waves, sea level rise, and other climate change impacts. Briefly, here are narrated three ways of MNCs that are playing positive role in the host countries. Such as, (a) Building a Resilient Workforce : Since MNCs start detecting climate risks in their operations and supply chains, many risk reduction measures can benefit low-wage (b) New Goods and Services : MNCs creates new climate resilient to create new climate-resilient goods and services. (c) Redesigning Current Products: MNCs not only develops new goods but also services. Economic

and Social Council (2017) narrates that in 2015 a remarkable agenda has been declared by United Nations named 'Sustainable Development Goals'. Inequality is one of the most important provisions of SDGs determined by United Nations. Moreover, through the analysis of some statistics it is said that income rate increased by 11 per cent in developing countries between 1990 and 2010. Indeed, one of the chief issues in overcoming this problem was reducing income inequality. Notwithstanding that, statistics have narrated that the richest 10% of the world's population were earning up to 40% of the total global income, whereas, the poorest 10% were earning not more than 6%. Furthermore, to make equality as concept of sustainable development a coherent regulation and policies should be developed in order to monitor the path towards achieving greater equality. As mentioned above, financial sustainability is a precondition for attaining sustainable development. The United Nations recognized that by setting Sustainable Development Goals such as: a) No poverty, b) Zero hunger, c) Decent work and economic growth, and d) Responsible consumption and production. In fact, acquisition of these goals is sometimes hampered by MNCs. MNCs actions in third world states are creating a lot of the current problems in this issue area because the basic role of it is to make a profit for its shareholders and. In recent years developing states are increasingly trying to attract as much foreign direct investment as possible.

After all, MNCs are instructed by the desire for profit and they often lack Corporate Social Responsibility (CSR). This results in spread of poverty and hunger and prevents honest work and economic progress and responsible consumption and production thus directly endangering the achievement of Sustainable Development Goals. Therefore, the task in front of the member states of the UN ECOSOC is to decide what role MNCs can have in achieving economic sustainability and sustainable development while still making profit and fulfilling its main purpose. Due to the growth of globalization worldwide and a more liberal approach to international politics, MNCs have been able to go into developing nations and create jobs.

8. Propitious Mechanisms of MNCs for the Third World Countries:

The mantle of MNCs should not be unfettered because the aftermath of unchecked authority is not praiseworthy. In this global competitive economy, through the name of help and cooperation the capitalists are striving in a triumphant march. Hence, the gap between poverty and wealth is ever expanding. Indeed, it is fact that there are both cynical and consequential aspects of multinationals. It is undeniable fact that through FDI the MNCs contributing greatly in the overall economic growth of a developing country. Nonetheless, in all –inclusive role of MNCs in the host countries is not amicable. Some reminiscent mechanisms have been mentioned here to make the interference of MNCs towards the host countries more justifiable:

- The host countries can improve their business environments by removing regulatory and administrative red tape, which is often an impediment to entry and operation of companies. Besides, excessive licensing and permit requirements, and time-consuming export and import processes can make a country less attractive to FDI.
- Having target to promote specific sectors for FDI so that host country can enjoy effective outcome. Sectors with strong growth potential and relevance for many developing economies include clean energy, agribusiness, business process outsourcing, healthcare, and tourism.
- In appropriate sectors FDI by MNCs result in a win-win situation for all parties. Furthermore, for the host countries, it brings foreign capital, technology and managerial know-how resulting in enhanced access to foreign markets and increased competition.
- In the book named 'Corporate Social Responsibility of Multinational Corporations in Developing Countries'; Ako (2014) mentions mechanisms for making MNCs more effective for host countries. Here, the mechanisms for Curbing International Corruption of MNCs under a process:
- (a) Global governance: Global governance indicates the cooperation of various states, multilateral agreements and non-state parties to build multiple plans through global administrative law. Nonetheless, the author narrates that global

governance has every possible aspects to contribute to progress and removing corruption.

- (b) International law: The application of international law in fighting against international corruption from different parts of the world is essential. And regional international laws are not very influential in dealing with international corruption. About the potential roles from multilateral organizations referring to the organization for Economic Co-operation and Development (OECD) Anti-Bribery Convention and UN Convention against Corruption (UNCAC), the author summarizes that though there is great possibility for both treaties to be effective mechanisms in the war against international corruption that state parties are responsible for giving effect to treaty provisions. For alternative, it evaluates direct corporate responsibility, in fact, the recognition of corporations as objects and not subjects of international law is a major hindrance.
- (c) Civil remedies: The effectiveness of civil remedies, specially the realization of arbitral awards that have allegedly been tainted by bribery is examined. It narrates the argument that arbitration tribunals have an important role to play in curbing international bribery by adhering to global condemnation of corrupt practices.
- (d) Corporate governance: The effectiveness of corporate governance may keep significant role in curbing international bribery as 'limited but important.' The proposal is described on the idea that while corporate governance conducts the internal rules of the corporation, issues of bribery are external to it. Thus, with effective corporate governance shapes in place, management activities may be indicated to analyze with (possible) grave outcomes where they have, on behalf of the corporation, engaged in transnational bribery.

- Guislain and Kusek (2010) opine that for multinational and regional corporations, FDI can mean greater efficiency, lower costs and access to new markets and resources resulting in more efficient and effective global production networks. As FDI flows rebound and within a few years regain pre-crisis levels, both countries and companies stand to benefit. Keeping markets

open and appropriately regulated should increase the likelihood of renewed FDI flows.

- MNCs need regulations and should be permitted in selected sectors. Moreover, there should not be open door policy for multinationals.
- Initiatives should be taken to encourage local manufacturers through the provisions of a conducive operating environment for them to operate and compete favorably with foreign counterparts.
- Fundamental facilities of social infrastructure such as roads, electricity, pipe-borne water should be put in place in order to reduce the cost of doing business in the host countries. Moreover, there should be tax waivers for young local producers.
- The approach of corporate social responsibility should be regulated in the process of MNCs so that multinationals are curbed for the involvement in corruption particularly in the developing countries.
- There should be control of frequent changes in tax rate and profit shifting strategies should be more complicated and ambiguous.
- Moreover, to make the process more effective three ways are opined by Gafaru (2007): Firstly, international efforts should augment, not restrict, the policy space and powers of states to regulate foreign investment in order to meet national developmental objectives. The local content provision under the proposed TRIMS (Trade-Related Investment Measures Agreement) agreement has the potential of weakening the ability of developing host countries to bargain strategically with multinational enterprises and maximize their contribution to sustainable development. Secondly, in relation to the argument that developing country governments are so corrupt that they can hardly implement effective regulatory mechanisms against powerful MNCs, it is important to recognize that bribery often involves two partners: the giver and the taker. And because both parties benefit from corruption, either of them may initiate a corrupt deal. Thus, for a more holistic approach to achieving sustainable development, the international community needs to monitor effectively the conduct of foreign multinational corporations who sometimes engage in offering bribes to public officials to receive preferential treatments.

Thirdly, there is need to monitor and sanction not only global corporations, but also national governments that abandon their regulatory responsibilities of corporate behavior. Taking the traditional and well developed route of establishing obligations on states in the form of legally binding agreements such as through conventions, rules could be developed requiring the state to regulate the operations of MNCs in their jurisdiction. If a state fails to fulfill its obligations, it could be penalized through an analogous body to regional human rights courts, such as the European Court of Human Rights, or the Inter American Court of Human Rights. This would aim to provide incentives for the development of national legislation and institutions that would act to regulate companies. National legislation would recognize countries as both home and host states, and provide the facility to hold the activities of MNCs and their subsidiaries in host countries to account in home countries, where appropriate.

9. Conclusion

Most of cases the study explores the relationship between multinational corporations and economic development of the country. Therefore, this study is set to investigate the influence multinational in host countries on constructive and obstructive view. Abundance of cheap labor is prevalent in the developing countries because they are enthusiastic to solve economic demand. Moreover, the host countries grant liberal environment provisions to entice FDI through MNCs. For the very economic enhancement in third world countries like Bangladesh all kinds of foreign direct investment is highly welcomed. Hence, the rules of developed states are much stricter than those of developing states. In addition to this, various forms of dynamic economic planning of international organizations (like World Bank, IMF, WTO) are being inflicted on the third world countries. Consequently it is being tougher for them to cope with the competitive world. Moreover, in this case the MNCs are directly interfering with national sovereignty. Furthermore, by the name of borderless trade the MNCs are having access to resources and cheap labour. Besides, they are having profound impact on government policy through the threat of market withdrawal. MNCs exclusively conducts their activities only to achieve profits and capital but not concerned with

proper management as to corporate social responsibility. For aligning interest the MNCs maintain effective strategies with changing political realities and most important strategy was the localization of staff. The localization of its management in developing countries intensified thereafter, driven in part by a desire to reduce costs. Thus, the study highlights optimistic impacts of foreign direct investment in host country. In fact, according to Organization for Economic Cooperation and Development (OECD), FDI is an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor. Moreover, the ability and intentions to control foreign affiliated companies are the most critical characteristics that differentiate FDI from the foreign portfolio investment. One of the main characteristics of FDI is that MNCs are seeking lasting return from their investment, and the only capital that is provided by the direct investor.

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Toponymic Decolonization in Bangladesh

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Abstract

Toponymy is the academic study of placenames based on taxonymic, geographical and especially etymological information. Toponyms, the terminological lexemes of placenames, we can infer from this definition, are studied in toponymy. In their clipped form, toponyms are written as TOP(s).The conquering powers as part of their colonial enterprise did not remain satisfied with mere territorial acquisition. To perpetuate their rule, the colonizers encroached on the cartography of the subjugated peoples. They emerged as the makers of maps and inscribed their toponymic systems on the paper landscapes. By deleting, replacing or partially substituting the indigenous names from the maps of the occupied lands, the imperial powers committed 'cultural genocide'. After unyoking themselves from colonial subservience, the newly independent countries, as a marker of the reconfiguration of power dynamics, took initiatives to change colonial placenames. We have seen countries like India, Pakistan, Namibia, Sri Lanka, Canada and many more have addressed the issue of toponymic injustices by changing the colonial names of their geo-objects. Unlike her neighbours, Bangladesh, surprisingly, seemed to be phlegmatic on the issue. She came out of the long hibernation almost after 11 years of independence. In 1982, the Ershad government promulgated an ordinance about the change of the colonial orthography of the capital city from 'Dacca' to 'Dhaka'. Bangladesh reverted to its previous stand of inertia after this and finally uncocooned herself in 2018. The current government approved a decision to change the colonial orthography of five districts on 2nd April, 2018. In this paper, we have a glimpse at the colonial toponyms of Bangladesh. Side by side surveying the colonial placenames, here we try to unfold the mechanisms used by the alien rulers to impose their system of nomenclature on us. Apart from taxonomizing the colonial TOPs, this article also sheds light on the toponymic change initiatives and the concomitant pockets of resistance in Bangladesh. This exploratory study has identified some problems that go hand in hand with spatial name change and in the light of the problems, itputs forward some recommendations for efficient management of placename reforms. This research strongly suggests that Bangladesh should, following the guideline of the UN, institute a National Commission on Placenames composed of multidisciplinary experts to maximize the benefits and minimize the negative impacts (such as incurring huge expenses on the national exchequer and loss of international familiarity etc.) of toponymic changes.

Key Words: Decolonization; Toponyms; Placename; Orthography; Exonym; Endonym; Identity.

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Prolegomenon

General H.M. Ershad, the ex-dictator of Bangladesh, performed myriads of misdeeds during his almost one decade long rule to perpetuate his grip over state power. To achieve his end, he employed many Machiavellian ploys and stratagems. Among the few decisions taken and implemented by the Ershad regime that earned him applause at home and abroad included his initiative to change the orthography of the capital city which still bore the colonial legacy. In 1982, the Ershad government decreed that 'Dacca' should be spelled as 'Dhaka'.

Bangladesh reverted to its previous state of inertia after the orthographic decolonization of Dhaka. After almost 37 years of hibernation, she finally uncocooned herself in 2018. On 2nd April, 2018, the present government approved a decision to change the colonial orthography of five important districts in the meeting of the NICAR (National Implementation Committee for Administrative Reforms). The orthographically decolonized districts are Chittagong, Comilla, Bogra, Jessore and Barisal. The new-version of these TOPs in English are Chattogram, Cumilla, Bogura, Jashore and Barishal. Though a good initiative, the decision to alter the spellings of the afore-mentioned districts drew criticisms along with applause.

What prompted Ershad and the incumbent government to change the colonial orthography of Dhaka, Chattogram etc. is subject to different speculations. But one incident has proved that it will be of great utilitarian value for the aviation industry. Lazarus (2013) reported in the *Los Angeles Times* that two Dakar-bound Turkish airlines passengers from the US landed in Dhaka in 2013 being misled by the almost identical airport codes and homophonic relationship between Bangladeshi Dhaka and Senegalese Dakar! Who can say that this type of travel nightmare will not happen in future to more travelers bound for China ending up in Chittagong or the reverse?

A Brief Terminological Note

Toponyms: Placenames. In the abbreviated form it is written as TOP(s).

Toponymy: The academic study of placenames. Toponymy also goes by the name of Toponomastics. It is an important branch of Onomastics, the study of names.

Exonym: The name by which a geographical object is known to the foreigners. For example, the exonym of Bharat is India.

Endonym: The native or indigenous name of a place. For example, the endonym of India is 'Bharat'.

Hagiotoponyms: Places named after saints. For example, Saint Martin island in Bangladesh.

Microtoponyms: Names of small geographical objects like streets etc.

Theoretical background: The politics of naming and renaming

Names are one of the most important components of the power-laden discourses of identity and colonialism. According to Lacan (1965), they are points of identification and hence proper names should possess 'mineness'. Like other proper nouns, toponyms are also semiotically loaded building blocks of the imperial discourse. Keeping this point in mind, the western powers as part of their colonial enterprise intentionally changed the indigenous toponyms of their conquered territories. In a bid to ensure the erasure of native culture and language, these new makers of maps inscribed outlandish graphemes into their paper landscapes. As names are semiotically loaded markers of power, authority and identity, the invaders imposed their system of nomenclature on the subjugated peoples wiping out their native names of important places. The colonial remapping was done in a couple of ways –

1. By fully Europeanizing the indigenous placenames
2. Through the wedding of European anthroponyms with native elements

1. Europeanizing the toponyms of the conquered territories:

The colonizers committed toponymic injustice of this type in two ways – either they wiped out the indigenous toponyms completely or they adjusted the existing names to the phonological system of their language. What is known today as Zimbabwe was christened as Rhodesia by the conquerors. The Anglicized version of Harare was Salisbury. From Zimbabwe, if we shift our attention to the topography of Bangladesh,

we notice the presence of 'St. Martin's Island' as an example of the first category while 'Chittagong' is an instance of the latter class.

The colonial placename 'Chittagong' is known as 'exonym' in toponymic literature. The endonymic version of it is 'Chattogram'. One interesting example of an imposed toponym which is widely used in its exonymic form is 'St. Martin's Island'. In the construction of 'exonymic structure', the conquerors followed this basic formula:

Bare anthroponyms + Classifier (Saint Martin + Island= St. Martin's Island)

In case of the second example, 'Chittagong', the rulers officially validated the native version of the placename by modifying it to suit their speech system and orthography.

2. Marriage of European anthroponyms with native affixal elements:

As part of their spatial management, the colonial masters used this type of nomenclature copiously. In this method, the name of an important person in the colonial administration or the anthroponym of an influential figure from the metropolitan centre was suffixed with a native element. For example, Daltonganj (India), Abbottabad (Pakistan), Eliotganj (Bangladesh) etc. In their colonial onomastics, the English practiced this system very widely and visibly in the subcontinent. The addition of an indigenous element at the suffixal position gave a nativized look to the new toponym and thus giving the impression to the subjugated people that their land is not appropriated, after all.

After the departure of the colonial powers, nationalistic zeal reached new heights in the newly independent countries. As part of their assertion of power and construction of distinct identity, the policy makers of the ex-colonies wanted to make sure that, in the words of Andrews (1997), ' The very dogs in Belfast will bark in Irish'. To map the colonizers out, most of the leaders wanted to revert to their spatial history.

To address the issue of toponymic injustices perpetrated on the subjugated peoples, the governments of those countries resort(ed) to the following ways:

- Restoration of the native or pre-colonial toponyms: The governments of the newly independent countries opted for the restoration of their indigenous placenames. For example, the colonized 'Ceylon' after independence has emerged as 'Sri Lanka'.

In the global map what we currently see as 'Zimbabwe' was known as 'Rhodesia' in the colonial period.

- Utilization of native (re)sources in new toponym formation: To reconfigure the power dynamics in discourses on placenames, the policy makers of the ex-colonies also make use of their internal resources from language, history, mythology etc. For example, the city of Bombay in India was renamed as Mumbai after the Hindu goddess Mumbadevi in 1995. The eponymous city, Washington, owes its name to George Washington, the father of the nation of the US.

Anglicized placenames in the sub-continent

Like other colonized landscapes, the Indian sub-continent also had to endure the pains and pangs of the imposition of alien names. The Britons anglicized many placenames in the subcontinent for their convenience. They consummated the process in dual ways – either by renaming the place after a famous Briton (Abbotabad /Jacobobad/Victoria terminal/) or by adjusting the placenames to English phonological system. New establishments, especially, the railway stations were named after important English stakeholders in the colonial administration. To make the names easily pronounceable by the Indians, they incorporated native elements at the suffixal position. For example, Daltonganj, Robertganj, Wyndhamganj, Eliotganj etc. This Anglo-Indian nomenclature probably was also aimed at dispelling the fears from the minds of the Indians that their land has been taken away from them by completely alien forces. Some names, however, were fully Anglicized. Some examples of this type culled from Banerjee (2006) are -Victoria Terminus, Hillsgroove, Palmer (India) Montgomery, and Sandeman (Pakistan). St. Martin's Island in Bangladesh belongs to this group. The Britons altered some placenames by adjusting the orthography to the English phonological system. For example, Delhi, Jessore, Dacca, Calcutta etc.

Anglicized placenames in Bangladesh

From the inception of colonial rule to the present times, Bangladesh has been under three flags – British, Pakistani and Bangladeshi. Placenames in Bangladesh bearing colonial marks fall in the categories already mentioned in the preceding paragraph. A

brief survey of the Bangladeshi topography reveals that we have fully, partially and orthographically Anglicized toponyms.

One place bearing unamalgamated colonial legacy is St. Martin's island. This is an example of fully Anglicized toponym. In toponymic literature, this kind of name is known as 'Hagiototponyms'. Even today, we see some establishments, roads and bridges bear colonial legacy in different places of Bangladesh. These names, known as 'Microtoponyms' in Toponymy, include English Road, Curzon Hall, Holy Cross College (in Dhaka), Edward College (in Pabna), Carmichael College (in Rangpur), Victoria College (in Cumilla), Hardinge Bridge (over the river Padma) and so on.

Some placenames bearing native elements are Cox's Bazar, Eliotganj and Char Alexander. The retention of the indigenous element at the affixal positions was aimed at duping the colonized people. By this ploy, the rulers wanted to create an impression in the people that their land is not taken away from them.

In the colonial onomastics of Bangladesh, the above toponyms reveal, we see the presence of three techniques employed by the foreign rulers in the management of placenames –

- Complete Europeanization of toponyms
- Partial Europeanization of toponyms
- Adjustment of existing placenames to their speech system

The topography of independent Bangladesh makes it clear that the English rulers practiced the last form of Anglicization generously. They tried to retain the native names but they spelled the placenames adjusting to their system. Thus we have got Chittagong from Chattogram, Dacca from Dhaka, Jessore from Jashore, Bogra from Bogura, and Comilla from Cumilla. Though the government has decolonized the orthography of six districts so far, directives need to be issued on the spelling of some more macrotoponyms. For example, Laxmipur, Mymensingh, Brahminbaria, and Sylhet.

Recent (orthographic) changes of placenames in Bangladesh

Though naming and renaming is a continuous process closely intertwined with the power dynamics, this is treated as a thorny issue everywhere. The issue of name change, according to Lister (2005), 'is a minefield. Therefore, there must be a strategy in place about what criteria should be used to rename places.' We see the reflection of Lister's opinion regarding the toponymic changes in Bangladesh. The Bangladesh government on 2nd April, '18 approved the proposal for orthographic changes of some important places including Chittagong, Comilla, Bogra, Barisal and Jessore. It was decided that the endonym 'Chattogram' should be used everywhere instead of the exonym 'Chittagong'. In addition to this, the colonial orthography of 'Comilla', 'Bogra', 'Barisal' and 'Jessore' was changed to 'Cumilla', 'Bogura' 'Barishal', and 'Jashore'.

Throwing the cat among the pigeons?

Placename change initiatives, as the general trend discloses, meet opposition everywhere in the world and Bangladesh is not beyond the diocese of this global tendency. The decision, though praiseworthy, drew mixed feelings from the people. A section of the people hailed the government for the bold decision. However, it also engendered heated debate in the social media sites. Many citizens commented that the decision was abruptly taken without consulting the political parties, professional bodies and the academia. One of the major political parties of the country, the BNP which is currently out of the parliament, claimed that the placename change was mainly aimed at changing the orthography of Bogra, the birthplace of its founder. Apart from inviting political cynicism, the decision also drew vitriolic criticism from the academicians and linguists. Among the distinguished scholars who criticized the change are Professor Mohammad Ali, ex-Vice Chancellor of Chittagong University, Professor Sikandar Hyat Khan, Vice Chancellor of East Delta University and Emeritus Professor Serajul Islam of Dhaka University. They think that this change is unnecessary as it was not demanded by the people and moreover, it will incur expenses on the national exchequer. Professor Ali opines that the change will diminish the internationality and traditionality of the port city while Professor Khan thinks that it

will hamper the Bangladeshi trade. Professor Khan reminded that ultra-nationalists in India wanted to revert to the endonym 'Bharat' but after realizing the huge impact of the change, their jingoistic enthusiasm evaporated and they had to change their mind. Emeritus Professor Serajul Islam thinks that the money spent in placename change could have been better utilized in other important sectors. In good tune with the trio just mentioned, many users of the social media expressed their reservations on the issue. According to them, though a good decision, it was hastily implemented without any solid homework. This is reflected in the sound-letter disharmony of some places. In this regard, the popularly cited example is the transition from 'Comilla' to 'Cumilla'. The new orthography bears the risk of being mispronounced as 'Chumilla' by the foreigners. The best alternative for this could have been 'Kumilla' which unambiguously corresponds to its Bangla version. This type of anomaly has happened because of the non-inclusion of language professionals in the committee.

Hasnat (2018) has pointed out three practical problems related with the recent name change in Bangladesh –

- Changing the placenames in the passports
- Changing the placenames in the National Identity Cards (NID)
- Changing the placenames in the academic transcripts and certificates

All the three points have pragmatic implications as these incur extra expenses on the people. The problems are, however, not beyond solution. The government can issue directives to the concerned bodies like National Passport & Immigration Directorate, District administrations, universities and education boards to change the names, where necessary, without charging any fees for a certain period.

Name change initiatives are generally marked and marred by the simultaneous presence of arguments and counter-arguments. The dichotomy between need (social services, alleviation of poverty etc.) and greed or craving/luxury (cheap political popularity) dwarfs other components of the argument-counterargument spectrum. Contrary to the popular claims as voiced by the three scholars and the users of social media mentioned in the beginning of this section, Brown's (1999) verdict on toponymic changes, is noteworthy ' ….the dichotomy between spending money on

social services or on name changes is a false one …. In the long run, changing names is beneficial to social programs, because it helps people crawl back into history, to have their existence on the official record somewhere.'

Why have we retained the colonial (orthography of) placenames?

After independence from the colonial yoke of Great Britain, India and Pakistan renamed many places bearing colonial legacy. The erstwhile Lyallpur has become Faisalabad in post-independence Pakistan. Cambellpur and Fort Sandeman in Pakistan have been rechristend as Attock City and Zhob respectively. The Indians also indigenized many place names after 1947. For example, India changed Wolseleyganj to Waris Aliganj and McDonald's Choultry to Magudan Chavadi (Bannerjee, 2006).

If we have a glimpse at Bangladesh, we do not see any remarkable policy initiative on the part of the state to wipe out the remnants of our colonial legacy from the Anglicized placenames. The question that crops up in our minds is that why have we retained the colonial names or colonial orthography? The answer, according to Shekhar (2011), lies in our Eurocentric mindset. We have changed names of many institutions or establishments after our independence from the Pakistani rule. For example, the names of Jinnah Hall and Allama Iqbal Hall of Dhaka University were changed to 'Masterda Surrja Sen Hall' and 'Sgt. Zahurul Haq Hall'. But we still retain with care the bizarre colonial name ororthography of some of our important places; for example, St. Martin's Island, Cox's Bazar, Sylhet, Mymensingh etc.

Theoretically speaking, Fanon (1963) thinks that the colonizers have successfully implanted the notion of white-superiority into the minds of the subjugated peoples. It was so craftily consummated that most of the ex-colonies still enjoy to suffer from colonial hangover. Thiongo (1986) echoes Fanon (1963) in his distinctive manner. According to this vociferous anti-colonialist, language and culture have been used as weapons by the imperial forces. By imposing their language and culture, the colonial rulers alienated the natives from their roots. Alienation of this sort, Thiongo (1986) compellingly argues, generated hatred for native culture and reverence for the invader's language and culture. This reverence for the colonizers and everything connected with them can account for our retention of colonial placenames.

In addition to the Eurocentric mindset, there are some other factors that have kept our rulers far from addressing the issue of toponymic decolonization. These are -

- Fear of change and the extra effort to cope with it
- Intention to avoid controversy which might prove to be beneficial for the political opponents
- Financial factor

How to de-Anglicize the colonial placenames?

As part of its commitment to maintain and promote indigenous (in the sense of native) cultures, heritage and languages, the UNESCO, under the aegis of the UN, has been organizing international seminars and symposia. The UNESCO has a specialized body named UNGEGN (United Nations Group of Experts on Geographical Names) that works to help promote local toponyms. To rectify the toponymic injustices inflicted on them, many countries have formed their own commissions. For example, Namibia has a 'National Names Commission'. In the US, the bodies that work in this regard are USGN (United States board on Geographical Names) and USGS (United States Geological Survey). Moreover, there are many local 'Name Societies' across the US. In Canada, the 'Truth and Reconciliation Commission' is entrusted with the job of promoting indigenous toponyms.

To purge the colonial toponyms of the stigma that they bear, the International Congress on Toponymy and Anthroponymy was organized in Paris in 1938.With the same end in view, the First United Nations Conference on Geographical Names was held in 1967. It recommended that each country should form a national geographical names authority.

Bangladesh is a signatory to the UN charter. Yet Bangladesh has not formed a national names commission to promote native names. Even without a national commission on names, Bangladesh has already changed the colonial orthography of some of her important places (including the capital city) on two occasions. From our experience, we have seen that though a thorny issue, decolonization of placenames or their orthography is not a very tough job. We already, as has been mentioned, have two instances in Bangladesh. President Ershad changed the orthography of Dacca to Dhaka

in 1982 by promulgating an ordinance. In 2018, the present government approved a decision to change the colonial orthography of some important places including Chittagong, the second largest city of the country.

As we have experienced a democratic transition with the fall of Ershad in 1990, now the job can be done in more systematic ways -

- Bangla Academy can be entrusted with the task. As the regulatory body of the Bangla language, it has adequate resources to accomplish the work.
- The International Mother Language Institute at Dhaka can perform the task.
- A multidisciplinary panel of experts can do the work. The body can be composed of representatives from English Departments, Bangla Departments, History Departments, Political Science Departments, Bangla Academy and Cultural Affairs Ministry.
- A national names commission following the guidelines of the UNGEGN can be formed to plan and execute toponymic changes.

Will de-Anglicization obscure the places?

Many countries around the globe have changed their (colonial) names. For example, Ceylon has become Sri Lanka. The erstwhile Rhodesia has been rebaptized as Zimbabwe. Burma has strongly emerged appareled in a new nominal robe – Myanmar. The hub of British colonial activities, Calcutta has been orthographically reformed as Kolkata. Bombay is now Mumbai. Pashchim Bangla has been cleansed of its colonial stigma.

Toponymic change entails multiple sectors – finance, history and heritage, language and culture, international relations, politics and the aviation industry. If this multi-sectoral link is taken into cognizance, the issue of placename change becomes super-charged with complexity. The change of placenames or their orthography, especially the ones that have airports (e.g. Chittagong, Sylhet etc.) will incur substantial expenses on the state exchequer. But monetary issue does not seem to be a serious hurdle as Bangladesh has changed the name of her prime airport from Zia International Airport

to Hazrat Shahjalal Airport. Apart from the financial aspect, another issue comes to the fore-front because of its pragmatic nature. Will the decolonization of placenames obscure the places? Let us try to answer this question from our experience. Among the colonial placenames in Bangladesh 'Chittagong' is obviously Chinese sounding, Mymensingh is Indian sounding, Cox's Bazar has both English and Persian flavors, St. Martin's is Pacific sounding. The places can be purged of these alien phonetic elements if we change their colonial orthography or if we rename them. If we change 'Chittagong' to 'Chattagram' (the official version is 'Chattogram' which does not match with its Bangla version), the place becomes distinctive and no pilot will, erroneously, take Chittagong-bound plane to China or vice versa. The same observation applies to other places with 'exotic' elements in their names.

In the light of the examples mentioned in the first paragraph of this section, we can say that de-Anglicization will not obscure the places. Rather, this will make the places distinctive and will help dispel confusions about the locations of the places from the minds of the foreigners. Strong media, internet and social media sites can be of instrumental help in rapid global dispersal of the new toponyms. For example, if we indigenize Cox's Bazar as 'Saikat Nagar', a person living in the remotest corner of the globe will come to know about it within seconds through the internet and mobile telephony.

As we have joined the cyber-bandwagon keeping good pace with the global communities, following the examples set by India ('Bombay' 'Calcutta' and 'West Bengal' changed to 'Mumbai', 'Kolkata' and 'Pashchim Bangla'), Sri Lanka (the former 'Ceylon'), Zimbabwe ('Rhodesia') and many other countries, we can reform and indigenize our toponyms. The toponymic change, orthographic or otherwise, will in no way substantially affect the familiarity of the places concerned. Do we have any difficulty in recognizing Mumbai or Kolkata? The answer is, certainly not.

Conclusion

According to Nash (2010), toponyms speak of 'collective identity' and they are 'all about issues of power, culture and location'. Placenames are among universally acknowledged identity markers and hence naming and renaming of geographical

objects are integral components of power-politics. The processes signal shift of power and identity and are indicative of 'celebrations of cultural retrieval'. Colonial forces across the globe changed the indigenous toponyms to suit their speech system or purpose as part of their project of appropriating the alien territory. This graphemic landscaping projected onto the cartography of colonized lands in the distant shores aided them in perpetuating their rule. Nationalistic forces, on the other hand, after unyoking themselves from the imperial powers, revert to pre-colonial indigenous names or rebaptize their places as part of their distinctive identity construction. The change of colonial toponyms as a part of the assertion of independent identity is visible everywhere in the world. In good tune with the global practices, India and Pakistan, our two neighbours, have changed most of their colonial toponyms. Unfortunately, even though we have a tendency to ape our neighbours in unnecessary activities, in this project of identity construction, we have remained passive. Things, however, have started to take the desired twists in the recent times. The initiative that was taken by the Ershad regime in 1982 with the orthographic change of our capital city has got momentum with the recent decision of the present government to change the colonial orthography of five districts. Side by side earning applause, the government has also drawn bitter criticisms from different quarters for abruptly changing the long-established orthography of the important places. The management of placename change can be more efficiently consummated in future with the formation of a National Placename Commission. In this regard, Bangladesh can follow the suit of Canada, the USA and Namibia. These countries have many specialized bodies like 'Placename Societies' and 'National Commissions on Placenames'. The UNESCO can be of instrumental help to Bangladesh in the formation of a national commission on placenames. In policy formulation for future toponymic changes, Bangladesh can get specialized professional help from the UNGEGN (United Nations Group of Experts on Geographical Names).

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Social Responsible Marketing Practices In Banking Industry: A Study on Private Commercial Banks of Bangladesh

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Abstract

Social Responsible Marketing is the ways and means through which the corporate organizations have executed their philanthropic visions for social welfare. It is a powerful way of making sustainable competitive profit and achieving lasting values for stakeholder as well as shareholder. Nowadays, many private commercial banks in Bangladesh have created their individual brand image in the field of Social Responsible marketing by taking various social initiatives in the era of social welfare and community development. The main objective of this study is to analyze the SR activities carried out by selected private commercial banks of Bangladesh. Research findings indicate that social responsible marketing is strongly associated with level of satisfaction that is the higher the social responsible scores the higher their customer satisfaction. Furthermore, the positive sign of correlation value implies a positive relationship; the banks which highly practice the components of social responsible marketing their customer satisfaction will be higher and vice versa. For collection of primary data, 180 bank executives and 360 bank customers from 09 private banks of Bangladesh have been selected. Among the three generation banks, stratified sampling method has been used in selecting sample banks and purposive sampling technique has been applied in selecting executives and customers. Qualitative and quantitative research methods have been used in this study. Secondary data have been used for desk study. For data analysis, sophisticated program Statistical Package for Social Science (SPSS) has been used.

Key Words: Social Responsible Marketing, Customer Satisfaction, Banking Industry.

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1. **Introduction**

The concept of social responsible marketing is not a new concept in the banking industry, but in the current economic situation it has become the best solution for integrating moral principles in banking activity. CSR has been defined as the voluntary integration of social and environmental concerns into the organization's decision making process (Soana, 2011). This concept is increasingly used in the banking industry, being perceived as a tool to develop a positive image and attract new customers. Although the primary objective of business is to earn maximum profits for shareholders or owners in ethical way, it is also expected to operate in a way that fulfills social obligation. Companies have corporate social responsibility (CSR) practices commit themselves operating in a way to benefit the community at large (Olivia, 2011). Businesses nowadays are expected to operate ethically and in a way fulfilling social obligations. CSR aims to embrace responsibility for corporate actions and to encourage a positive impact to the environment and stakeholders.

On 27 February 2011, Bangladesh Bank focused on the environmental concept of social marketing and circulates Green Banking Guidelines to reduce the environmental risk for the well-being of the society as well as for the banks. According to the Bangladesh Bank Order, 1972 all financial institutions are bound to oblige and maintain the guidelines of Bangladesh Bank. The Green Banking Guideline includes three phases. Phase-I includes development of green banking policies and showing general commitment on environment through in-house performance, Phase-ii emphasizes on Sector Specific Environmental Policies, Green Strategic Planning, Setting up Green Branches, Improved In-house Environment Management, Formulation of Bank Specific Environmental Risk Management Plan and Guidelines, Programs to Educate Clients, Disclosure and Reporting of Green Banking Activities etc. Phase-iii addresses the whole eco-system through environment friendly initiatives and introducing innovative products (BRPD, 2011). The two important parts of social marketing are humanistic marketing and ecological marketing. Societal marketing concept holds that the organization’s task is to determine the needs, wants, and interest of target markets and to deliver the desired satisfaction more effectively and efficiently than competitors in a way that preserves or enhances the consumer’s and society’s

well-being (Kotler & Keller, 2006). With the growing importance of CSR nowadays, some governments or international associations have set guidelines to listed companies on reporting CSR initiatives. This study concentrates on examining CSR practices of banks because CSR involves doing good to different stakeholders, not just shareholders, which is a more comprehensive approach in companies' strategies.

2. Literature Review

Shahidul (2008) estimated that a good number of private commercial banks have already been engaged in societal marketing. They do this by engaging publicity through contribution to the charitable issues, creating public awareness on some important issues and sponsorship for many events, ideas and education, or charitable issues. Some of these activities are: donation to flood affected, anti dowry movement, stipends for students, rehabilitation for acid burned etc. Hoepner and Wilson (2010**)** examined Social, Environmental, Ethical and Trust (SEET) issues in banking. The interest in social and environmental issues (particularly climate change) in banking has experienced a rapid growth over the last decade. Ethical and trust issues have also gained attention during the recent global financial crisis. The researchers highlight the importance of social, environmental and ethical issues for the risk management, reputation and performance of banks and other financial institutions. Weber and Remer (2011) reported that social banks have to differentiate themselves from conventional banks that start to distribute socially responsible products and services as well. Porter and Kramer (2011) identified that social banking can be considered a successful example of an organizational model that not only creates economic but also social and environmental value. Kotler (2000) identified the term "societal marketing concept" to cover social and ecological responsibilities. Recent developments show that a green agenda following holistic principles has now been integrated into mainstream marketing literature.

Karna, Hansen, and Juslin (2003) investigated that marketing bridges the company and its markets in a societal context. Satisfying the needs of customers in a profitable way is the core of marketing ideology and in turn is a core of the market economy. Environmental or "green" marketing has been seen as a tool towards sustainable

development and satisfaction of different stakeholders. Souter, Neil, and Molster (1995) analyzed that banking business depends on trust necessitated by the complexity of the transactions and vulnerability of customers because of imperfect information. Banks are obliged to obey certain ethical principles of banking profession and organizational ethics, which include honesty, integrity, social responsibility, accountability and fairness. Gini (1997) identified that business ethics has become a prerequisite for conducting any type of business, particularly in the global market place. The role of ethics in business can be viewed from two different angles i.e. the first view is to maximize the shareholder's value, the second view is the 'ethics pays', which implies that acting in a socially responsible way toward stakeholders. Sullivan (2009) found that Managers, especially top managers, do have a responsibility to create an organizational environment that fosters ethical decision-making by institutionalizing ethics. This can be accomplished in three ways namely, i) by establishing an appropriate company policy or a code of ethics; ii) by using a formally appointed ethics committee; and iii) by teaching ethics during management development program.

The literature review reveals that the components of social responsibility marketing are-

▪ Social development benefit	▪ Reliability
▪ Ethics in promotional activities	▪ Checking Money Laundering
▪ Environmental issues	▪ Public health
▪ Reasonable service charge	▪ Welfare fund
▪ Integrity	▪ Natural calamity and disaster
▪ Impartiality	▪ Scholarship
▪ Security	▪ Donation/Sponsorship
▪ Transparency	▪ Community Planning and Development

So far our knowledge goes; no in-depth study has been conducted on the subject of the present research. This research gap motivated the researcher to study on "Social Responsible Marketing Practices in Banking Industry: A Study on Private Commercial Banks of Bangladesh"

3. Hypothesis

In the light of the literature review, the hypothesis of the present study is:

H 1: There is a correlation between social responsible marketing and customer satisfaction.

4. Research Methodology

The research approach of this study is descriptive in nature. The population of the study comprises of all private banks, customers and executives of banking sector of Bangladesh. There are 40 Private Commercial Banks of Bangladesh. Based on the time of inception all the commercial banks have been divided into three generations (Siddikee, Parvin, & Hossain, 2013) By analyzing establishment year of private commercial banks and various literatures this study has been conducted and has classified banking sector into three generations: 1st generation banks, those established in the decades of 1980s, second generation banks; those banks started operation in 1990 to 1998 and third generation banks; those established after 1998. Among the three generation banks, stratified sampling method has been used in selecting sample banks and purposive sampling technique has been followed in selecting executives and customers.

In this study primary data have been collected from two types of respondents, such as, bank executives and bank customers. Primary data have been collected from both of the respondents through questionnaire. Two sets of questionnaires have been designed for respondents. Five point Likert Scale has been used in the study to measure the degree of agreement or disagreement with each of a series of statement of variable and statements are developed on the basis of the variable of social responsible marketing practices to represent the research objectives. Questions were asked on a 5 point Likert Scale ranging from '1' to '5' to measure whether they agree to disagree (with '1'

meaning 'strongly disagree' and '5' meaning 'strongly agree'). To measure customer satisfaction 5 point Likert Scale ranging from '1' to '5' has been used (with '1' meaning 'highly dissatisfied' and '5' meaning 'highly satisfied'). Focus group study and face to face interview have been conducted with sample respondents about social responsible marketing practices. Intensive interview has been conducted with branch managers of the banks about their practices of social responsible marketing concept. For data analysis, sophisticated program Statistical Package for Social Science (SPSS) has been used.

5. Research Objectives

The main objective of this research is to focus on the practice of **social** responsible marketing in banking industry of Bangladesh in general and in sample banks in particular. The specific objectives of the study are as follows:

i) To examine the application of social responsible marketing practices of the sample banks.

ii) To evaluate the customers satisfactions of the sample banks.

iii) To analyze the correlation between social responsible marketing practices and customer satisfaction.

iv) To suggest some strategies for the development of private commercial banks through practicing social responsible marketing in Bangladesh.

6. Findings and their analysis

6.1 Social Responsible Marketing and First Generation Banks

Green (1989) revealed that a bank's responsibility extends to government, customers, shareholders, staff, and the community. Companies do have ethical responsibility, but it is not protected by limited liability from the consequences of their actions. A company's record and the perception of its ethics affect its reputation and ensure long-term success or failure. There are some major concerns about environmental issues such as global warming, deforestation etc. Therefore, organization need to pay

attention to their outputs whether they are violating environmental issues or not. So, to reduce environmental risk, banks can use IT as a strong means to fulfill the objectives of social and ethical banking (Green, 1989). This study provides priority over legal, environmental, social and ethical issues on banks and emphasizes on these issues as the part of corporate social responsibility. In such a context, data, thus, collected from customers and executives to evaluate performance of socially responsible marketing practices in sample first generation banks and have been shown as follows.

6.1.1Customers' view

Weber and Remer (2011) described social banking as a way of value-driven banking that has a positive social and ecological impact at its heart, as well as its own economic sustainability. Most of the social banks came out of the crisis in a much stronger and bigger way than before. In addition, none of the social banks had to be bailed out with public funds. This increasingly attracts the interest not only of clients searching for safe and sensible ways to deposit their funds but also of conventional banks that begin to understand the potential of a more socially oriented approach towards banking. It is a matter of awareness, which compel us to have some views from a different outlook. Bearing in mind the various functions of a bank and current scenario, now it is high time to understand the role of banks in 21st century because all the countries and international organizations are giving emphasize on maintaining environmental as well as ecological balance. So, data thus have been collected from the clients of first generation sample banks in Bangladesh to elucidate the social responsible marketing practices and shown in

table-1.

Table-1: Customers' View Regarding Social Responsible Marketing and First Generation Banks

	Variables	AB Bank	IBBL	UCBL
	Social development benefit	2.90	3.30	2.30
	Reasonable service charge	2.70	3.20	2.40
	Ethics in promotional activities	3.35	3.65	3.05
	Environmental issues	3.15	3.10	2.75
Code of Ethics	Integrity	3.70	4.00	3.10
	Impartiality	3.55	3.65	2.90
	Security	3.55	4.00	3.10
	Transparency	3.55	4.10	3.15
	Reliability	3.55	4.30	3.05
	Checking Money Laundering	3.85	3.40	3.05
Social Responsible Program	Public health	2.60	4.20	2.20
	Welfare fund	2.45	4.10	2.05
	Natural calamity and disaster	3.00	3.60	2.90
	Scholarship	2.75	3.70	1.50
	Donation/Sponsorship	2.10	3.25	1.55
	Community Planning and Development	2.00	3.10	1.40
	Weighted Average Score of Social Responsible Marketing	**3.05**	**3.67**	**2.53**

Source: Field Survey

Table-1 portrays the customers' view about the social responsible marketing practices in sample first generation banks in Bangladesh. It shows that IBBL **(3.67)** is highly emphasizing on the social responsible marketing practices among the first generation sample banks, followed by sample AB Bank **(3.05)** and UCBL **(2.53)** respectively.

T**able-1** reveals that IBBL is highly emphasizing on the code of conduct such as reliability (4.30), followed by sample AB Bank (3.55) and UCBL (3.05) respectively. Again, customers of sample first generation banks opined that IBBL is highly practicing social responsible program such as Public health (4.20), followed by sample AB Bank (2.60) and UCBL (2.20) respectively.

Further, **table-1** portrays that among the sample first generation banks, sample IBBL is highly emphasizing on transparency (4.10), followed by sample AB Bank (3.55) and UCBL (3.15) respectively. On the other hand, AB Bank is highly emphasizing on preventing money laundering (3.85) to reduce crime in the society, followed by sample IBBL (3.40) and UCBL (3.05) respectively. As such it is evident that Islami Bank Bangladesh Limited (IBBL) is highly practicing social responsible marketing and obtained the highest score **(3.67)** among the sample 1st generation banks in the study areas.

6.1.2 Executives' View

The rules and regulations of any bank should be followed by the employees of the organization. Indirect impact on the environment will be eliminated if employees of the organization reduce, reuse and recycle the use of paper, ink, oil, fuel, electricity, automobile etc. So, the employees should be aware about the environmentally and socially harmful and unethical project. Due to unusual weather pattern, rising greenhouse gas, declining air quality etc. society demands that business also take responsibility in safeguarding the planet. Green finance as a part of Green banking makes great contribution to the transition to resource-efficient and low carbon industries i.e. green industry and green economy in general. In response, urgent measures are required by stake holders for sustainable development and thereby save the planet. Banks hold a unique position in an economic system that can affect production, business and other economic activities through their financing activities

and thus may contribute to save environment. Green banks or environmentally responsible banks do not only improve their own standards but also affect socially responsible behavior of other business (BRPD, 2011). Thus data have been collected from the executives to represent the social responsible marketing practices in the sample first generation banks in Bangladesh and shown in **table-2.**

Table-2: Executives' View Regarding Social Responsible Marketing and First Generation Banks

	Variables	**AB Bank**	**IBBL**	**UCBL**
	Social development benefit	3.60	4.00	3.70
	Reasonable service charge	3.70	4.30	4.00
	Ethics in promotional activities	4.20	4.30	3.60
	Environmental issues	4.20	4.00	3.70
Code of Ethics	Integrity	4.50	4.80	3.80
	Impartiality	4.40	4.50	3.50
	Security	4.70	4.90	4.00
	Transparency	4.50	4.80	4.10
	Reliability	4.50	4.70	3.90
	Checking Money Laundering	4.70	4.90	3.90
Social Responsible Program	Public health	3.50	4.40	3.30
	Welfare fund	3.50	4.40	3.90
	Natural calamity and disaster	4.00	4.30	3.60
	Scholarship	3.50	4.50	3.50
	Donation/Sponsorship	4.30	4.20	3.80
	Community Planning and Development	3.40	4.00	3.00
	Weighted Average Score of Social Responsible Marketing	4.08	4.44	3.71

Source: Field Survey

Table-2 shows the social responsible marketing practices in the first generation sample banks in Bangladesh. The executives of the sample banks respond that IBBL **(4.44)** is highly following the environmental, legal, ethical and social issues as part of the social responsible marketing practices among the other first generation sample banks, followed by sample AB Bank (4.08) and UCBL (3.71) respectively.

From the **table-2**, it has been found that with the other practices of social responsible marketing IBBL is highly emphasizing on security (4.90), followed by AB Bank (4.70) and UCBL (4.00) respectively. The table further reveals that in social responsible marketing practices, IBBL is emphasizing on checking money laundering and secured score is 4.90, followed by sample AB Bank (4.70) and UCBL (3.90) respectively. Again, executives opine that among the sample first generation banks, IBBL is also focusing on integrity (4.80), followed by sample AB Bank (4.50) and UCBL (3.80) respectively.

Thus, it is evident that Islami Bank Bangladesh Limited is highly practicing social responsible marketing and obtained the highest score **(4.44)** among the sample first generation banks in the study areas.

6.2 Social Responsible Marketing and Second Generation Banks

6.2.1 Customers' view

Customers are becoming aware about various environmental issues and the hazardous effects of rapid industrialization. It is necessary for organizations to attain sustainable competitive advantage by creating eco-friendly products. Banks can project themselves as a socially and ethically oriented organization by disbursement of loans merely to those organizations, which have environmental concerns (Goyal, & Joshi, 2011). Building relationships with customers, suppliers, employees, communities and other stakeholders can become central to competitiveness and form the foundation for a new, progressive and people centered corporate strategy which attacks the sources - not the symptoms - of challenges facing business today. This brings us to the increased importance of corporate social responsibility (Mazarr, 1999; Palazzi & Starcher, 1997). In 21st century, besides the environment issues such as poverty and human rights have received increasing attention over last decade (Barkemeyer, Figge, & Hoepner, 2010).

To save the environment and society as well as securing the hazard free world, banks should bring new policies and guidelines to upgrade the system. As such, data, thus, have been collected to know the social responsible marketing practices in second generation sample banks in Bangladesh and shown in **table -3.**

Table-3: Customers' View Regarding Social Responsible Marketing and Second Generation Banks

	Variables	**DBBL**	**Prime Bank**	**NCC Bank**
	Social development benefit	3.55	2.90	2.55
	Reasonable service charge	2.75	2.50	2.25
	Ethics in promotional activities	3.25	3.15	3.00
	Environmental issues	3.35	2.95	3.05
Code of Ethics	Integrity	3.60	3.55	3.35
	Impartiality	3.35	3.20	3.25
	Security	3.80	3.35	3.30
	Transparency	3.95	3.40	3.25
	Reliability	3.65	3.55	3.15
	Checking Money Laundering	3.75	3.70	4.40
Social Responsible Program	Public health	3.65	2.55	2.10
	Welfare fund	3.95	2.65	2.10
	Natural calamity and disaster	3.90	3.00	2.35
	Scholarship	4.30	2.10	1.30
	Donation/Sponsorship	3.65	1.90	1.35
	Community Planning and Development	2.45	1.55	1.05
	Weighted Average Score of Social Responsible Marketing	**3.56**	**2.88**	**2.61**

Source: Field Survey

Table-3 shows the customers opinion about the social responsible marketing practices in the second generation sample banks in Bangladesh. It shows that among all other sample second generation banks, DBBL **(3.56)** is highly practicing the social responsible marketing tools to promote their product, followed by sample Prime Bank **(2.88)** and NCC Bank **(2.61)** respectively.

The survey data reveals that sample DBBL is emphasizing on all the elements of the social responsible marketing practices. DBBL scored more in scholarship programs (4.30) to enhance reward for the meritorious poor students, followed by sample Prime Bank (2.10) and NCC Bank (1.30) respectively. Dutch-Bangla Bank, under its social cause program, has been awarding the largest number of scholarships in Bangladesh for the meritorious students in need of financial aid studying at different levels of education since 2001 and around 90% of the scholarships have been given to the rural students and 50% to the female students involving an amount of Taka 102 core annually (DBBL, 2016).**Table-3** portrays that DBBL is also focusing on welfare fund (3.95) for the well-being of the society, followed by sample Prime Bank (2.65) and NCC Bank (2.10) respectively.

As such, it is evident that among the sample second generation banks, DBBL is highly practicing social responsible marketing in the eye of customers and obtained the highest score **(3.56)** in the study areas.

6.2.2 Executives' view

The interest in social and environmental issues (particularly climate change) in banking has experienced a rapid growth over the last decade (Hoepner & Wilson, 2010). Emission of carbon dioxide, toxic chemicals, and deforestation are the main reasons of climate change. So, all organizations should consider in details on ecological impact while financing. It is recognized that avoidance of all possible environmental damage is often very expensive and hard to achieve (Ricardo, 2010). In order to protect the environment from damages, bank executives as well as all the members of the society should come forward to save the whole globe. Data, thus, collected to know the executives view about practices of socially responsible marketing in sample second generation banks have been shown in **table-4.**

Table-4: Executives' View Regarding Social Responsible Marketing and Second Generation Banks

	Variables	DBBL	Prime Bank	NCC Bank
	Social development benefit	4.60	3.60	3.60
	Reasonable service charge	4.60	4.10	3.70
	Ethics in promotional activities	4.40	4.00	3.70
	Environmental issues	4.20	3.80	4.00
Code of Ethics	Integrity	4.60	4.30	3.90
	Impartiality	4.40	4.30	3.70
	Security	4.80	4.30	4.40
	Transparency	4.80	4.30	4.20
	Reliability	4.80	4.30	4.20
	Checking Money Laundering	4.30	4.20	4.20
Social Responsible Program	Public health	4.90	3.50	3.30
	Welfare fund	4.80	3.70	3.40
	Natural calamity and disaster	4.90	3.60	3.70
	Scholarship	5.00	4.10	3.40
	Donation/Sponsorship	4.90	4.00	3.60
	Community Planning and Development	4.60	3.80	3.40
	Weighted Average Score of Social Responsible Marketing	4.66	3.99	3.78

Source: Field Survey

Table-4 shows the executives' view about social responsible marketing practices in second generation sample banks in Bangladesh. Bank executives opined that DBBL (4.66) is clearly ahead in practicing social responsible marketing programs in sample

second generation banks, followed by sample Prime Bank (3.99) and NCC Bank (3.78) respectively.

From the executives' opinion, the sample DBBL is highly emphasizing on scholarship (5.00), followed by sample Prime Bank (4.10) and NCC Bank (3.40) respectively. **Table-4** reveals that DBBL is highly focusing on social responsible programs such as public health (4.90), followed by sample Prime Bank (3.50) and NCC Bank (3.30) respectively. Green Banking Policy of Bangladesh Bank enforces all commercial banks to introduce green products which are environment friendly, thus it is found from the executives' opinion that all sample second generation banks are moderately emphasizing on the environmental issues.

Thus weighted mean of social responsible marketing practices in sample second generation banks demonstrate that sample DBBL is clearly ahead and obtained the highest score **(4.66)** in the eye of executives among the sample second generation banks in the study areas.

6.3 Social Responsible Marketing and Third Generation Banks

Studies on banks of Bangladesh show that third generation banks are technologically advanced, second generation banks are highly efficient and first generation banks have banking experience (Huda, Chisty, & Rashid, 2007). One of the most important implications of technological advancement in banking industry is that it makes distant customers to come closer (Durkin & Howcroft, 2003). Technology reduces use of fuel, paper, ink etc as well as reduces cost of the operation. It is found in on the printer of one sample bank that reducing print of one page means adding one taka profit. (Huda, et al., 2007) also identified that technology reduced service delivery cost and overall cost of operation of third generation banks. So, data, thus, collected have been examined in view of both customers and executives to know the present status of the legal, ethical, environmental and social marketing practices of sample third generation banks of Bangladesh.

6.3.1 Customers' View

To make the environment congenial from hazard, the banks are the pioneer institutions to save the earth. Green banking policy of Bangladesh Bank binds all scheduled banks

in Bangladesh to include environmental risk of the clients operations and also discourages the banks to finance in environmentally unhealthy projects. This shows the ethical and legal practice of the banks. It appears that these issues are clearly included in the social responsible marketing. Thus, data collected from the customers to know the social responsible marketing practices in the sample third generation banks have been shown in **table-5.**

Table-5: Customers' View Regarding Social Responsible Marketing and Third Generation Banks

Variables		Bank Asia	Trust Bank	Standard Bank
Social development benefit		3.00	2.75	2.95
Reasonable service charge		2.75	2.50	2.15
Ethics in promotional activities		3.35	3.55	3.15
Environmental issues		3.20	3.40	3.05
Code of Ethics	Integrity	3.75	3.65	3.50
	Impartiality	3.30	3.15	2.75
	Security	4.10	3.55	3.50
	Transparency	3.55	3.25	3.65
	Reliability	3.95	3.70	3.40
	Checking Money Laundering	3.85	3.70	4.15
Social Responsible Program	Public health	2.70	2.35	2.65
	Welfare fund	2.70	2.70	2.85
	Natural calamity and disaster	2.95	2.95	3.00
	Scholarship	2.80	2.25	2.40
	Donation/Sponsorship	2.95	2.40	2.85
	Community Planning and Development	2.85	1.90	2.10
	Weighted Average Score of Social Responsible Marketing	**3.23**	**2.98**	**3.01**

Source: Field Survey

Table-5 portrays the social responsible marketing practices in the sample third generation banks in Bangladesh. Customers of sample banks opined that Bank Asia **(3.23)** is highly practicing social responsible marketing to be legal, ethical and social to the society and environment, followed by sample Standard Bank **(3.01)** and Trust Bank (**2.98)** respectively.

The weighted mean have been computed for the purpose. The analysis of the variables of social responsible marketing shows that Bank Asia is focusing more on security (4.10), followed by sample Standard Bank (3.50) and Trust Bank (3.55) respectively. It has been revealed that in contrast of Bank Asia, the sample Standard Bank is highly emphasizing on checking money laundering (4.15), followed by Bank Asia (3.85) and Trust Bank (3.70) respectively.

As such, among the sample third generation banks, Bank Asia obtained first position in social responsible marketing practices and secured weighted average score **3.23** as opined by customers.

6.3.2 Executives' view

The opinions of executives have been collected regarding the social responsible marketing practices in the study areas. The views of the executives are also counted from the sample banks to know the internal policies and strategies about social responsible marketing in third generation banks in Bangladesh. Data, thus, have been collected to know about social responsible marketing practices in sample third generation banks and shown in **table-6.**

Table-6: Executives' View Regarding Social Responsible Marketing and Third Generation Banks

	Variables	Bank Asia	Trust Bank	Standard Bank
	Social development benefit	3.90	3.70	4.00
	Reasonable service charge	4.40	4.40	4.40
	Ethics in promotional activities	4.30	4.00	4.30
	Environmental issues	3.80	3.60	3.70
Code of Ethics	Integrity	4.70	4.10	4.40
	Impartiality	4.40	4.00	4.10
	Security	4.90	4.10	4.60
	Transparency	4.70	4.30	4.60
	Reliability	4.40	4.10	4.10
	Checking Money Laundering	4.80	3.90	4.60
Social Responsible Program	Public health	4.10	3.20	3.70
	Welfare fund	4.44	3.90	4.10
	Natural calamity and disaster	4.10	3.60	3.60
	Scholarship	4.50	3.50	4.00
	Donation/Sponsorship	4.30	3.80	4.00
	Community Planning and Development	3.80	3.80	3.40
	Weighted Average Score of Social Responsible Marketing	4.35	3.88	4.10

Source: Field Survey

Table-6 shows that sample Bank Asia **(4.35)** is highly emphasizing on the social responsible marketing practices over other sample third generation banks in Bangladesh, followed by sample Standard Bank **(4.10)** and Trust Bank **(3.88)** respectively.

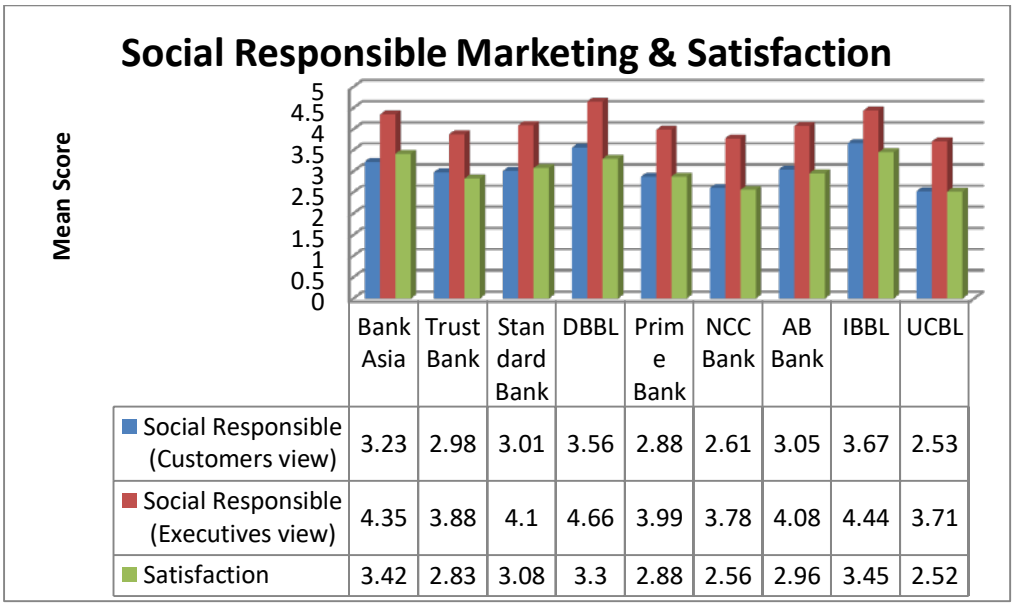
The **table-6** reveals that in social responsible marketing practices, Bank Asia is emphasizing on security and secured score is 4.90, followed by sample Standard Bank (4.60) and Trust Bank (4.10) respectively. Again, executives opined that among the sample third generation banks, Bank Asia's weightage on checking money laundering is (4.80), followed by sample Standard Bank (4.60) and Trust Bank (3.90) respectively. It has been shown that sample Bank Asia is emphasizing on maximum variables of social responsible marketing practices but differences have been found between the executives' opinion and the customer's opinion due to the executives' loyalty towards their bank.

As such, it is argued that Bank Asia is highly practicing social responsible marketing and obtained the highest score **(4.35)** among the sample third generation banks in the eye of bank executives.

6.4 Social Responsible Marketing and Customer Satisfaction

Corporate social responsibility (CSR) increases customer satisfaction, which in turn leads to positive financial returns and may improve managers' understanding of why CSR matters (McGuire & Schneeweis, 1988; Xueming, & Bhattacharya, 2006). In addition, CSR can boost internal employee morale and commitment within the firm (Godfrey, 2005; McGuire, Schneeweis, & Branch, 1990) and attract more capable, young talents who are trying to "marry their work and nonworking lives" (Grow, Steve, & Louise, 2005). So, the efforts of the sample banks with the satisfaction of the customer through the activity of the bank are measured. Thus, mean analysis of the customer satisfaction is correlated with the activities of social responsible marketing and have been shown in **figure-1.**

Figure-1: Social Responsible Marketing and Customer Satisfaction



	Bank Asia	Trust Bank	Standard Bank	DBBL	Prime Bank	NCC Bank	AB Bank	IBBL	UCBL
Social Responsible (Customers view)	3.23	2.98	3.01	3.56	2.88	2.61	3.05	3.67	2.53
Social Responsible (Executives view)	4.35	3.88	4.1	4.66	3.99	3.78	4.08	4.44	3.71
Satisfaction	3.42	2.83	3.08	3.3	2.88	2.56	2.96	3.45	2.52

Source: Field Survey

Figure-1 shows the weighted mean of customer satisfaction and social responsible marketing practices in scheduled sample banks of Bangladesh. It is found that among the sample first generation banks, IBBL **(3.67)** is highly emphasizing on the social responsible marketing practices whereas sample DBBL **(3.56)** and Bank Asia **(3.23)** scored highest in second and third generation banks respectively. In contrast with social responsible marketing practices, sample IBBL **(3.45)** attained high level of customer satisfaction among first generation sample banks, DBBL **(3.30)** attained high level of customer satisfaction among second generation sample banks and Bank Asia **(3.42)** attained high level of customer satisfaction among third generation sample banks. Thus correlation between customer satisfaction and weighted mean of social responsible marketing is shown in **table-7.**

Table-7: Correlation between Social Responsible Marketing and Customer Satisfaction

Correlations

		Social Responsible Marketing Practices Customers' View	Social Responsible Marketing Practices Executives' View	Level of Satisfaction
Social Responsible Marketing Practices Customers' View	Pearson Correlation	1	.943**	.930**
	Sig. (2-tailed)		.000	.000
	N	9	9	9
Social Responsible Marketing Practices Executives' View	Pearson Correlation	.943**	1	.923**
	Sig. (2-tailed)	.000		.000
	N	9	9	9
Level of Satisfaction	Pearson Correlation	.930**	.923**	1
	Sig. (2-tailed)	.000	.000	
	N	9	9	9

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

Source: Field Survey

Table-7 correlates the weighted average mean of social responsible marketing practices and satisfaction in sample banks in Bangladesh. The correlation value between social responsible marketing score on behalf of customers' view and score of satisfaction it is + 0.930, a value close to 1 (one). On the other hand, between the executives' view and score of satisfaction is +0.923, a value also close to 1 (one). This means that social responsible marketing is strongly associated with level of satisfaction

i.e. the higher the social responsible marketing scores, the higher their customer satisfaction. Furthermore, the positive sign of correlation value implies a positive relationship; the banks which highly practice the elements of social responsible marketing, their customer satisfaction will be higher and vice versa.

Hypotheses H_1 depicts that there is significant relationship between social responsible marketing and customer satisfaction. This can be expressed as follows:

$$H_0: \rho = 0 \qquad [there\ is\ no\ actual\ relationship]$$

$$H_1: \rho = 0 \qquad [there\ is\ a\ correlation]$$

The table-7 shows that on the basis of sample executives' opinion, Pearson Coefficient is significant at r = 0.923, p≤0.01, and on the basis of customers' opinion, Pearson Coefficient is significant at r = 0.930, p≤0.01. So, we cannot accept H_o, which means that there is a significant relationship between social responsible marketing practices and customer satisfaction.

7. STRATEGIES

In the light of literature review and empirical investigation, some strategies may be recommended by the study in order to achieve service excellence in the game of high competition in banking industry in general and in sample banks in particular.

➢ Social Responsible Program

Social responsible program incorporates ethical, environmental, legal and social context. Societal marketing concept holds that the organization's tasks are to determine the needs and interest of the target market. The bank should donate a part of their earnings liberally for social causes. For example, DBBL and other banks are donating for social causes like AIDS awareness campaign, school of children poverty line, blood donation camps, development of infrastructure like roads and high-tech facilities because it would create win-win situation for banks as well as society.

- **Green Banking Practice**

Green banking is a component of global initiative by a group of stakeholders to save the environment. Marketers may create new products, processes and technologies in order to ensure better living environment as well as quality of life for the people of the country (Solaiman, 2005). As such, it appears that green banking can play an important role of the transition to resource efficient and low carbon industries, i.e., green economy in global context in general and in Bangladesh in particular. Thus, green banking policies have to be revised by a high-powered committee and the services to be provided by all the credit delivery reports shall comply with green banking policies and strategies. Further, the other relevant activities will be designed in light of green banking policy programs and strategies. Further, Motivational programs are encouraged for reduction of consumption of physical resources e.g. use scrap paper as notepads, install energy efficient electronic equipment and automatic shutdown of computers, fans, lights, air conditioner etc.

- **Ethical Marketing Courses in Education**

Commercial bank is a very sophisticated financial institution, immoral practices on part of the bankers in different operating areas have far reaching effect on not only to the interest of the stakeholders but also to financial health of the bank itself (Islam & Kabir, 2003). A factor that could raise ethical standard is the teaching of ethics and values in higher education institutions. The issue of introducing academic courses on and about ethical marketing such as consumer economics, service marketing, customer protection, consumer legislation etc. may be considered for inclusion in the syllabi of the educational institutions at different levels (Solaiman, 2005).

8. Conclusion

A good number of private commercial banks have already been engaged in social responsible marketing. They do this by engaging publicity through contribution to the charitable issues, creating public awareness on some important issues and sponsorship for many events, ideas and education, or charitable issues. Some of these activities are: donation to flood affected people, anti dowry movement, stipends for students, rehabilitation for acid burned etc. Sport sponsorship is used by the banks in the live

telecast of cricket and a few games and offers a large viewing figures and opportunity of targeting a wide audience. This broadcast sponsorship is intended to create popularity of the bank (Shahidul, 2008). Thus, it is found that among the sample first generation banks IBBL (3.67) is highly emphasizing on the social responsible marketing practices whereas sample DBBL (3.56) and Bank Asia (3.23) scored highest in second and third generation banks respectively as opined by customers. The correlation between social responsible marketing practices and customer satisfaction figured that the Pearson Coefficient is significant at $r = 0.923$ in the eye of executives' and 0.930 in the eye of customers' and $p \leq 0.05$ which reveals that there is a significant positive correlation between social responsible marketing practices and customer satisfaction. The analysis shows that, these banks are making efforts for the implementation of CSR, but are restricted within certain fields. There is a need for better CSR activities by the banks, which is possible by adding more and more social development issues link with corporate sector.

9. Limitations and Future Research

This study indicates a number of limitations and potential specific directions for future research. The most significant limitation is the sample size which was small. The research would have been more reliable if a greater size of the sample had been used. The respondents were selected from 20 branches of 9 scheduled commercial banks located in Chittagong city. It would have been more reliable and realistic if the respondents had been selected from some other cities including Dhaka. In addition, the data for social responsible marketing practices have been collected from both executives and customers of respective banks. Executives of the banks might overemphasize their practices which might affect the relationship between customer satisfactions with social responsible marketing practices.

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Creative Performance Behavior: The Role of Employee Job Involvement and Job Satisfaction

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Abstract

At present, Bangladesh is moving towards becoming a developed country along with quality education in all levels of educational system. Hence, the aim of this study is to determine the contribution of job involvement and job satisfaction on employees' creative performance in workplace especially at tertiary level of education sector in Bangladesh. It is mentionable that very little research has been done based on such issue in private university. Bangladesh has 105 private universities having a very crucial role in increasing quality education. Data were collected from 131 respondents working in different private universities in Chittagong. Convenience sampling technique were used and collected data were analyzed by using descriptive statistics, regression analysis and bivariate correlation. Significant positive correlations were found which indicate that job involvement and job satisfaction have significant impact on creative performance behavior of employees in the private universities. Implications for management include the necessity of emphasizing on the issues that increase the employee job satisfaction and initiative to involve employee with job which lead them to behave creatively to enhance quality of education. Limitations of the study and future research direction were also discussed.

Key Words: Job Involvement, Job Satisfaction, and Creative Performance.

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1.0. INTRODUCTION

Dynamic world increases emphasis on organizations' employees' behavioral aspects in all sectors of development. The trends and issues relating to work station change with the changing psychology and behavioral dimensions of the employees. Bangladesh is not an exception to continue moving towards achieving a satisfied workers society. At present, Bangladesh is facing deeply core and strong challenges specially in the tertiary education. Established in 1972, the University Grants Commission of Bangladesh (UGC) is a government regulatory body which acts as a connector between the Government and the universities for regulating the activities of all the universities. The Government of Bangladesh identified that tertiary education system is not adequately prepared to capitalize on the creation and application of knowledge and UGC also noticed that there is no quality assurance mechanism for public and private universities in Bangladesh. (UGC, 2015). It is noticed that the number of higher education institutions increase day by day and changes the structure of governance and stakeholders' expectations. In this connection, to develop a quality culture it is important to recognize the behavioral aspects of faculties because they are the major stakeholders to implement National Education Policy (NEP) and Strategic plan for Higher education 2006-2026 (UGC, 2016). In Bangladesh private university started its journey 26 years ago. The contribution of private university in the education sector has increased dramatically in recent years. Moreover, it plays an integral role in education system along with its employees behavioral attitude becoming important to meet institutional objectives and achieve competitive advantage in the world education level. In fact, desired standard in quality education can't be achieved over a night as it is a continuous process rather than start and finish event. There are lot of factors responsible to ensure quality education with the changing psychology and behavioral output of the employees at university level. Job involvement and job satisfaction have mostly been used as strategic weapons to increase employees' creativity and productivity (Khan, Jam, Akbar, & Hijazi, 2011). In fact, high levels of job involvement and job satisfaction may drive employees to perform creatively because they are attached by both job and the organization. Different scientists in different periods paid focus to the concept of creativity and formation of creative environment

(Rickards, 2010; Sternberg & Grigorenko, 1999). On the other hand, fostering job involvement is an important organizational goal as numerous researchers consider it to be a fundamental determinant of organizational effectiveness (Pfeffer, 1994) and individual inspiration (Hackman & Lawler, 1971).

Creative performance has emerged as a potential research area in the study of organizational psychology in modern time (Adebayo, 2006; Meyer & Allen, 1997; Morrow, 1993). It has been one of the widely used and researched discipline in the field of behavioral science and human resource management. But in Bangladesh very few studies (Ali & Akhter, 2009; Shohel & Acharya, 2016) investigated as to how multiple dimensions affected creative performance among employees but the present study measure the relationship with job involvement, job satisfaction of private university employees. Higher education is based on creative and innovative service system all over the world. Therefore, according to Porter's generic value chain model primary and supporting activities create value for the organization. In case of tertiary education primary activities are provided by teachers and supporting activities by the administrative officers. To create value and sustainable competitive advantage all the employees in university should perform with creative behavior as a whole. Employees' creativity is essential for the competitive advantage of organizations (Amabile, 1996; Shalley, 1995; Shalley, Zhou, & Oldham, 2004; Woodman, Sawyer, & Griffin, 1993). Moreover, Creative employees build up new ideas and suggest novel products and methods which can be consequently executed and used to promote the organization's effectiveness and survival in the long run (Oldham & Cummings, 1996). Creativity cannot be instituted without the organization showing engaged behavior. It engages involvement of employees (Bagheri, Esmaili, Ahmad, & Seraji; 2013).The present study is an honest endeavor to identify that involved and satisfied employees may be a creative one. So, there is no chance to overlook the fact that employees involvement, satisfaction and their impact on creative performance is significant especially in education sector where jobs are related with creation and effective evaluation.

Hence the objectives of this study are:

a) to investigate the relationship between job involvement and creative performance.
b) to examine the relationship between job satisfaction and creative performance.

The research topic is not exclusively new but its issues were not encompassed by previous researches in Bangladesh specially on private universities. In addition, most of relationship between job involvement and creative performance the study worked out on job attitude and performance output separately. For instance, in a research it measured the job satisfaction of faculty members in private universities in Bangladesh conducted by Ali & Akhter (2009). In other words, there is rareness of comprehension research regarding job involvement, job satisfaction and creative performance all together in the tertiary level of education. The present research elaborately discusses how job involvement along with employees' satisfaction leads them to perform creatively in the university education. Moreover, this research can greatly shape the organizational views towards employees and easily measure the level of creative performance. Furthermore, this study intends to assist management professionals in determining the influence of job involvement and job satisfaction on creative performance of employees.

2.0. LITERATURE REVIEW

2.1 Job Involvement

Lodahl and Kejiner (1965) firstly introduced the widely used concept of job involvement. It is regarded as the level to which individual psychology is identified with a particular job. (Kanungo, 1982b, p. 97). “It is the degree to which the overall job consequence is a central life interest or the degree to which job involvement is perceived to be a key source for the satisfaction of essential needs” (Saleh & Hosek, 1976, p. 213). A positive level of intense psychological identification with one’s job leads to positive individual results of motivation, behaviour towards goal, personal growth and work satisfaction (Hackman & Lawler, 1971; Kahn, 1990; Lawler & Hall, 1970; Schultz & Schultz, 1994). Riketta and Van (2009) suggest that job involvement holds two overlapping actions: psychological identification related with job, and the

level at which job plays a central role in the individual's life and uniqueness. In other words, job involvement is the level to which the job condition is central to the person and his/her identity (Brown, 1996; Lodahl & Kejner, 1965). Li and Long (1999) define job involvement as a measure of the level of emotional or mental attachment with his or her job. Employee's individual level of involvement can be influenced by the job related factors (Vroom, 1962). Employees' involvement in job is expressed when they enthusiastically participate in the job related matters (Allport, 1943), they consider job as important and more significant component in life (Dubin, 1966).

2.3 Job Satisfaction

Job satisfaction is the result of employee's perception of how well their job provides those things that are viewed as important (Luthans, 1998). According to Locke (1976) job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience.

Balzer, Kihm, Smith, Irwin, Bachiochi, and Robie, (1997) recommended that humanitarian, financial, and theoretical concerns have all contributed to the continuing importance and popularity of job satisfaction. Ellickson and Logsdon (2002) define job satisfaction as the degree to which employees like their job. In a study, Spector (1997) refers to job satisfaction in terms with how employees feel about their work and different aspects of their works. Job satisfaction is one's feelings or state of mind related to the nature of their task (Tasnim, 2006). Job satisfaction is affective orientations on the part of individuals toward work roles which they are presently occupying (Vroom, 1964). Job satisfaction is a set of results formed on the events with the expectation that these assessment states transform over time and as a function of moments along with numerous dimensions including present goals (Smith & Lazarus, 2003; Ilies & Judge, 2004). Job satisfaction stated as a prime determinants of employee well-being (Jonge & Schaufeli, 2008). It is a reliable interpreter of employees' physical and mental health (Faragher, Cass & Cooper, 2005). and the focus of most of the attention to work-life and welfare of the employees (Spector, 2007). In a study, Schurman (1998) reviewed that employee satisfaction is an important management

goal in job design and developing human resource policies. Job satisfaction is defined as an employee's affective response to a job based on comparing desired result with actual outcomes (Egan, Yang, & Bartlett, 2004).

2.4 Creative Performance

Creativity is not possible to be explained in one definition, due to its invisible attribute. A variety of studies, experiments, case analysis and research methodology have been used for better understanding of the sources of creativity for employees from organizational perspectives. Creativity is the procedure of producing products, services, and process with fresh ideas for better utilities in order to achieve organization's objectives (Ambile, Barsage, Mueller, & Straw, 2005).

Creative performance is the process of creating new outcomes which is influence by different factors at workplace. According to Soleimani and Fallahpour (2005), Creativity may be measured as the upper stage of human learning, the highest thinking potency, and the final product of human's mind and thought. Organization creativity is often defined as creating efficient and novel ideas (Dewett, 2004, p. 257). Robbins and Judge (2010) defines that Creativity is an ability which helps employee identify potential result. If someone can maximize the result of decision-making, he/she will be termed as a rational person. Creative performance is defined as the level to which employees generate novel and effective ideas regarding procedures and processes at workplace. (Oldham & Cummings, 1996; Shalley, 1991) A creative work has been defined as one that is both novel and original and potentially valuable or suitable to the organization (Amabile, 1996; Mumford & Gustafson, 1998). Creativity in the organizational level is the creation of a potential idea, method, or a process by individuals working together in a complex social structure. So, creativity can be seen as significant organizational ability (Amabile, 1998), a possible starting point of organizational effectiveness (Woodman, Sawyer, & Griffin, 1993), and a source of competitive benefit (Leonard & Sensiper, 1998). Seltzer and Bentley (1999) state that the balance among skills, abilities and complexity of tasks directly affects creativity in individual level.

Based on the information provided a number of hypotheses can be generate in respect of relationship between creative performance behavior the dependent variables, job satisfaction, and job involvement the independent variables.

3.0. DEVELOPMENT OF RESEARCH HYPOTHESES

3.1. Job involvement and Creative performance

Hypothesis 1: There is a positive relationship between job involvement and creative performance of employees.

According to Brown (1996), job involvement by positively affecting employees' motivation and effort, leads to higher levels of in-role job performance. Brown and Leigh (1996) identify that job involvement has both direct and indirect effects on employee performance. So, it is simply notified that more involved employees highly perform which may lead them to demonstrate creative performance. When workforce fees that the surrounding environment is uncertain, tolerance of ambiguity is lower, less freedom and fear to take risk, they are less involved to make creative contributions. (Isaksen, Lauer, Ekvall, & Britz, 2001). According to social exchange theory developed by George Homans, employees are given priorities by delegation of authority and training, they feel sense of loyalty and employee repay the organization by performing engaged behavior which motivates them to perform more than their job description and results into creativity.

3.2 Job Satisfaction and Creative performance

Hypothesis 2: There is a positive relationship with job satisfaction and creative performance of employees.

In modern business, creativity is significant determinant of an organization's performance, and creative work environment can advance employees' well-being in terms of job satisfaction (Shalley, Gilson, & Blum, 2000). So, satisfied employees may

be more productive with creativity to produce new product or service ideas for competitive market. In a study Qinxuan, Mingchuan and Guan (2013) presented the result of the regression analysis of job satisfaction on creativity, the effect was significant and positive (β=0.33, $p<0.001$). Therefore, job satisfaction reflect the positive feeling of the employees towards job, which motivate them to perform creatively in the organization.

In this study, the creative performance behavior is dependent variable. Job satisfaction and job involvement are independent variables. Based on literature a hypothetical model can be developed to exhibit the relationships of job involvement and job satisfaction with creative performance as follows:

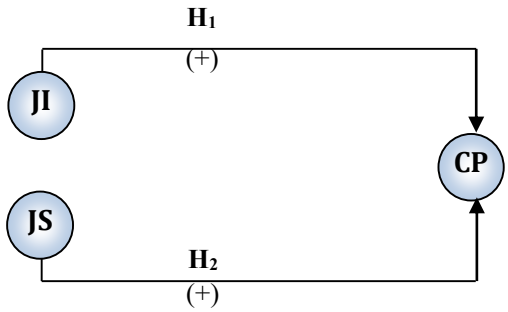

Figure 1: Hypothetical Model

Note: JI = Job Involvement; JS= Job Satisfaction; CP= Creative Performance

4.0. RESEARCH METHODS

4.1. Participants

Data for this research were collected from 131 respondents who worked in different private universities in Chittagong. They were requested to rate their views about their job involvement, job satisfaction and creative performance. The respondents were also asked to provide their demographic information (i.e. age, gender, tenure, education, and organizational level). All respondents were given complete autonomy in filling up the questionnaires.

4.2. Survey Instruments

The present study used several instruments to measure the job involvement, job satisfaction, and creative performance. All the variables were measured on a 5-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree). The study adopts the following instruments to collect data from the participants.

4.2.1 Job Involvement:

Job involvement was measured with the ten-item Job Involvement Scale developed by Kanungo (1982a). Sample items are: "Most of my personal life goals are job-oriented", and "The most important things that happen to me involve my present job". In the present study internal reliability alpha coefficient for the job involvement scale was 0.88.

4.2.3 Job Satisfaction:

To measure the job satisfaction of the respondents an 11-item scale developed by Ather and Nimalathasan (2006) was used. Sample items were "My achievement is recognized by my superiors", and "I like the content of the work, I do" etc. The reliability score of the job satisfaction scale for the current study was 0.89.

4.2.4 Creative Performance:

For measuring the creative performance of the respondents 13-item scale developed by Zhon and George (2001) was used. Sample items were "I come up with new and practical ideas to improve performance", and "I promote and champion ideas to others" etc. The reliability of the creative performance scale for the current study was 0.90.

Table 1: Demographic information of the respondents

Particulars	Mean (in years)	SD	N	%
Respondents' age	31.5	5.8	----	----
Respondents' experience	5.9	4.3	----	----
Respondents' position level:				
Top	----	----	9	6.9
Middle	----	----	110	83.9
Lower	----	----	12	9.2
Total			131	100.0
Respondents' educational qualifications				
Bachelor	----	----	14	10.7
Master	----	----	109	83.2
Others	----	----	8	6.1
Total			131	100.0

Source: Authors' own survey, 2017

Respondents' age limit differ from 26 to 58 years with a mean of 31.5 (SD = 5.8) years. Among 131 respondents, average job experience of the respondents was 5.9 (SD = 4.3) years. Top-level, mid-level and low level representations were 9 (6.9%), 110 (83.9%) and 12 (9.2%) respectively. Moreover, in case of education level there were 14 (10.7%) respondents with Bachelor degree, 109 (83.2%) with Master degree and 8 (6.1%) with other degrees.

4.3 Data Collection Procedure and Analysis of Data

Printed questionnaires were delivered to 160 employees (including faculty members and officers) working in different private universities in Chittagong. Among them 131(82%) questionnaire were received. It was assured that all the information provided by them would be used only for research purpose. Hence, to assure the privacy, their names and the identity of their organizations and departments have not been sought

for. An equal number of responses were not possible to gather from each of the organizations due to some barriers. Descriptive statistics, correlations, and regressions analyses were used to justify the relationships of the variables. The SPSS 21 was used to statistically analyze the data.

4.3. Reliability of Scales and Validity of Data

To measure the reliability of the scale Cronbach's alpha is the most extensively used method (Malhotra, 2004). It may be mentioned that Cronbach's alpha value ranges from 0 to 1, but satisfactory value is required to be more than .60 for the scale to be reliable (Malhotra, 2004; Cronbach, 1951). Cronbach's alpha of the job involvement, job satisfaction and creative performance behavior scales for the current study were 0.88, 0.89, and 0.90 respectively. Hence, all these survey instruments were highly reliable for data collection. In this study validity was not required to measure as established survey instruments were used.

5.0. RESULTS

The mean, standard deviation, reliabilities of job involvement, job satisfaction and creative performance behavior, and correlations among the variables are presented in table 2.

Table 2: Mean, Standard Deviations, Reliabilities, and Correlations between Variables

Variables/ Components	M	SD	α	Correlations		
				1	2	3
1. JI	4.14	.60	.88	1		
2. JS	3.32	.76	.89	.42**	1	
3. CP	3.90	.58	.90	.40**	.44**	1

Source: Author's own survey, 2017

Correlation is significant at the 0.01 level; N = 131;

JI = Job Involvement; JS= Job Satisfaction; CP=Creative Performance

Table 2 shows that there were significant correlations among creative performance behavior, job involvement and job satisfaction. There is significant positive correlation ($r = 0.40$, $p < 0.01$) was found between job involvement and creative performance while job satisfaction was also found to be positively correlated ($r = 0.44$, $p < 0.01$) with creative performance. Furthermore, a positive significant correlations ($r = 0.42$, $p < 0.01$) was found between job involvement and job satisfaction. Thus, it indicates that all hypotheses were supported by the result.

Table 3: Summary of Regression Analysis of Socio-Demographic Characteristics with Creative performance behavior.

Covariates	CP				
	Co-efficients (β)	S.E. (β)	Value of t-statistic	Value of R^2	Value of F –statistic
Age	.01	.02	-.02	.03	.76
Tenure	.03	.02	.13		
Education	.08	.07	1.12		
Gender	-.14	.10	-1.31		
Position	-.07	.16	-.47		

Source: Authors' own survey, 2017

** Significant at the 0.01 level; * Significant at 0.05 level;

N = 131; CP=Creative Performance

A review of Table 3 demonstrates that only 3% of the variances in creative performance was explained by socio-demographic characteristics (e.g. age, tenure, education, gender and position) which were found insignificant. It indicates that a larger portion of variance in creative performance was unexplained. The presence of unexplained variance suggests that there might be other possible variables that might account for variations of creative performance.

Table 4: Summary of Regression Analysis regarding Creative Performance, Job Involvement, and Job Satisfaction

Predictors	Predictand (CP)				
	Co-efficients (β)	S.E. (β)	Value of t-statistic	Value of R^2	Value of F –statistic
JI	.26	.08	3.14**	.25	21.61**
JS	.25	.06	3.93**		

Source: Authors' own survey, 2017

** Significant at the 0.01 level; * Significant at 0.05 level; N = 131; JI = Job Involvement;
JS = Job Satisfaction; CP = Creative Performance

An analysis of Table 4 indicates that 25% of the variances in creative performance behavior was explained by job involvement and job satisfaction. All the t-values and F-values were also found significant. It suggests that job involvement and job satisfaction are responsible for improving employees' creative performance in higher education.Although a proportion of variances in creative performance is unexplained, it has been suggested that job involvement and job satisfaction are the significant predictors in explaining the employees' creative performance perceived by the respondents.

6.0. DISCUSSIONS

The present research examines the relationships between job involvement, and job satisfaction with creative performance behavior as perceived by the private university employees.

The *first* purpose of the research was to examine the relationship between job involvement and creative performance behavior. Hypothesis 1 states that on the basis of the respondents' perception, job involvement is positively related to creative performance. The result ($r = 0.40$, $p < 0.01$) of the current study supports this statement.

Thus, it can be said that job involvement has played a significant role to boost up creative performance behavior.

The *second* purpose of the study was to look into the relationship between job satisfaction and creative performance behavior. Analyzing hypothesis 2, the relationship between job satisfaction and creative performance behavior of private university employees was found to be positive. The result ($r = 0.44$, $p < 0.01$) of the current study supports this statement. So, it can be summed up that job satisfaction would have a positive effect on creative performance.

7. Managerial Implications

The present study revealed that job involvement and job satisfaction are significant significantly correlated with creative performance behavior of employees in private universities. The implication is that there is need to increase job involvement and satisfaction factors among the employees to maintain a favorable environment which fosters the creative performance. The professional and human resource managers can get several implications from the findings of this study that creative performance can be increased through keeping the employees involved and satisfied with their jobs. Moreover, they will get not only idea about creative performance but also other behavioral outcomes related to job involvement and job satisfaction of the private university employees. For instance: it will increase the employees' in-role performance and organizational citizenship behavior and organizational commitment. In addition, Human resource managers and practitioners should focus on the nutrition of the creativity culture, design and environmental factors which foster the job involvement and job satisfaction of the private university employees. By this effort university can pave the way of better education in the higher level.

8. Limitations

The major limitation of the study may be the small sample size (N=131). In addition, sample collected only from Chittagong makes it barely adequate to represent the overall scenario of the research topic in Bangladesh. Moreover, in this study, presence of common method variance (CMV) in the measures might have caused inflated

relationships between the independent and dependent variables. Larger and more representative sample is needed for a wider probe into the relationships among the three variables. A random sampling procedure could be the best alternative to assure generalizability of the results. Moreover, Employees whose involvement were less in their job may have played a less part in the study; especially where the level of involvement might have made them feel uncomfortable in terms of completing a survey; a potential source of sample bias (Moye, 2003).

9. Future directions

A further research can be conducted by including public universities in Bangladesh. Moreover, a comparative study may be done between private and public universities regarding job involvement, job satisfaction and creative performance behavior of the employees. In the study job involvement and job satisfaction have a specific portion of impact on creative performance where creative behavior is mediated by other factors, such as organizational citizenship behavior, organizational commitment, freedom and trust etc. could produce interesting findings. In addition, future research should be extended potential roadblocks and challenges during the implementation of creative performance in the private or public university employees. This result of the study has to be replicated and expanded upon the present findings using samples with different characteristics from different sectors, such as samples with low level employees especially from manufacturing industry, so as to be able to generalize the results regarding the impact of job involvement and job satisfaction on creative performance to large population.

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A Critical Evaluation on the Application of Core International Labour Standards in Bangladesh

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Abstract

International Labour Standards are essential components in the international labour law framework for ensuring sustainable growth of the global economy. The core International Labour Standards formulated by International Labour Organization are international treaties which constitute legal obligations on the member states. Member states are legally bound to formulate labour laws and policies in their national jurisdiction complying with the core international labour standards, once they are ratified. Being a member of ILO, Bangladesh has an obligation to respect and uphold the core ILO conventions and comply with them in its legal framework. This paper examines the core conventions of ILO in the context of Labour jurisprudence of Bangladesh. It focuses on the obligation of Bangladesh regarding International Labour Standards and attempts to investigate the practices of the ratified conventions in different sectors. Finally it concludes with some policy options for effective compliance of the labour standards in the national jurisdiction of Bangladesh to ensure healthy working environment and to uphold sustainable economic growth.

Key Words: International Labour Organization, collective bargaining, freedom of association, forced labour, International Labour Standards, convention, compliance.

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1. Introduction

In this era of economic globalization, international labour standards are essential elements in the international framework for ensuring that the growth of the global economy gives benefit to all. The International Labour Standards (ILSs) are legal instruments formulated by the ILO's constituents (governments, employers and workers) that set out the basic principles of rights at work. International Labour Organization (ILO) is the world's only tripartite multilateral agency which is dedicated to bring decent work, job-related security and better living standards to the workers. The ILO usually formulates labour standards in the form of Conventions and Recommendations. Conventions are legally binding international treaties which may be ratified by member states and once they are ratified by any State, they constitute binding legal obligations in both domestic and international law. Member States are legally bound to formulate labor laws and policies complying with the core international labour standards. Bangladesh, being a member of ILO, has an obligation to comply (respect, promote & realize) with the core ILO conventions in its legal framework. This paper tried to examine the core conventions of ILO in the context of existing labour laws of Bangladesh. It focuses on the obligation of Bangladesh regarding International Labour Standards and attempts to test the practices of the ratified conventions in Bangladesh. Finally it concludes with some policy options for proper observance of the labour standards in legal norms and effective implementation in the practical field.

2. Obligations under International Human Rights Treaties

In the Universal Declaration of Human Rights (UDHR),[1] the basic human rights standards are articulated that guarantee everyone the right to just and safe conditions of work. These rights are also enshrined as legally binding commitments in several of the international human rights treaties, which Bangladesh has ratified. Key amongst them is the International Covenant on Civil and Political Rights (ICCPR)[2] and the International Covenant on Economic, Social and Cultural Rights (ICESCR)[3].

The UDHR also provides for everyone the right to equal pay, the right to just and favourable remuneration, non-discrimination in the work place as well as reasonable limitations on work hours. The right to form and to join trade unions is also included in this human rights declaration.[4] The ICESCR also recognizes the right to just and favourable working conditions for everyone.[5] It includes the right to fair wages with equal pay for equal work, provides for decent living for workers and their dependants; equal opportunity in the workplace; safe working conditions; sufficient rest and leisure, limited working hours and paid holidays. It also recognizes the right to form and join trade unions and protects the right to strike.[6]

Similar provision is also found in the ICCPR which incorporated the right to freedom of association, the right to form and join trade unions for the protection of interests.[7] Article 8 of the ICCPR prohibits forced or compulsory labour of any form. Bangladesh, being a party to the ICCPR, is obliged to take necessary steps to adopt such legislative measures to give effect to the right to form and join trade unions and to ensure that any worker whose right to organize is violated shall have an effective remedy.

3. Obligations under International Labour Organization Conventions

ILSs are primarily tools for governments which are seeking to draft and implement labour laws and policies in conformity with internationally accepted standards. These standards thus serve as targets for harmonizing domestic law and its practice in a particular field. It helps to attain those goals by encouraging opportunities for decent work, enhancing social protection and strengthening dialogue on work related issues.

Bangladesh has been an important and active member of ILO since 22 June, 1972. As a member of the ILO, Bangladesh is under an obligation to respect, to promote and to realize the principles of the core Conventions, in good faith and in accordance with the Constitution, There are 190 Conventions of ILO to date. Among them 8 Conventions are considered as the fundamental Conventions. These Conventions are considered as fundamental because they are binding upon every Member State of ILO irrespective of the ratification.

The eight fundamental conventions are as follows:

1. *Forced Labour Convention, 1930*

It deals with the obligation of Member State to entirely eliminate the forced labour. However, military, civil service, court orders for emergencies and minor communal orders are excluded from this Convention.

2. *Freedom of Association and Protection of the Right to Organise Convention, 1948*
This Convention prescribes that there will have no discrimination if a worker wants to join a trade union and to take collective action.

3. *Right to Organise and Collective Bargaining Convention, 1949*

It provides the right of workers for collective bargaining with an owner through a trade union.

4. *Equal Remuneration Convention, 1951*

This Convention includes that every worker will be paid equally and there should have no discrimination on ground of gender.

5. *Abolition of Forced Labour Convention, 1957*

This Convention deals with the 'positive obligation on member states to ensure that all forced labour is abolished'.

6. *Discrimination (Employment and Occupation) Convention, 1958*

It ensures that a worker must not be discriminated for his or her 'race, colour, sex, religion, political opinion, national extraction or social origin' and so forth.

7. *Worst Forms of Child Labour Convention, 1999*

This Convention articulates several duties upon the Member States including the duty to identify and take steps for prohibiting the worst forms of child labour.

Bangladesh has ratified all of the above 7 conventions.

8. *Minimum Age Convention 1973*

This Convention has required the minimum age of the workers. A worker must be at least 15, or a higher age determined by Member States or 14 for Member States whose education systems are developing. For dangerous work, the Convention set the bar at 18 years (16 years under certain conditions). Bangladesh has not ratified this convention. Notably, Bangladesh has ratified 33 ILO conventions to date.

4. Compliance of Core ILO Conventions in Legal Norms and Practice

4.1 Freedom of Association and Collective Bargaining

Workers' right to organize is well recognized under international human rights law, and explicitly guaranteed in the ICCPR and the ICESCR as well as in two of the core ILO conventions, ILO Convention 87 concerning Freedom of Association and Protection of the Right to Organise [8] and ILO Convention 98 concerning the Right to Organize and Collective Bargaining[9] which Bangladesh has ratified. Under ILO Convention 87, workers shall have the right to establish and to join organizations of their own choosing[10] and to elect their representatives in full freedom.[11] It also states that the public authorities should refrain from any interference that would restrict this right or impede its lawful exercise.[12]

4.1.1 State of Compliance in Legal Framework

The Constitution of Bangladesh provides for the basic legal foundation for formation of organizations by workers and employers.[13] The main statutory framework for such organizations is the Bangladesh Labour Act, 2006 (BLA 2006). The Act recognizes the right to join trade unions for workers and the right to join associations for employers. According to section 176 of the Act every worker has the right to constitute a trade union and to join an association of their choosing. It also provides that trade unions shall have the right to establish and join federations and any such union or federation shall have the right to be affiliated with international organizations and confederations of workers' organization.[14] According to section 183 of the Act, a group of establishments shall be deemed to be one establishment for the purpose of formation

of trade union.[15] The Act prescribes that the officers shall be elected by the general body of trade union and the term of officers shall not exceed two years. Section 179 provides that, for registration, a trade union must have a minimum membership of 30 per cent of the total number of workers employed in any establishment.[16] Thus the BLA, 2006, as amended in 2013, though includes several improvements, but it does not address the longstanding concerns expressed by stakeholders and the ILO with regards to ILO Conventions 87 and 98 on Freedom of Association (FoA) and Collective Bargaining (CB). The law sets a very stiff requirement in trade union formation, that is, support of 30 per cent of the workers in an establishment.[17] For new unions, this is virtually a trade union ban.

Again, the law has also imposed a ban on strikes in some industries, in particular a 3-year ban on strikes in newly-established industries and industries established or supported by foreigners. The requirements for a lawful strike are also rigid, particularly the requirement of proof of support of at least two third members of the CBA unit.[18] But such requirement is a legal disadvantage on the part of the workers because it gives the employers a chance to create divisions in the ranks of leadership which may reduces chances of the workers success, either in striking or in collective bargaining.

According to the amended Act in 2013, there cannot be any TU offices within the 200 yards of an industry which limits, physically, the scope for trade union activities. The law though allows three registered trade unions in an establishment but again an amendment states that workers of Chittagong and Mongla Sea Port can form only one trade union at their respective workplaces. Thus, the law itself is discriminatory and contradictory. Again, the limitations on the trade unions' right to elect representatives in full freedom (including from outside of their enterprises), broad discretionary powers of the administration to reject a trade union's registration, and penalties of imprisonment for participation in, or instigation to take part in unlawful industrial action or go-slow, also exists as bars to workers freedom of expression and trade unions. On the other hand, specific provision regarding protection of workers in lock-out situations is absent; especially if the intention of the employer is to temporarily close down the factory to destroy the union. Thus, further amendments to the law are therefore needed to bring it into conformity with fundamental labour rights.[19]

4.1.2 Compliance with ILO Conventions No. 87 and No. 98 in Practice

In Bangladesh, the trade union movement and the presence of trade unions in the private export-oriented sectors such as RMG, EPZs, shrimp exporting firms, finished leather and leather goods is relatively weak.[20] ILO Convention nos. 87 and 98, the right to Freedom of Association (FoA) and to Collective Bargaining (CB) at the workplace is not respected in the industrial sector, though the government has ratified both of them. Although the Constitution of Bangladesh recognizes the right to form or join unions, there are many restrictions. According to ILO Freedom of Association Decisions Digest, 2006, the right to organize includes the right to official recognition through registration, and the conditions of registration cannot constitute a form of prior authorization before establishing a union.[21] But, under the BLA, 2006, in order to be registered, unions must have government approval and no trade union action can be taken before the registration. Again, the Digest also stated that if the law requires a minimum number of members to establish a union, states cannot set the number so high that it effectively renders it impossible to set up a union.[22] But according to the BLA, 2006 before a union can be registered, 30 percent of workers in an enterprise have to be members and the union can be dissolved if its membership falls below this level. The Committee on FoA of ILO has repeatedly found that a 30 per cent membership requirement concerned to establish an organization is too high.[23]

Although trade union is legally permitted in Bangladesh but employers strongly resist them using either a strong-arm tactics to intimidate organizers or bribes to buy them off. Workers are regularly harassed who are suspected of carrying out trade union activities. It is common in Bangladesh that workers who want to form union have to lose their jobs or threaten by the goons from owners' side. [24] Very often workers are dismissed on the ground of misconduct. Taking shelter of the Labour Court is of little use given the underlying corruption and serious backlog of cases, which can stretch back more than several years, in some instances. However, such legal actions are initiated individually rather than as part of a wider collective struggle. This failure to organize collectively can be partly attributed to the active hostility of employers to trade union activity within the industry.

Again, trade unions usually have strong links with political parties and act as industrial wings of political parties rather than be concerned about workers' interests. On the other side, most of the owners also have political involvement. Thus, very often they use the union leaders for their personal interest. They impose restrictions on formation of Trade Union (TU). Sometimes, workers are allowed to form union but in limited scope or allow to form union by the workers who are in favour of the owners. Under these processes of union formation, there is a chance of manipulation of the bargaining process and exploitation of the workers by the owners. The authorities often use violence to disperse workers or force them to return to work. In the Advanced Chemical Industries (ACI) Pharmaceuticals plant in Narayanganj about 400 employees protested the use of temporary workers when they were assaulted by police who fired tear gas and rubber bullets against them.[25] The police caused one death, about 100 injuries and 130 workers were arrested. The security guards opened fire against 3000 protesting workers in Kushtia. Three persons died, one of whom succumbed to his injuries some days after the event. Another 35 persons were reported injured, some of them by bullets. The workers were protesting for a pay rise.[26]Another case shows how security forces of Bangladesh may be involved in silencing the unions.[27]

The workers in the Export Processing Zones (EPZs) are regulated by The EPZ Workers' Welfare Association and Industrial Relations Act, 2010. It also contains numerous and significant restrictions and delays regarding the right to organize in EPZs. Such as, it does not allow the formation of workers' associations in industrial units established after the commencement of the Act and, until a period of three months after the commencement of commercial production in the concerned unit (section 24). It also prohibits more than one workers' association in each industrial unit[28] and establishes a high and complicated minimum membership and referendum requirements for the establishment of workers' associations. Without the consent of a minimum of 30 per cent of the eligible workers of an industrial unit, workers' association cannot be formed and this also has to be verified by the Executive Chairperson of BEPZA. He shall then conduct a referendum; if more than 50 per cent of the total number of workers cast their vote, and more than 50 per cent of the votes

cast are in favour of the formation of the workers' association, only then the workers shall acquire the legitimate right to form an association (sections 14, 15, 17 and 20). It demands an excessively high minimum number of trade unions to establish a higher level organization (more than 50 per cent of the workers' associations in an EPZ.[29] It also prohibits a federation from affiliating with federations in other EPZs and beyond EPZs (section 32(3)). It does not seem to afford guarantees against interference with the right of workers to elect their representatives in full freedom (e.g. the procedure of election shall be determined by the BEPZA, etc.[30]

The right to organize and form employers' and workers' organizations is the prerequisite for sound collective bargaining and social dialogue. But the incidents of violations of this right suggests that there are weaknesses in the legal framework regarding enforcement of ILO conventions and related labour laws that are in force in Bangladesh. The law establishes excessive requirements and complicated procedures in order to register a trade union and, in practice, the registrar rejects many applications. In particular, most employers still lack intention to comply with key labor standards. Employers are not impeded from using various anti-union practices including threats, dismissals, legal suits against unionists and intimidation. As discussed earlier, the police often use excessive force to disperse protesting workers, in some cases causing deaths and often causing injuries. In such a scenario, Bangladesh needs to work more with the industry and other stakeholders to ensure full compliance with Convention no. 87 and no.98 and to ensure sustainable working environment in this sector.

4.2 Discrimination and Equal Remuneration

Bangladesh ratified ILO Convention No. 111 (1958), Discrimination (Employment and Occupation) in 1972, ILO Convention No. 100 (1951), Equal Remuneration in 1998.The ILO Convention adopted by the International Labour Conference in 1958, is an effort to promote the principle of equal rights. This convention defines discrimination as any distinction, exclusion, or preference based on race, color, sex, religion, political opinion, national extraction, or social origin that impairs equal access

to vocational training, equal access to employment and to certain occupations, or equal terms and conditions of employment.

According to ILO, a good policy on gender and non-discrimination at the factory level may help the factory select the right person for specific jobs and encourage people to contribute to their full potentials and eliminate discrimination-related stress. All these will contribute to improve productivity and any form of discrimination might produce psycho-social hazards that will result in workers' anxiety and affect productivity. Equal opportunity for all citizens in respect of employment or office in the service of the republic irrespective of religion, race, caste, sex or place of birth has been clearly proclaimed in the Bangladesh Constitution.[31] According to the Bangladesh labour Act, 2006, employers are obliged to ensure equal wages for male and female workers for work of equal nature or value, and no discrimination should be made on the ground of sex.[32] The positive aspect of the current law is that it is in line with the ILO provision; it mentions the principle of wage setting is equal pay for equal value of work. But the minimum wages of a worker of RMG sector as fixed by the latest wage scale does not commensurate with rising prices and increasing cost of living. Again, the minimum rate of wages fixed by the Government is final and cannot be questioned by any person in any manner in any court or authority. In the determination of minimum wage, the family size criterion has not been considered nor is the need to balance efficiency and equity. Further, setting the minimum wage by forming a wage Board every five years is not realistic considering the rapid changes in the economy and recent trends in standards of living.

On the other hand, the current provision lacks specific provisions on discrimination related to workplace facilities and treatment; only the sex of workers has been considered as discrimination ground; other grounds of discrimination such as race, caste, sex or place of birth ethnicity, and age is not included although discrimination made on those grounds is prohibited in the Constitution. As such, the labour laws of Bangladesh need to be amended to incorporate all these grounds on which employers must not discriminate.[33]

The BLA, 2006 prohibits employers to employ women workers for the period between 10 p.m. to 6a.m., and yet, relaxes this rule by allowing the same women workers to work if the latter give their consent. The calculation of overtime (OT) pay is not spelled out for piece-rated workers. The law also does not provide specific guidelines on the fixing of basic wages for the piece-rated workers. The BLA, 2006 recognizes various types of leaves, e.g. weekly holiday, casual leave, festival leave, medical leave, annual leave, and maternity leave. However, the law is discriminatory in the sense that the level of leave entitlement is not same for all categories of workers, for example, some workers like tea-state workers do not enjoy casual leave.

In Bangladesh, total workforce is about 78 million.[34] Informal sector workers, who form the largest section of the total workforce in Bangladesh, have not been brought within the legal framework of minimum wages. Such as, agriculture and domestic workers who forms 80% of the total workforce has been kept out of the wages structure.[35] In some sectors, workers are still being paid under the decades old wages structure. For example, wages for agricultural workers were last determined in 1984 and since then wage structure has not been reviewed and no new scale has been fixed so far.

Though the Act contains important provisions prohibiting indecent behavior towards women, [36] and discrimination based on gender and disability, including equal wages for equal work,[37] but it includes no measures to tackle sexual harassment of women, who make up the vast majority of workers in the ready-made garment sector. In May 2009, the High Court Division passed a historic decision that can be used as a guideline on sexual harassment.[38] The Court issued guidelines that should be observed in all workplaces and educational institutions. The guidelines require employers to take steps to prevent sexual harassment, establish complaints mechanisms such as complaints committees, and implement sanctions. The Court said that the guidelines should be observed like law until the government enacts proper legislation on the matter. But in practice, sexual harassment and discrimination are widespread and common phenomenon in Bangladesh, especially in garment factories. Sometimes women workers run the risk of rape and harassment, but they are threatened with dismissal if they speak out. In fact, women are employed in this industry mainly to

exploit the comparative advantages of their disadvantages, like the low price of their labour, their lower bargaining power, and their docility.

In Bangladesh there is no uniform minimum wages for workers across all sectors. Any homogeneity between minimum wages fixed for different sectors and industries is also absent. Different wage structures prevail in different industries that are relevant to the job pattern of the workers. The law also stipulates equal remuneration between men and women for work of equal value. Female garments workers face discrimination in job placement, increment and promotion. In the construction industry, females are discriminated in wages, benefits and other areas. Thus gender-based inequalities continued to prevail in the labour market in Bangladesh. The 2007 wage survey carried out by BBS among non-firm production workers found that the average daily income of women amounted to 69.7 percent of that of men.[39] It is thus clear that Bangladesh has enacted legal regime to conform to the Equal Remuneration Convention, 1951, what we are lacking is the proper implementation of the legal provisions.

4.3 Elimination of Forced and Compulsory Labour

Although forced labour is universally condemned, millions of people around the world are still subjected to it. Not only is forced labour a serious violation of a fundamental human right, it is a leading cause of poverty and a hindrance to economic development. Bangladesh ratified, in 1972, both ILO Convention No. 29 (1930), the Forced Labour Convention and ILO Convention No. 105 (1957), the Abolition of Forced Labour Convention. Forced labour is strictly prohibited by the Constitution of People's Republic of Bangladesh. Article 34 (1) of the Constitution states, 'all forms of forced labour are prohibited and any contravention of this provision shall be an offence punishable in accordance with law.' Therefore, any law approving forced labour is *void ab initio* as per the constitutional framework of legislation in Bangladesh. But this constitutional guideline is still ignored in both the BLA, 2006 and EPZ Workers Welfare Association and Industrial Relations Act, 2010 as they do not define the word 'forced labour' and do not provide for the punishment and procedure thereof.

In practice, forced labour is a common scenario in Bangladesh. In the case of working

hours and overtime, the BLA 2006 provides eight hours per day working hours and two hours overtime. But a significant number of working sectors, however, do not favour the workers in terms of the specific working hours. Study conducted by Hossain, Ahmed and Akter (2010) shows that, all the garment workers interviewed works more than eight hours daily; sometimes they work 13-14 hours a day.[40] For the construction workers, work hours range at 8-12 hours. Again, overtime is a source of dissatisfaction for workers. Sometimes overtime is forced, not optional; whenever factory management decides, workers are bound to work extra hours or lose their jobs. Some are paid at late mostly at the end of month, sometimes they have to lose their jobs if he or she expresses any demand for payment of overtime.[41] Also, there is a common feeling of deprivation and being cheated in terms of overtime pay. Human Rights Watch (2015) found many workers complained as they were given unattainable production targets they were forced to work late at night or on holidays, and were then denied the overtime pay they should have received.[42] These sorts of violations of labour laws are common in the most of the major industry including garments and ship breaking industry in Bangladesh.[43] Under the labour laws of Bangladesh workers are entitled to holidays, casual leave, festival leave, annual leave and sick leave. But in most of the cases, workers are forced to have duty in the holidays by the name of overtime; even they are eve and anon rejected to get leave when they get sick.[44]Sometimes some employers make salary deductions for the workers who enjoy weekly rest day, festival leave and other leaves they are entitled of.[45]

Thus Bangladesh needs to nourish a culture of enforcement and held the employers responsible for forced labour. Again, as Bangladesh has ratified the Convention concerning the Abolition of Forced Labor, Bangladesh has the obligation to take effective measures to secure the immediate and complete abolition of forced or compulsory labour as specified in Article 2 of the Convention.

4.4 Child Labour: Still a Reality

Bangladesh has not ratified ILO Convention No. 138 (1973), the Minimum Age Convention but ratified Convention No.182 (1999), the Worst Forms of Child Labour

in 2001. The BLA, 2006 sets the minimum age for admission to work at the age of 14, though children from 12 to 14 may perform light work for a few hours per day. Although the Act approves so called 'light work' for children; but children are working in Bangladesh in the fields of risky jobs such as brick fields, iron factory, silver factory, and tannery industry. Children work mostly in agriculture, manufacturing, services including domestic service, and street-based activities.[46] Both the garments and construction industries still employ child workers. The employment of child workers in both the garments and construction industries is governed by oral contract. The natures of works given to the child workers are the same as those given to adult workers.

Though it is prohibited for children to perform "hazardous work," but in practice, there are 7 million child workers in Bangladesh of whom 1.3 million are engaged in hazardous work.[47] In agriculture and manufacturing, children sometimes have to deal with dangerous pesticides and chemical substances, operate heavy machinery and carry heavy loads without training, knowledge of safety procedures or protective gear. Many children suffer and die from occupational diseases, such as Diarrhoea in the shrimp industry, and several types of accidents like cuts and mutilations when operating machinery.

According to the 2006 ILO Baseline Survey on Child Domestic Labour (CDL),[48] in Bangladesh there are 2 million domestic workers of whom more than 421,000 are children of 5 to 17 years of age. The Survey indicated that more than 99 per cent of the child domestics worked 7 days a week for exceedingly long hours. There are reports of labour violations and sexual abuse. Survey also estimated that more than half of them did not receive any wages. But the BLA, 2006 does not apply to domestic service, agricultural work and house-based economic activities, so children employed in those sectors do not benefit from the Act's protection.

Thus, children perform a wide range of jobs in all sectors whereas child labour is a violation of core fundamental rights. Because of widespread poverty poor children frequently enter into the labour market and earn cash to feed their families. The extent of child labour is omnipresent in Bangladesh, although the Worst Form of Child

Labour Convention, 1999 was ratified. That is, child labour is not regulated in compliance with international standards and enforcement is also ineffective.

5. Recommended Initiatives for Effective Enforcement of ILS

- The BLA, 2006 and the EPZ Workers Welfare Association and Industrial Relations Act, 2010 falls short of International Labour Organization labor standards ratified by Bangladesh, including Convention No. 87 on freedom of association and Convention No. 98 on the right to organize and bargain collectively. Both the Act should be revised to ensure that they are in line with international labor standards.
- The 30 per cent representation requirement for formation of a union should be replaced by a short, simple procedure for application. The law should be amended in order to grant protection of unions from interference by employers and the requirement for submission of names of union organizers to the employers should be revoked.
- The special clauses prohibiting strikes in new establishments and those owned by or established in collaboration with foreigners should be removed.
- The government should not have the power to prohibit strikes and other industrial action after 30 days of action.
- Termination clause[49] of the BLA, 2006 should be repealed. Provisions should be included against dismissal on account of trade union activity or membership; dismissal by way of victimization; dismissal not in good faith but in the colourable exercise of the employer's rights, etc. should be made unlawful. Employers should be made accountable if termination or dismissal is made without due regard to natural justice.
- The penalties for offenders violating the provision regarding child labour should be increased drastically.

- It is recommended that policies and programs in the workplace be formulated and adopted for the promotion of the rights and welfare of women workers who are now seen as crucial partners in attaining national economic development. [50] The legal framework should be strengthening to prevent all forms of discrimination against women. Provision prohibiting sexual harassment at the workplace should be included. It should include adequately stringent penalties and complaint mechanisms.
- New provision should be included in order to prohibit any sort of discrimination on the grounds of race, colour, religion, national or social origin.
- The Government of Bangladesh in coordination with the ILO, should undertake a program to educate garment factory owners on the constructive role of labor unions in garment factories and endeavor to ensure that anti-union activities are eradicated. They should sponsor a program to educate garment factory workers about their rights and responsibilities with respect to freedom of association, organization and collective bargaining.[51]
- The Government of Bangladesh and the Employers Association should immediately develop and implement tough and effective sanctions against factory owners who engage in anti-union activity, and advance progress in sanctioning owners who do not comply with required safety standards.[52]
- The government should build up their law enforcement and judicial capacities in order to monitor and enforce labour laws, including legislation on violations of trade union rights, child labour and forced labour and start punishing those who commit these crimes.
- It is recommended that a tripartite organization composed of representatives of

  Government, labour unions and Employers Association is established to monitor the process of maintenance of labour standards.

6. Conclusion

The study examined the extent of application of core international labour standards in the labour jurisprudence of Bangladesh. According to the findings, almost all of the provisions of the labour laws and core conventions of ILO have experienced violation to more or less. Thereby, it is clear that a gap between ILO ratification and practices is there in reality. Now, finding this gap to improve these circumstances as well as to ensure the labour rights and to enforce the laws properly will be the core objective from the policy makers and the government. The existing policies and legislations need to be revised and redesigned to cope with the situation of labour injustice and to fulfill the Government's commitments and obligations under ratified Conventions. Though some important legislative and regulatory changes have been made but more needs to be done to ensure that the laws are fully compliant with the ILO fundamental rights to freedom of association and the rights to collective bargaining. Necessary changes to the legislation covering EPZs should be adopted to allow full freedom of association and collective bargaining rights in line with ILO fundamental Conventions and with a view to address the conclusions and recommendations of the ILO supervisory bodies. Therefore the proposed amendment regarding legislation needs to be intensely discussed as an attempt to have the amendments flawed free and pragmatic for betterment of all concerned. Unless government takes appropriate steps to establish labour rights, to prevent forced labour, to eliminate discrimination in workplace and to abolish child labour, safe and healthy work environment will not be ensured. To this end, international partners and all stakeholders involving employers, workers, governments as well as national bodies should come forward with a sense of togetherness to bring significant change and to ensure proper expansion and sustainable development of the promising industrial sector.

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responsible to justice, the murderer(s) is still to be found. Family and colleagues of Islam Aminul believe that national security forces are involved in the incident and they have called for the case to be transferred to the Criminal Investigation Department (CID) which has more resources and skills to shed light on this murder.

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Customers' Perception on Mobile Banking Operation in Bangladesh: Challenges and Strategies

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Abstract

Mobile banking is a revolution for banking sector in today's telecommunication and internet based digital business economy. Many banks are now incorporating mobile banking service as a key element of their growth strategy. In Bangladesh, mobile financial service is becoming very popular among all classes of people in recent times. This paper examines customers' perception on usage of mobile banking in addition to attractiveness and challenges of adopting mobile banking. This paper also recommends some strategies for meeting the challenges. To conduct the study, a total number of 195 respondents were taken as sample from Chittagong region by using simple judgmental sampling technique. A face-to-face interview method was followed by using a structured questionnaire to collect the data. Five points Likert scale was used to examine the customers' perception on the usage of mobile banking and frequencies, percentage, mean, standard deviation were computed to analyze the problem. Garret's ranking technique was applied to rank the qualitative data for analyzing attractiveness and challenges of mobile banking. The study reveals that customers perceived mobile banking as trustworthy, secured, reliable, easy and convenient. The study also reveals that quick fund transfers, wide network coverage, saving of time to go to bank are the major issues that attract customers to use mobile banking. Customers perceive that high service charge, security complexity, no different deposit scheme are the major challenges of mobile banking operations in Bangladesh.

Key Words: Mobile banking, Customers' perception, Bangladesh.

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1.0 Introduction

Today's banking industry focuses on E-banking technologies to render better service to their customers. Mobile banking is a widely used and acceptable E- banking service which is getting more popularity in the contemporary period. In developing country, the number of mobile phone users is much higher than bank account holders. This electronic device has facilitated to fill the gap in the financial service infrastructure and provided new business opportunity to extend mobile financial service in addition to providing connectivity (Reed, Jotischky, Newman, Mbongue & Escofet, 2014).

Mobile banking is a system that facilitates customers to access account and operate transaction through mobile phone (Parvin, 2013). Bangladesh Bank defined mobile banking as an approach for offering financial services to the customers by the combined effort of bank and mobile operators (BB, 2012). It can be used to check balance, operate transaction, bills payment, buy airtime and in some other operations. The convenience, security issues, anytime, anywhere banking facilities encourages customers to adopt mobile banking (Ahfour, 2014).

Mobile banking considers the contribution to the poorer sector in the economy by accepting small amount of savings and transaction. Majority of the people in Bangladesh live in rural areas and offering banking services by establishing branches across the remote areas is not an option due to cost and regulatory restriction. Widely distributed agents, affordable device and constantly expanding service network of mobile operators facilitate banks to include the behindhand people under the coverage of financial service delivery.

In Bangladesh, Dutch Bangla Bank Ltd (DBBL) launched mobile banking service first time in 2011. By 2017, at least 18 service providers are offering mobile financial service by 746,000 registered agents. 57.3 millions of registered users are doing a little over tk. 718 crore of daily transaction across the country and the number of daily average transaction is 49, 21,297. bKash of BRAC Bank has the highest number of agents and clients in the country followed by Dutch-Bangla Bank's Rocket.

The use of mobile phone to transact banking operation is cramped to increase significantly in near future. Consumers' confidence on offered service is a vital issue

for the growth of mobile financial service in addition to the technological advances. For enhancing customers' trust on provided service, legal aspect is getting more importance. Bangladesh Bank could extend regulatory framework over banks and improve their monitoring on the mobile banking operation to ensure security of customers. Banks need to use technology that must be secured, cost effective and convenient. To render efficient and effective service, registered agents of mobile banking service providers should be well trained.

There were very few studies conducted on mobile banking practices in Bangladesh. Some studies have been undertaken to assess customers' satisfaction on mobile banking service quality. So far, no comprehensive study has yet been conducted regarding customers' perception on usage of mobile banking in addition to attractiveness and major challenges. The focus of this study is to fulfill the gap. Different strategies for meeting the challenges are also discussed in this study.

2.0 Literature Review

Mobile banking helps customers to receive banking services including saving, withdrawing, transferring, receiving fund from a mobile account by using a mobile phone (Abdullah, Rahman & Tooheen, 2007). It is a mechanism of no branch banking system that provides banking facilities to unbanked people in remote areas at reasonable cost.

Khan, Akter and Akter (2017) analyzed the perception of users to adopt mobile banking. They found that perception to security, complexity, cost and convenience in mobile banking service delivery influence significantly to adopt mobile banking. The study also concluded that trustworthiness and network problem have no influence on mobile banking adoption in Bangladesh. Rahman, Hasan and Mia (2017) conducted a study to assess customers' satisfaction on mobile banking service quality in Bangladesh. The study showed that tangibility, reliability, responsiveness and empathy have significant positive relation to customer satisfaction. The study also found no significant relationship between assurance and customer satisfaction. Jannat and Ahmad (2015) observed that factors relating to security and trust have significant influence on customer satisfaction. They also mentioned that ineffective advertisement

has negative influence on the customer's satisfaction. Islam and Hossain (2012) investigated some issues that influence the customers' acceptance of mobile banking services. The study revealed that updated technology and its availability are the most significant issues that encourage customers to feel positive with mobile banking.

Deb, Harun and Bhuiyan (2011) identified that handset operability; convenience and security are the major factors that influence customers to adopt mobile banking. They also realized the importance of some others factors namely, cost, confidentiality, network procedure and reliability to customers' acceptance. Hossain and Hoque (2014) identified some factors, such as technical and security concern, regulatory and supervisory issues and legal aspects impede proper execution of mobile banking. Kabir (2013) conducted a study on factors influencing the usages of mobile banking. They observed that some factors like privacy risk, performance risk, social risk and performance risk have negative influence on the usages of mobile banking and some factors like perceived ease of use, low cost, perceived usefulness, time savings influence positively to use mobile banking. Ahmed, Rayhan, Islam and Mahjabin (2012) mentioned that mobile banking saves time and cost than traditional banking which attract customers to mobile banking. Nandhi (2012) observed that mobile banking provides a convenient way to save the small savings safely by avoiding wasteful expenses or keeping cash on hand.

Inam and Islam (2013) conducted a study on technical architecture and present scenario of mobile banking in Bangladesh. They identified that handset operability, security complexity, application distribution are some major challenges for developing sophisticated mobile banking. Sharma and Kansal (2012) opined that due to customers' suspicion about convenience and security of mobile banking service, the use of mobile banking is far behind than the technological advancement. They also found that customers are not getting updated service at a reasonable cost from banks.

Sajib and Zapan (2014) examined customer satisfaction and loyalty to mobile banking service quality. They recommended that future marketing campaign should emphasize on reliability and responsiveness of mobile banking service followed by efficiency and convenience. The study also focused on increasing the awareness and trust of

customers on mobile banking operation. Hossain and Hoque (2014) suggested that banks should provide user manual containing perceived benefits of mobile banking. They also added that safety measures such as firewalls, intrusions detection and other relevant security devices should be promoted in the mobile banking operation. Upal (2010) conducted a study on mobile banking detonation in India and showed that the profitability of private sector banks increases through mobile banking service delivery. He recommended some strategies, such as increasing awareness about mobile banking, extending the area of mobile banking service including rural and semi-urban areas for improving mobile banking usages. Jannat and Ahamd (2015) observed that low income level customers are dissatisfied with cost effectiveness issues of mobile banking. The study suggested that service providers should divide the market into different segments and provide several customized package with multiple investment facilities to different segments.

3.0 Objectives of the Study

The objectives of the study are:

i) To understand the customers' perception on the usage of mobile banking.

ii) To detect the attractive issues and challenges of mobile banking.

iii) To recommend some strategies for meeting the challenges.

4.0 Research Methodology

The study is descriptive in nature. Data used in this study have been collected basically from primary sources. Data were collected from a sample of 195 respondents in the age group of 18 to 50+ years. A simple judgmental sampling technique was used to find the respondents from Chittagong city.

A face to face interview method was followed by using a structured questionnaire to collect the data. Various related research articles were studied to construct the questionnaire. The questionnaire contained three parts. Part I included demographic variables to obtain some basic information of respondents like age, gender occupation. Part II contained customers' perception on the usage of mobile banking. Five points Likert Scale (from 1- strongly disagree to 5- strongly agree) was used to assess the

perceptions. In part III, major usages, attractiveness, and challenges of mobile banking were assessed by using Garret table rating scale to rank qualitative data in a higher priority entitling 1 to lowest priority.

Demographic variables and customers' perception on mobile banking usages were analyzed in a descriptive, multidimensional manner using SPSS 16.0 software and frequencies, percentage, mean, standard deviation were computed to analyze the problem.

To analyze the attractiveness and challenges of mobile banking, Garret's ranking technique (Masukujjamam, Siwar, Mahmud & Alam, 2016) was used. It was calculated as percentage score and the scale value was obtained by employing Scale Conversion Table given by Henry Garrett. The percentage score was calculated as follows

Percentage score = 100(Rij-0.5)/ Nij)

Where Rij is the rank given for i^{th} item jth individual

Nij is the number of items ranked by jth individual.

Using Scale Conversion Table of Henry Garrett, the percentage score was obtained for all ranks. The score value (fx) was calculated for each factor by multiplying number of respondents (f) with respective scale value (x). The total scores were computed by adding the score value (fx) of each rank for every factor. The mean score was then calculated to know the order of perception given by the respondents.

5.0 Data Analysis

5.1 Age of Respondents:

Age of major portion of respondents (46.67%) was of 18-30 years. They are followed by those between 31 to 40 years (28.21%), 41 to 50 years (16.41%), above 50 years (6.15) and below 18 years (2.56%) respectively (table 1).

Table 1: Age of respondents

Source: Field survey

Age limit	Frequency	Percentage
Below 18	5	2.56
18-30	91	46.67
31-40	55	28.21
41-50	32	16.41
Above 50	12	6.15

5.2 Gender of Respondents:

Table 2, shows the gender distribution of respondents. 70.26 percent respondents were male and the rest 29.74 percent were female. Due to greater involvement of male in job, business or different other activities, use of mobile banking are also higher than female.

Table 2: Gender of respondents

Gender	Frequency	Percentage
Male	137	70.26
Female	58	29.74

Source: Field survey

5.3 Profession of Respondent:

Most of the users of mobile banking were service holder (32.31%) followed by students (29.23), which indicates that majority of users are educated and young. Among the rest, 19.49 percent were businessman, 12.31 percent were other profession and 6.66 percent were farmer (table 3).

Table 3: Profession of respondents

Occupation	Frequency	Percentage
Student	57	29.23
Service holder	63	32.31
Businessman	38	19.49
Farmer	13	6.66
Others	24	12.31

Source: Field survey

5.4 Customers' Perception

Trust: Trust is the consumers' confidence about the proper maintenance of private information and prevention from leakage. Table 4 shows the customers' perception to trust on mobile banking. In response to the statement - "I belief that my private information will be prevented from unauthorized access", majority of the respondents (34.4%) agreed on the statement though a high percentage of respondents (31.8%) felt neutral. The standard deviation of 1.09465 shows little deviation in the customers' perception regarding trust.

Table 4: Perception to trust

Responses	Frequency	Percent	
Strongly disagree - 1	13	6.7	
Disagree – 2	19	9.7	Mean 3.4615
Neutral – 3	62	31.8	Std. Deviation 1.09465
Agree – 4	67	34.4	
Neutral – 5	34	17.4	
Total	195	100.0	

Source: Field survey

Security: Security is the consumers' confidence about safely savings and transferring of fund. Table 5 shows the customers' perception to security. In response to the statement -"I am confident that my fund will be securely saved and protected from hacking", 34.4 percent respondents felt secured on the operation of mobile banking followed by 33.8 percent felt neutral on the statement. The standard deviation of 1.00430 shows better consistency in response to the statement.

Table 5: Perception to security

Responses	Frequency	Percent	
Strongly disagree - 1	9	4.6	
Disagree - 2	36	18.5	Mean 3.2410
Neutral - 3	66	33.8	Std. Deviation 1.00430
Agree - 4	67	34.4	
Neutral - 5	17	8.7	
Total	195	100.0	

Source: Field survey

Reliability: Reliability is the consumers' belief about the delivery of promised service accurately and effectively. Table 6 shows the customers' perception to reliability. In response to the statement "I feel that mobile banking is reliable to offer the promised service properly", majority of the respondents (32.3 %) agreed with the statement. The standard deviation of 1.09024 reflects comparatively less dispersion in the response.

Table 6: Perception to reliability

Responses	Frequency	Percent	
Strongly disagree - 1	8	4.1	
Disagree - 2	46	23.6	Mean 3.2718
Neutral - 3	52	26.7	Std. Deviation 1.09024
Agree – 4	63	32.3	
Neutral - 5	26	13.3	
Total	195	100.0	

Source: Field survey

Easiness: Easiness is the consumers' belief about simple registration and operation procedure through mobile phone. Table 7 shows the customers' perception to easiness. High percentage of respondents (47.2 %) agreed with the statement -"I feel that I can operate mobile banking easily". Standard deviation is relatively low with 0.91546 which indicates a greater consistency in the response to the statement.

Table 7: Perception to easiness

Responses	Frequency	Percent	
Strongly disagree - 1	6	3.1	
Disagree – 2	12	6.2	Mean 3.6462
Neutral – 3	56	28.7	Std. Deviation 0.91546
Agree – 4	92	47.2	
Neutral – 5	29	14.9	
Total	195	100.0	

Source: Field survey

Convenience: Convenience is the consumers' feelings about the benefits of mobile banking regarding time, cost and other facilities. Table 8 shows the customers' perception to convenience. Majority of the respondents (40 %) responded positively to the statement- "I think that mobile banking is convenient for transferring fund by saving time and cost of going to the bank".

Table 8: Perception to convenience

Responses	Frequency	Percent	
Strongly disagree - 1	8	4.1	
Disagree – 2	24	12.3	Mean 3.5128
Neutral – 3	54	27.7	Std. Deviation 1.03226
Agree – 4	78	40.0	
Neutral – 5	31	15.9	
Total	195	100.0	

Source: Field survey

5.5 Usage of Mobile Banking Service

Table 9: Usage of mobile banking service

Usage of mobile banking service		1	2	3	4	5	Total	Total Garrett Score	Mean Score	Rank
Buy airtime	f	49	60	32	37	17	195	10780	55.28	2
	fx	3675	3600	1600	1480	425				
Transferring of fund	f	61	52	33	25	24	195	10945	56.13	1
	fx	4575	3120	1650	1000	600				
Shopping	f	24	23	37	36	75	195	8910	42.79	5
	fx	1800	1380	1850	1440	1875				
Bills payment	f	36	29	58	42	30	195	9770	50.10	3
	fx	2700	1740	2900	1680	750				
Others	f	25	31	35	55	49	195	8345	45.69	4
	fx	1875	1860	1750	2200	1225				
		75	60	50	40	25				

Source: Field survey

Mobile banking provides a wide range of services to the customers and usage of those services is shown in table 9. Customers generally transfer fund using wide network coverage of mobile banking and this fund transferring is placed at top of the usage by

customers. Customers repetitively use mobile banking to buy airtime of different mobile operators and to pay different types of bills including electricity, gas. Customers also use mobile banking service in shopping and some other purposes.

The result is consistent with previous study by Sajib and Zapan (2014). They observed that most of the respondents use mobile banking in money transferring purpose.

5.6 Attractiveness of Mobile Banking

Table 10: Attractiveness of mobile banking

Attractiveness of mobile banking		1	2	3	4	5	6	Total	Total Garrett Score	Mean Score	Rank
Save time to go to bank	F	25	18	62	47	23	20	195	9880	50.67	3
	Fx	1925	1134	3348	2162	851	460				
Quick fund transfer	F	59	45	29	23	22	17	195	11207	57.47	1
	Fx	4543	2835	1566	1058	814	391				
Anytime banking	F	28	30	21	44	47	25	195	9518	48.81	4
	Fx	2156	1890	1134	2024	1739	575				
Easiness to operate	F	15	28	27	35	48	42	195	8729	44.76	5
	Fx	1155	1764	1458	1610	1776	966				
Simple registration process	F	24	20	17	26	35	63	195	7966	40.85	6
	Fx	1848	1260	918	1196	1295	1449				

Wide network coverage	F	44	54	29	20	20	28	195	10660	54.67	2
	fx	3388	3402	1566	920	740	644				
		77	63	54	46	37	23				

Source: Field survey

As per table 10, customers identified quick fund transfer as the supreme reason with highest mean value (57.47) that attracts customers to mobile banking. Wide network coverage and saving of time to go to bank are identified as the second and third most attractive issues respectively to adopt mobile banking. As banking job can be performed through mobile phone, people can enjoy banking facility by this widely used device without searching for a branch. Mobile banking attracts customers owing to anytime banking since they don't need to maintain any restricted office time to get banking service. Customers felt that ease of use of the technology for mobile banking influences them towards mobile banking.

The result is consistent with the previous study by Islam (2013). He found that mobile banking saves time to go to bank owing to anytime, anywhere banking facility.

5.7 Challenges of Mobile Banking

Table 11: Challenges of mobile banking

Challenges of mobile banking		1	2	3	4	5	6	7	Total	Total Garrett Score	Mean Score	Rank
No loan scheme	f	16	19	24	31	27	45	33	195	8820	45.23	6
	fx	1264	1254	1368	1550	1161	1530	693				
Security complexity	f	30	52	32	22	23	19	17	195	10718	54.96	2
	fx	2370	3432	1824	1100	989	646	357				
Low interest rate for savings	f	17	21	36	50	32	18	21	195	9710	49.79	4
	fx	1343	1386	2052	2500	1376	612	441				
High service charge	f	55	36	22	31	18	15	18	195	11187	57.37	1
	fx	4345	2376	1254	1550	774	510	378				
No different deposit scheme	f	29	26	51	22	18	28	21	195	10181	52.21	3
	fx	2291	1716	2907	1100	774	952	441				
Restricted amount of fund transfer	f	23	28	19	19	36	33	37	195	9145	46.90	5
	fx	1817	1848	1083	950	1548	1122	777				
Fund	f	25	13	11	20	41	37	48				

shortage at customer agents	fx	1975	858	627	1000	1763	1258	1008	195	8489	43.53	7
		79	66	57	50	43	34	21				

Source: Field survey

The challenges of mobile banking from customer's realization are shown in table 11.

Customers felt that the service charge of mobile banking is much higher than traditional banking. Thus, customers marked high service charge as the first challenge with highest mean value (57.37) to adopt mobile banking. Since financial transactions are executed from some remote areas and information is transmitted over the air, security of financial transaction was treated as one of the most complicated challenge and placed at second position. Customers do not keep deposits for a long period of time as it does not provide any deposit scheme with attractive interest rate. Thus, no different deposit scheme was placed in the third position followed by low interest rate for savings. Mobile banking still does not provide any loan taking facility. Customers also realized that restricted amount of fund transfer and shortage of fund at customer agents are some important challenges of mobile banking. The result is consistent with the results of previous studies by Hossain and Hoque (2014).

6.0 Strategies

In the light of literature review and empirical investigation, some strategies may be recommended in order to meet the challenges of mobile banking service.

► Mobile banking service providers should communicate with the customers to understand their expectation and challenges they face to receive the service. The survey should be conducted periodically to assess the improvement of service delivery quality.

► Mobile banking service providers should confirm the safety measures including intrusion detection, firewalls, confidentiality of personal identification number (PIN) and other related devices so that customers feel secured and confident on mobile banking service.

► Bangladesh Bank should issue proper guidelines and improve monitoring on mobile banking operations. BB should also guide banks for maintaining strong technological and information control and safety measures for ensuring the trust and confidence of customers on mobile banking service.

► Mobile banking service providers should train their authorized agents for rendering service effectively and accurately. Besides, minimum academic qualification should be maintained for agents.

► Mobile banking service providers may train customers or provide picture based user guide, particularly to higher aged and low educated people so that service becomes easy to use for all.

► Customers are not well informed about the benefits and range of service delivery. Mobile banking service providers should take initiatives for providing sufficient information to customers by using proper promotional tools and strategies.

► Mobile banking service providers offer low interest rate on the savings of the customers. Besides, there are no multiple saving schemes under mobile banking system. Mobile banking service providers should provide multiple deposit schemes with reasonable interest rate for improving the saving intention of customers.

► Mobile banking charges high fee which discourage customers to transact through mobile phone. Mobile banking service providers should make the service more affordable for attracting customers.

7.0 Conclusion

Banking industry is the most growing sector of economy which is transforming from traditional system to digital form. In the modern electronic banking system, mobile banking has opened a new window for both the customers and service providers. In Bangladesh, telecommunication sector has a huge market and wide use of mobile technology facilitates banks to extend banking facility across the country. Customers' perception about the usage of mobile banking was examined. Attractiveness and challenges of adopting the service are also analyzed. The result reveals that customers perceived mobile banking as trustworthy, secured, reliable, easy and convenient. The

study also observes that quick fund transfer, wide network coverage, saving of time to go to bank is the key issues that attract customers to mobile banking. Customers can easily transfer fund anytime from the nearest agent. Simple registration process and operational procedure encourage customers to use mobile banking. The study also reveals that high service charge, security complexity, no different deposit scheme are the major challenges of adopting mobile banking in Bangladesh. There is no loan and deposit scheme under mobile banking system that discourages customers to receive the service. This study concludes that the issues considered here should be addressed more carefully by the policy makers in promoting mobile banking in Bangladesh.

8.0 Limitations and Future Research

This study spawns a number of limitations and potential specific direction for future research. The size of the sample is small. The research would have been more reliable if a greater size of the sample had been used. The respondents were selected from Chittagong city. It would be more reliable and realistic if the respondents were selected from some other cities. The perception of customers was considered to analyze the problem. But the perception of other stakeholders namely bankers, mobile service operators, registered agents were not considered. Limitations also included time and cost constraints. It highly recommends future research to address all these concerns as much as possible.

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Relationships among Workplace Friendship, Job Involvement and Job Satisfaction-An Empirical Study on the Private Universities in Bangladesh

Soman Chakraborty *

Abstract

Workplace friendship and job involvement have a wide research scope in relation with job satisfaction in the areas of behavioral science especially at tertiary level of education sector in Bangladesh, yet very little has been attempted to investigate the associations of such issues in this area. Hence, the present study mainly focuses on the relationships among the workplace friendship, job involvement and job satisfaction by collecting data from 121 respondents working in different private universities in Chittagong. Respondents were asked to rate their level through printed questionnaire containing established scale to measure the variable. Convenience sampling technique were used and collected data were analyzed by using descriptive statistics, bivariate correlation, and regression analysis. Results indicated significant positive correlations among workplace friendship, job involvement and job satisfaction in Bangladesh. An important implication of the study is that the management should understand the importance of workplace friendship and job involvement in order to increase the job satisfaction. The most remarkable limitation was found in using convenience sampling that might limit the generalizability of the results. Future directions are pointed out.

Key Words: Workplace Friendship, Job Involvement, Job Satisfaction, and private universities.

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1.0. INTRODUCTION

Modern world is characterized by globalization in all spheres of life and understanding the employees behavioral aspects is also a matter of global concern. The nature and the factors responsible for co-workers relation, their job involvement and satisfaction go through changes with the changing psychology and behavioral aspects of the employees. So, to continue moving towards achieving a middle-income country status, Bangladesh needs to make major changes in organizational psychological climate such as: workplace friendship and job involvement that will ensure inclusive growth and development in line with ongoing changes in employees' work-related attitudes and behaviors. Because, over the last few decades, the Bangladesh government has made a serious effort to meet the Millennium Development Goals, particularly in the areas of quality education to make our education performance globally recognized. According to the UNESCO (2001), A renewal of higher education is essential for the whole society to be able to face new challenges of the twenty-first century and to ensure its intellectual independence (p.1). In Bangladesh private university started their journey 26 years ago. The University Grants Commission of Bangladesh notify that the role of private universities is increasingly important in case of higher education expansion. The total number of approved private universities was rose from 85 in 2015 to 95 in 2016. The private university sector of Bangladesh has offered employment to 15058 teachers in 2015 which was 833 more than the previous year (UGC, 2016). But, there is no chance to avoid the fact that with the increasing number of public and private universities, quality education is questionable. So, it is high time to take consideration about quality education and teachers' job involvement with their workplace relationship. According to Askari and Pourtorab (2008) education system has dynamic characteristics that largely depend on having smiling employees with high satisfaction and involvement with their profession. It is a need to identified the factors which are responsible for

different levels of employees dissatisfaction in relating with job involvement and friendly environment. So far, workplace friendship, job involvement and job satisfaction have been examined individually by different studies, but no study correlating workplace friendship with job involvement and job satisfaction in tertiary level of education in Bangladesh has been carried out yet. This study has emerged from this need and aims to investigate the effect of workplace friendship and involvement on the satisfaction of employees in tertiary level educational institutions. Research conducted by Nielsen, Jex, and Adams (2000), identified three primary reasons why workplace friendship is important. They are: (a) the association between friendship in the workplace and major work-related outcomes, (b) the contribution of workplace friendship to organizations' informal structures, and (c) the growing trend toward using teams and groups within organizations. In addition, Riordan and Griffeth (1995) empirically tested and found that the workplace friendship is positively and directly related to employees' job satisfaction and job involvement. Perkins (1991) found that teachers are most satisfied with their co-workers and least satisfied with monetary aspects of teaching. Management should understand the importance of job involvement because it is most important and essential component of work behavior among the workforce. (Manojlovich, Laschinger, & Heather, 2002).

According to Islam (2007), Bangladesh require graduates who can think autonomously and are enthusiastic to make every effort and experiment with new ways to free Bangladesh from vicious circle of poverty. In this connection, there have been a number of positive improvement in the behavioral aspects of organizational level which give strengthen to conduct this investigation on workplace friendship with job involvement and job satisfaction among the employees of different private universities in Chittagong and to develop a conceptual framework that explores the relationships among this three factors.

Hence the objectives of this study are:

a) to examine the relationship between workplace friendship and job involvement

b) to identify the relationship between job involvement and job satisfaction, and

c) to investigate the relationship between workplace friendship and job satisfaction.

Though the research topic is not a new one, it broaches broader issues not encompassed by previous research in Bangladesh. In other words, there is rareness of comprehension research regarding workplace friendship, job involvement and job satisfaction in the tertiary level of education. For instance, Ali & Akhter (2009) conducted a study which only measured the job satisfaction of faculty members in private universities in Bangladesh. The present research is designed to find how workplace friendship raises the level of job involvement along with employees satisfaction at the university level. So, this research can play a substantial role both theoretically and practically along hierarchy of an organization. Furthermore, it may also contribute to improving some salient aspects in the field of employee behavioral output.

2.0. LITERATURE REVIEW

2.1 Workplace Friendship

Workplace friendship has been drawing the attention of and been broadly discussed by scholars (Barley & Kunda, 2001; Kram & Isabella, 1985; Mao, 2006; Miller, Rutherford, & Kolodinsky, 2008; Nadler, 1979; Payne & Hauty,1955) Workplace friendship is a dynamic, sensible and complex relationship in a formal structure. In different literatures, there are different definitions for this friendship. (Berman, West, Maurice, & Richter, 2002;

Dobel, 1990, 1999; Fehr, 1999, 2004; Lin, 2010). The definitions of workplace friendship, are distinct from general types of friendship because workplace friendship is focused on friendship which created in the formalized workplace (Song, 2005). According to Fehr (1996), friendship is a voluntary, interpersonal relationship typically providing intimacy and assistance. Moreover, Berman et al. (2002) identify "workplace friendship as nonexclusive voluntary workplace relations that involve trust, commitment, liking and shared values" (p. 218). Sias and Cahill (1998) believe that an organization needs to be more than merely a "container" or context for relationships, but also to impact on the way friendships develop. Hamilton (2007) states that friendship exists in the workplace when employees might feel comfortable with their workplace friends and improve the feelings about job. In addition, Winstead, Derlega, Montgomery, & Pilkington (1995) assent that satisfied employees showed have higher levels of workplace friendship, which is significantly important to increase the productivity of both the individual and the organization.

2.2 Job involvement

In simple term, involvement constitutes different types of involvement from different aspects of our material life. For instance, involvement with work, family or society. Job involvement is regarded as the degree to which one psychologically identifies with one's job, a cognitive or belief state of psychological identification with a particular job (Kanungo, 1982a). Job involvement is a positive level of intense psychological identification with one's job and it also leads to motivation towards job, personal growth and job satisfaction (Hackman & Lawler, 1971; Kahn, 1990; Lawler & Hall, 1970; Schultz & Schultz, 1994). Paullay, Alliger, and Stone (1994) defined the job involvement as the degree to which one is cognitively preoccupied with, engaged in, and concerned with one's present job. Another research by Li and Long (1999) state that job involvement as range to which individual employee

show his emotional or mental identification with job. Job involvement is significant in people's working life, which implies being optimistically immersed in elementary aspects of the job (Kanungo, 1982b). Several research (Allport, 1943; Bass, 1965), job involvement transmit the degree to which an individual is actively participating in his/her job. Moreover, highly involved employee performing effectively on the job are important for their self -esteem (Lodahl & Kejner, 1965). Job involvement has positive organizational implications, influencing the level of employees' supports towards overall organizational goals, and thus progressing productivity and efficiency (Brown, 1996).

2.3 Job Satisfaction

Behavioral scientist Abraham Maslow, identified that satisfaction is the relative state or level of human being. He added that employees' satisfaction develops from lower order to higher needs It has been expressed as a general behavioral outcome of individuals which has been perceived as an attitude by behavioral scientists. Various researchers have worked on 'job satisfaction' in different ways at different times. In a study, (Mamun, Hossain, & Islam, 2005) have been carried out on job satisfaction of private universities in Bangladesh. Regarding this Government and NGO employees found that the levels of satisfaction of the government employees are higher than NGO employees and male employees are more satisfied with their job compared to female employees (Islam 2011). According to Wiener (1982), job satisfaction is an attitude towards work-related conditions, facets, or aspects of the job. Locke (1976) defines job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience. According to Robbins (1996) job satisfaction is a positive feeling about a job and an employee's general attitude toward his or her job. In other research, French (1982) and Tziner & Vardi (1984) define work satisfaction as an effective response or reaction to a

wide range of conditions or aspects of one's work such as pay, supervision, working conditions, and/or the work itself.

3.0. DEVELOPMENT OF RESEARCH HYPOTHESES

3.1. Workplace friendship and Job involvement

In different studies it is revealed that workplace relationship is a powerful tool through which subordinates share their views, trust and likeliness with each other. Specifically, supportive work groups have been reported to help clarify job roles, decrease role ambiguity, provide social and moral support, and provide opportunities for workplace friendship (Abbott et al., 2006; Freund, 2005). In order to achieve organizational goals, it is important to create a friendly atmosphere that can motivate employees to pragmatist their efforts in a useful and meaningful way. Workplace friendship helps employees to get sufficient scope to expose their skills and abilities which again boost up through close involvement with job.

Employees in a profession that has good workplace friendship may tend to be more involved with the job. According to the Rath (2006) people who have best friends at work and who are engaged with their clienteles, have the tendency to get more done within a minimum time, have fun in their work, and easily share ideas. All this may become possible in the workplace only due to job involvement of the employees. Workplace friendship significantly increases support and resources that help individuals to accomplish their jobs, reduce work stress, and provide increased communication, cooperation, and energy (Fine,1986). So, the research review above indicates the relationship between workplace friendship and job involvement. In this connection, it may be assumed that if employees have friendly relationship in the workplace, it enhances their involvement with the job. Since, friendship at workplace can increase the attachment of employees with work and machine. So, based on the discussion the first hypothesis will be develop below:

Hypothesis 1: There is a positive relationship with workplace friendship and job involvement of employees.

3.2 Workplace Friendship and Job Satisfaction

Followed by social-cohesion theory, social need is a psychological need of human beings. Everyone wants love, belongingness, trust and affection. Several studies have found psychological climate to be a significant determinant of measuring individual level of outcomes such as job satisfaction, in-role performance, and extra-role performance (e.g. Brown & Leigh, 1996; Moorman, 1991; Parker, Baltes, Young, Huff, Altmann, Lacost, & Robert, 2003). According to the Herzberg theory, employees want support, good relation with peers and supervisors, which lead them to become satisfied in the workplace. Workplace friends provide each other with instrumental and emotional support (Kram & Isabella, 1985). Workplace friendship increases organizational outcomes such as increased job satisfaction (Berman et al., 2002; Hwang, Seo, & Kim, & Kang, 2012; Song, 2007). In a study, Dotan (2007) addressed that when employees have trustful friends at working place, they can get help or advice from their friend co-workers and, therefore, gain feelings of security, comfort, and satisfaction with their job. Previous research commonly exposed that workplace friendship can influence employees' work-related attitudes, intentions, and behaviors such as job satisfaction, job performance, (Riordan & Griffeth, 1995; Ross, 1997). Furthermore, Markiewicz et al. (2000) identified that close friendships values were linked with both the career success and job satisfaction of employees. Hence, based on the above discussion the second hypothesis has been developed as follows:

Hypothesis 2: There is a positive relationship with workplace friendship and job satisfaction of employees.

3.2. Job involvement and Job satisfaction

Fostering job involvement is an important organizational objective because many researchers consider it to be a primary determinant of organizational effectiveness (Pfeffer, 1994). The relationship between job satisfaction and job involvement has been shown in numerous studies (e.g. Dastorani & Pooryousef, 2012; Hariri & Botlani, 2010; Hills, Joyce, & Humphreys, 2012; Kiani, & Khodabakhsh, 2013; Rezapour, 2011; Rose, 2003). According to Hariri & Botlani (2010), individuals who have high job involvement, experience high satisfaction, especially in the field of work content, and they are pleased with their jobs. Job involvement has a direct correlation with job satisfaction and also influences the work performance (Robinowitz & Hall, 1977). Moreover, different studies (Batlis, 1980; Brown, Cron, & Leigh, 1993; Efraty & Wolfe, 1998; Feldman & Turnley,1995; Mishra, 1997; Patel, 1995; Reitz & Jewel, 1979; Rosin & Korabik, 1995; Siegall & McDonald, 1995; Smart, 1998; Smith & Tisak, 1993) showed significant relationships between job involvement and job satisfaction. So, based on the previous discussion, the following hypotheses may be derived:

Hypothesis 3: There is a positive relationship with job involvement and job satisfaction of employees.

A hypothetical model can be developed to exhibit the relationships among workplace friendship, job involvement, and job satisfaction as follows:

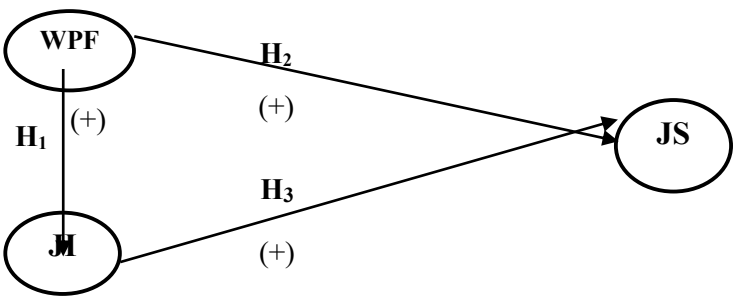

Figure 1: Hypothetical Model

Note: WPF=Workplace Friendship; JI = Job Involvement; JS= Job Satisfaction

4.0. RESEARCH METHODS

4.1. Participants

Employees working in different private universities in Chittagong are taken as population for this study. Data for this study were collected from 121 respondents who worked in different private universities in Chittagong, second largest city of Bangladesh. Respondents were requested to rate their perceptions about their workplace friendship, job involvement and job satisfaction. The respondents were also asked to provide their demographic information (i.e. age, gender, tenure, educational background, and organizational level). All respondents were given complete autonomy in filling up the questionnaires. The respondents were further categorized in view of their positions in their respective organizational structures, specifically, higher-level, mid-level, and lower-level.

Table 1: Demographic information of the respondents

Particulars	Mean (in years)	SD	N	%
Respondents' age	33.9	5.2	----	----
Respondents' experience	6.3	3.8	----	----
Respondents' position level:				
Top	----	----	5	4.2
Middle	----	----	107	88.4
Lower	----	----	9	7.4
Total			121	100.0
Respondents' educational qualifications				
Bachelor	----	----	7	5.8
Master	----	----	107	88.4
Others	----	----	7	5.8
Total			121	100.0

Source: Authors' own survey, 2017

Respondents differed in age from 25 to 48 years, with a mean of 33.9 (SD = 5.2) years. Among 121 respondents, 67 (55.4%) of them were male while 54 (44.6%) were female. Average job experience of the respondents was 6.3 (SD = 3.8) years. There were 5 (4.1%), 107 (88.4%) and 9 (7.4%) representations by the top-level, mid-level and low level participants respectively. The respondents were well educated, as 7 (5.8%) respondents had completed Bachelor degrees, 107 (88.4%) of them had Master degree while 7 (5.8%) respondents had acquired other degrees.

4.2. Data Collection Procedure and Analysis of Data

To collect data for this study, printed questionnaires with a cover letter were delivered to 150 employees (including faculty members and officers) working in different universities in Chittagong. Participants were assured that all the information provided by them would be kept confidential and used only for academic purpose. Hence, to assure the confidentiality, their names and the identity of their organizations and departments have not been sought for. Finally, 121 (80.6%) usable responses were received. Descriptive statistics, correlations, and regressions analyses were used to justify the relationships of the variables. The SPSS 18 was used to analyze the data. Because of some limitations, it was not possible to collect an equal number of responses from each of the organizations approached for this study.

4.3. Reliability of Scales and Validity of Data

Reliability shows the individual differences concerning the amount of agreement or disagreement of the concepts or variables studies. Cronbach's alpha is the most widely used method to measure the reliability of the scale (Malhotra, 2004). It may be mentioned that Cronbach's alpha value ranges from 0 to 1, but satisfactory value is required to be more than .60 for the scale to be reliable (Malhotra, 2004; Cronbach, 1951). Cronbach's alpha of the workplace friendship, job involvement, and job satisfaction scales for the current study were respectively 0.88, 0.89, and 0.89 Hence, all these survey instruments were highly reliable for data collection. On the contrary, Validity was not essential because established survey instruments were used in this study.

4.4. Survey Instruments

All the variables were measured on a 5-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree). The study adopts the following measures to collect data from the participants.

4.4.1 Workplace Friendship:

This study measured workplace friendship using the 12-item scale of Nielsen et al., (2000) on a 5-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. The gender, age, and educational background were also analyzed as control variables because different studies have found those variables affecting interpersonal relationships of the employees (Cahill, 1988; Mackenzie et al., 2000; Mao, 2006). Furthermore, Mao, Chen, and Hsieh (2009) successfully used this scale when measuring workplace friendship with these 6 items, indicating that the scale is valid for measuring the variable in this study.

4.4.2. Job Involvement:

Job involvement was measured with the ten-item Job Involvement Scale developed by Kanungo (1982a). Sample items are: "The most important things that happen to me involve my present job", and "Most of my personal life goals are job-oriented". In the present study internal reliability alpha coefficient for the job involvement scale was 0.89.

4.4.3 Job Satisfaction:

To measure the job satisfaction of the respondents, an 11-item scale developed by Ather and Nimalathasan (2006) was used. Sample items were "I like the content of the work I do", and "My achievement is recognized by my superior" etc. The reliability score of the job satisfaction scale for the current study was 0.89.

5.0. RESULTS

The mean, standard deviation, reliabilities, and Correlations among the workplace friendship, job involvement, and job satisfaction are presented in Table 2

Table 2: Means, Standard Deviations, Reliabilities, and Correlations between Variables

Variables/ Components	**M**	**SD**	**α**	**Correlations**		
				1	**2**	**3**
1. WPF	3.9	.63	.88	1		
2. JI	4.1	.60	.89	.25**	1	
3. JS	3.3	.76	.89	.49**	.40**	1

Source: Authors' own survey, 2017

Correlation is significant at the 0.01 level; N = 121; WPF=Workplace Friendship; JI = Job Involvement; JS= Job Satisfaction

In Table 2 shows that there were significant correlations among workplace friendship, job involvement and job satisfaction. Workplace friendship was found to be related considerably with job involvement ($r = 0.25$, $p < 0.01$) while job satisfaction was found positively correlated ($r = 0.49$, $p < 0.01$) with workplace friendship. Moreover, a significant positive correlation ($r = 0.40$, $p < 0.01$) was found between job involvement and job satisfaction. Thus, it indicates that all three hypotheses were supported by the result.

Table 3a: Summary of Regression Analysis of Socio-Demographic Characteristics with Workplace friendship, Job involvement and Job satisfaction.

Covariates	Co-efficients (β)			S.E. (β)			Value of t-statistic		
	WPF	JI	JS	WPF	JI	JS	WPF	JI	JS
Age	-.01	.01	.01	.02	.02	.02	-.44	.72	.49
Tenure	-.02	.01	-.01	.03	.03	.03	-.56	.45	-.15
Education	.09	-.11	.33	.18	.17	.21	.48	-.65	1.56
Gender	.01	-.04	-.06	.12	.12	.14	.07	-.38	-.40
Position	-.06	.11	-.32	.18	.17	.21	-.32	.68	-1.56

Source: Authors' own survey, 2017

** Significant at the 0.01 level; * Significant at 0.05 level; N = 121;
WPF=Workplace Friendship; JI = Job Involvement; JS= Job Satisfaction

Table 3b: Summary of Regression Analysis of Socio-Demographic Characteristics with Workplace Friendship, Job Involvement, and Job Satisfaction

Covariates	Value of R^2			Value of F –statistic		
	WPF	JI	JS	WPF	JI	JS
Age	.03	.04	.06	.59	.93	1.41
Tenure						
Education						
Position						

Source: Authors' own survey, 2017

** Significant at the 0.01 level; * Significant at 0.05 level; N = 121;
WPF=Workplace Friendship; JI = Job Involvement; JS= Job Satisfaction

A review of Table 3b demonstrates that only 3%, 4% and 6% of the variances in workplace friendship, job involvement, and job satisfaction were explained by socio-demographic characteristics (e.g. age, tenure, education, and position) respectively. Table 3b also indicates that a larger portion of variances in workplace friendship, job involvement, and job satisfaction were unexplained. The indication of unexplained variances is that there were other potential variables that might account for variations in workplace friendship, job involvement, and job satisfaction.

Table 4: Summary of Regression Analysis regarding Workplace Friendship, Job Involvement, and Job Satisfaction

Predictors	Predictand (JS)				
	Co-efficients (β)	S.E. (β)	Value of t-statistic	Value of R^2	Value of F –statistic
WPF	.51	.09	5.41^{**}	.33	28.58^{**}
JI	.37	.10	3.75^{**}		

Source: Authors' own survey, 2017

** Significant at the 0.01 level; * Significant at 0.05 level; N = 121;
WPF=Workplace Friendship; JI = Job Involvement; JS= Job Satisfaction

An analysis of Table 4 indicates that 33% of the variances in job satisfaction were explained by workplace friendship and job involvement. All the t-values and F-values were also found significant. It suggests that workplace friendship and job involvement are responsible for improving job satisfaction of employees' at tertiary level of education.

6.0. DISCUSSIONS

The present research examines the relationships among the workplace friendship, job involvement, and job satisfaction as perceived by the private university employees.

The *first* purpose of the research was to examine the relationship between workplace friendship and job involvement. Hypothesis 1 states that on the basis of the subjects' perception, workplace friendship was positively related to job involvement. The result of the current study supports this statement. The result of the present paper also provides a support for the assumption that workplace friendship and job involvement may be an important stimulus for improving higher level of job satisfaction of private university employees.

The *second* purpose of the study was to look into the relationship between workplace friendship and job satisfaction. After analyzing Hypothesis 2, the relationship between workplace friendship and job satisfaction of university employees was found to be positive, as perceived by the respondents. This positive relationship is consistent with the assumptions of previous studies (Berman et al., 2002; Hwang et al., 2012; Nielsen et al., 2000; Song, 2007). This tentative understanding is made on the basis of the theoretical assumption that workplace friendship may be an indication of high level of organizational outcomes such as: job satisfaction.

The *third* purpose of this study was to investigate the relationship between job involvement and job satisfaction. Hypothesis 3 states that there was a positive relationship between job involvement and job satisfaction. Thus, the employees who have higher job involvement attributes tend to demonstrate higher job satisfaction towards their job. This result of the current study also offers a support for the theoretical line of reasoning that job involvement may be an important aspect in improving employees' job satisfaction in private universities.

7. Implications for Management

Considering the significant relationship of workplace friendship and job satisfaction with job involvement of employees in private universities, researchers and policy makers and academic administrative should take necessary measures to increase job satisfaction and involvement among the employees through available friendship facilities. In public and private universities, employees are awfully preoccupied with their workload. There is a few chance to create friendly environment among the employees in the university arena. So, it has become a major issue to create more opportunity for developing friendship by the university authorities. The result of the present study can greatly be implemented in a fair approach regarding employees' workplace relation, involvement and satisfaction, which can pave the way of better education in the higher level. Government and non-government organizations can use workplace friendship as a tool of grievance handling which may germinate the satisfaction and involvement instead of employee conflict in the organization. In addition, the findings of the study may help us to increase functional involvement among the groups as well as individual employees.

8. Limitations

Despite the positive implications for management, the study incurs from some limitations. The small sample size (N=121) posed the major limitation of this study. Beside this, sample only collected from Chittagong makes it barely adequate to represent the overall scenario of the research issue in Bangladesh. Moreover, in this study, presence of common method variance (CMV) in the measures may have caused inflated relationships between the independent and dependent variables. Larger and more representative sample is needed for a wider probe into the relationships among the three variables. A random

sampling procedure could be the best alternative to assure generalizability of the results.

9. Future directions

In this realistic era, employees spend more time at work than family to maintain the standard of living. This study represents a primary foray into workplace friendships, job involvement and link with job satisfaction, which serves as a milestone for future studies in this area for the policy- makers and the owners of means of production. A further research can be conducted by including public universities in Bangladesh. In addition, a comparative analysis may be drawn between private and public universities regarding workplace friendship, job involvement and satisfaction of employees in order to produce more interesting results. In addition, the relationship among workplace friendship, job involvement and job satisfaction mediated by other factors, such as organizational commitment, perceived organizational support etc. could produce interesting findings. Furthermore, researches examining the relationships of workplace friendship with other dependent variables, such as, creative performance or organizational citizenship behaviour is recommended here.

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Calculation of Ionization of Metastable-2P State Hydrogen Atoms by Electron Impact of Single Differential Cross Sections in Coplanar Asymmetric Geometry

Amanul Hoque *

Abstract

The single differential cross sections (SDCS) are calculated in second Born approximation for electron impact ionization process of metastable 2P-state hydrogen atoms by electrons in the intermediate energies 100eV, 150eV, 200eV and 250eV. Ionization of hydrogen atoms by electrons in the SDCS from the ground state experimental and theoretical results are presented here for comparison with the results of present study. The current SDCS results show a qualitative good agreement in the energy range of 5eV to 50eV. There is no available experimental study for ionization of metastable 2P-state hydrogen atoms by electrons to be compared with the present results. It can be expected that the current outcomes will provide an extensive opportunity for further study on such ionization problems.

Key Words: Cross-section, SDCS, Ionization, Electrons.

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1. Introduction

The study of atomic ionization processby charged particles such as electrons or positrons creates agreat interest in many branches ofnuclear physics. Accurate determination for various types of cross-sectionresults such as single, double and triple differential with varied kinematics conditions[1-12] offers very fascinating problems to Applied Mathematicsas well as Mathematical Physics. Over the last half century, the available experimental results have added new feature in this field of research such as Astrophysics, Plasma Physics and Fusion research technology. This sort of research provides the knowledge that investigates the ionization from metastable 2S-state[13,14,15] hydrogen atoms and ionization of medium heavy atoms[11,16,17,18]. Also the linear superposition of 2S and 2P-state[19-23]of hydrogen atoms by charged particles is equally interesting. The time is not so far when experimental results in metastable 2P-state will be available in this field. Lewis integral[24] has been used in the calculations involve in present study.

The double differential cross-sections (DDCS) contain information about the angular and energy distribution of secondary electrons in atomic ionization collisions. Single differential cross sections (SDCS) describe the energy distribution of the secondary electrons. The DDCS and SDCS data of practical interest in studies of astrophysical and upper atmospheric phenomena, electron deprivation spectra and in the interpretation of secondary effects which are produced by slow secondary electrons and in studies of many other sensations of Das and Seal[25].

Experimental evaluations of DDCS in angle and energy have been obtained by

Shyn[26-31] and other groups[32-34] mainly for helium atom, because of the simple reason that it is the modest atom for which experimental complications can be minimized. On the theoretical side, the best available theoretical calculation of DDCS is grounded on the plane-wave Born approximations[35-36].

Bethe[8] introduced the ionization process first by fast particles using quantum mechanics. The information was not available for atomic hydrogen before Shyn[26], though it is the simplest and the most convenient system for theoretical analysis, a set of data is available by the works of Shyn. Shyn's estimations give accurate values of

DDCS for atomic hydrogen in the incident energy range 25eV-250eV and over the angular range 12^0-156^{026}. But in this work the incident energies 100eV, 150eV, 200eV and 250eV are considered over the angular range is 0^0-180^0 in metastable 2P-state for the hydrogen atom.

A multiple scattering theory[9,16] has been followed in the calculation of the double differential cross sections (DDCS) in the metastable 2P-state hydrogen atom ionization by 150eV and 250eV electron energies. It is noted that the multiple scattering wave function[9,10,17] has been designed for two electrons moving in a coulomb field, which include higher order and correlation effects. Using this wave function, very interesting results for triple differential cross sections (TDCS) with various kinematic conditions have been obtained both in the ground state and metastable 2S state at non-relativistic energies [9,10,17] and many other calculations for medium-heavy atoms ionization by electrons at relativistic energies[11,15,17,18]. The results obtained by using BBK theory[37] in ground state are qualitatively better. But in quantitative the results of Das and Seal[9]are better than that of the BBK theory[37]. The theory of Das and seal[9] is modest, so it can be applied in the calculation of DDCS and SDCS for ionization of hydrogen atoms by electrons in metastable 2P state at intermediate energies.

The DDCS results are obtained after integration of TDCS results[23] over the scattered electron directions and they are compared with the experimental results of Shyn[26] as well as the theoretical results of Das and Seal[25]. An additional integration gives the corresponding SDCS results and these SDCS results compared with the measured results of Shyn[26] and those of Das and Seal[25] and Konovolov&McCarthy[38]. The present results will add the significant contribution to the future theoretical findings and experimental set up for the study of energy range of ejected electrons from metastable hydrogen atoms by electrons.

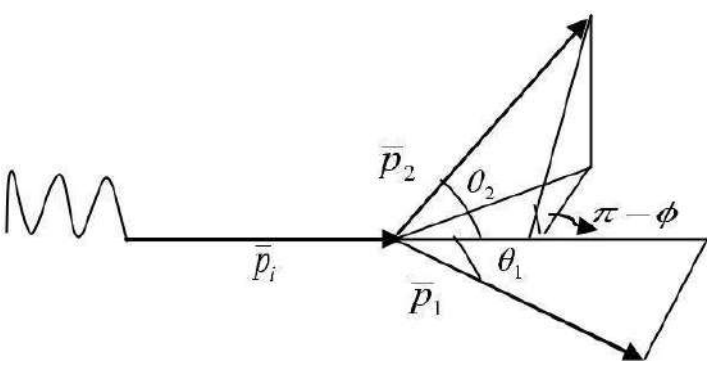
2. Theory

The single ionization processes expressed the most comprehensive information by the equation of following type $e^- + H(2P) \rightarrow H^+ + 2e^-$ (1)

Where the symbol 2P denotes the metastable state of the hydrogen atoms.

The TDCS is a measurement of the probability that in an (e, 2e) reaction an incident electron of momentum $\vec{p}_i$ and energy E_i. Such TDCS calculation produces on collision with the target two electrons having energies E_1 and E_2 and momenta $\vec{p}_1$ and $\vec{p}_2$ emitted respectively into the solid angles $d\Omega_1$ and $d\Omega_2$ centered about the directions (θ_1, ϕ_1) and (θ_2, ϕ_2).By integrating the TDCS over $d\Omega_1$, $d\Omega_2$ or dE_2 one can form various double and single differential cross sections. In this paper, Single Differential Cross Sections (SDCS) are subject of matter. It is useful when studying (e, 2e) coincidence experiments to distinguish among several kinematic arrangements, since these have important suggestions for the theoretical analysis of the collision. A first distinction can be made between coplanar geometries such that the momenta $\vec{p}_i$, $\vec{p}_1$ and $\vec{p}_2$ are in the same plane and non-coplanar geometries such that the momentum $\vec{p}_2$ is out of the ($\vec{p}_i$, $\vec{p}_1$) reference plane. There is another useful distinction between asymmetric and symmetric geometries. In asymmetric geometries, a fast electron of energy E_i is incident on the target atom, and a speedy (''scattered'') electron is detected in coincidence with a slow (''ejected'') electron. This kind of experiment was first performed by Ehrhardtet al.[3]. On the other hand, symmetric geometries are defined by the requirement that $\theta_1 \cong \theta_2$ and $E_1 \cong E_2$.The first

(e, 2e) symmetric coincidence experiments of Amaldi et al. [39] have been followed by a number of experiments of this type.



The kinematics of an (e, 2e) reaction. The incident electron momentum is $\vec{p}_i$ and the momenta of the outgoing electrons are $\vec{p}_1, \vec{p}_2$ respectively. Also the angles θ_1 and θ_2 are shown with respect to the incident direction and the angle $\pi - \phi$ is measuring the direction in a coplanar situation.

T-matrix element

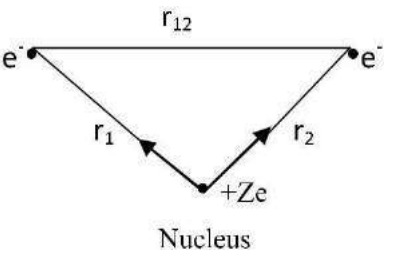
The direct amplitude of the T-matrix element for ionization of hydrogen atoms by electrons is considered in present calculations which can be written as The T-matrix element

$$T_{fi} = \left\langle \Psi_f^{(-)}(\bar{r}_1, \bar{r}_2) \middle| V_i(\bar{r}_1, \bar{r}_2) \middle| \Phi_i(\bar{r}_1, \bar{r}_2) \right\rangle \qquad (2)$$

where the perturbation potential $V_i(\bar{r}_1, \bar{r}_2)$ is given by

$$V_i(\bar{r}_1, \bar{r}_2) = \frac{1}{r_{12}} - \frac{Z}{r_2}$$

For hydrogen atoms nuclear charge is Z=1, r_1 and r_2 are the distances of the two electrons from the nucleus and r_{12} is the distance between the two electrons.



Interaction between two electrons and the nucleus.

The initial channel unperturbed wave function is given by

$$\Phi_i(\bar{r}_1,\bar{r}_2)=\frac{e^{i\bar{p}_i.\bar{r}_2}}{(2\pi)^{3/2}}\phi_{2P}(\bar{r}_1),\quad \text{where } \phi_{2P}(\bar{r}_1)=\frac{r_1}{4\sqrt{2\pi}}\cos\theta\, e^{-r_1/2}.$$

$$\text{So } \Phi_i(\bar{r}_1,\bar{r}_2)=\frac{r_1 e^{i.\bar{p}_i.\bar{r}_2}}{16\pi^2}\cos\theta\, e^{-r_1/2} \tag{3}$$

Here $\lambda_1=\frac{1}{2}$ and $\phi_{2P}(\bar{r}_1)$ is the hydrogenic 2P state wave function and $\Psi_f^{(-)}(\bar{r}_1,\bar{r}_2)$ is the final three-particle scattering state wave function[9] and co-ordinates of the two electrons are $\bar{r}_1$ and $\bar{r}_2$ respectively.

Here the approximate wave function $\Psi_f^{(-)}$ is given by

$$\Psi_f^{(-)}(\bar{r}_1,\bar{r}_2)=N(\bar{p}_1,\bar{p}_2)\left[\phi_{\bar{p}_1}^{(-)}(\bar{r}_1)e^{i\bar{p}_2.\bar{r}_2}+\phi_{\bar{p}_2}^{(-)}(\bar{r}_2)e^{i\bar{p}_1.\bar{r}_1}+\phi_{\bar{p}}^{(-)}(\bar{r})e^{i\bar{P}.\bar{R}}-2e^{i\bar{p}_1.\bar{r}_1+i\bar{p}_2.\bar{r}_2}\right]$$
$$/(2\pi)^3 \tag{4}$$

where

$N(\bar{p}_1,\bar{p}_2)$ is normalization constant and $\bar{r}=\frac{\bar{r}_2-\bar{r}_1}{2}$, $\bar{R}=\frac{\bar{r}_1+\bar{r}_2}{2}$, $\bar{p}=(\bar{p}_2-\bar{p}_1)$, $\bar{P}=\bar{p}_2+\bar{p}_1$ and $\phi_q^{(-)}(\bar{r})$ is Coulomb wave function.

Now applying equations (3) and (4) in equation (2), we get

$$T_{fi}=T_B+T_B'+T_i-2T_{PB} \tag{5}$$

where

$$T_{\mathbf{B}} = \left\langle \phi_{p_1}^{(-)}(\bar{r}_1)\, e^{i\bar{p}_2.\bar{r}_2} \middle| V_i \middle| \Phi_i(\bar{r}_1, \bar{r}_2) \right\rangle \tag{6}$$

$$T_B' = \left\langle \phi_{p_2}^{(-)}(\bar{r}_2)\, e^{i\bar{p}_1.\bar{r}_1} \middle| V_i \middle| \Phi_i(\bar{r}_1, \bar{r}_2) \right\rangle \tag{7}$$

$$T_i = \left\langle \phi_p^{(-)}(\bar{r}\,)\, e^{i\bar{P}.\bar{R}} \middle| V_i \middle| \Phi_i(\bar{r}_1, \bar{r}_2) \right\rangle \tag{8}$$

$$T_{PB} = \left\langle e^{i\bar{p}_1.\bar{r}_1 + i\bar{p}_2.\bar{r}_2} \middle| V_i \middle| \Phi_i(\bar{r}_1, \bar{r}_2) \right\rangle \tag{9}$$

The first born T_B is calculated in our earlier paper[40].

Now

$$T_B' = \frac{1}{16\pi^2} \int \phi_{p_1}^{(-)*}(\bar{r}_1) e^{-i\bar{p}_1.\bar{r}_1} \left(\frac{1}{r_{12}} - \frac{1}{r_2} \right) e^{i\bar{p}_i.\bar{r}_2} r_1 \cos\theta\ e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$T_B' = \frac{1}{16\pi^2} \int \phi_{p_1}^{(-)*}(\bar{r}_1) e^{-i\bar{p}_1.\bar{r}_1} \frac{1}{r_{12}} e^{i\bar{p}_i.\bar{r}_2} r_1 \cos\theta e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$- \frac{1}{16\pi^2} \int \phi_{p_1}^{(-)*}(\bar{r}_1) e^{-i\bar{p}_1.r_1} \frac{1}{r_2} e^{i\bar{p}_i.\bar{r}_2} r_1 \cos\theta\, e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$T_B' = T_{B1}' + T_{B2}'$$

(10)

Again

$$T_i = \frac{1}{16\pi^2} \int \phi_{p_1}^{(-)*}(\bar{r}_1) e^{-i.\bar{P}.\bar{R}} \left(\frac{1}{r_{12}} - \frac{1}{r_2} \right) e^{i\bar{p}_i.\bar{r}_2} r_1 \cos\theta\ e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$T_i = \frac{1}{16\pi^2} \int \phi_{p_1}^{(-)*}(\bar{r}_1) e^{-i.\bar{P}.\bar{R}} \frac{1}{r_{12}} e^{i\bar{p}_i.\bar{r}_2} r_1 \cos\theta e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$- \frac{1}{16\pi^2} \int \phi_{p_1}^{(-)*}(\bar{r}_1) e^{-i.\bar{P}.\bar{R}} \frac{1}{r_2} e^{i\bar{p}_i.\bar{r}_2} r_1 \cos\theta\, e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$T_i = T_{i1} + T_{i2} \tag{11}$$

Also

$$T_{PB} = \frac{1}{16\pi^2}\int e^{-i\bar{p}_1.\bar{r}_1}.e^{-i.\bar{p}_2.\bar{r}_2}\left(\frac{1}{r_{12}} - \frac{1}{r_2}\right)e^{i\bar{p}_i.\bar{r}_2} r_1 \cos\theta \; e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$T_{PB} = \frac{1}{16\pi^2}\int e^{-i.\bar{p}_1.\bar{r}_1}.e^{-i.\bar{p}_2.\bar{r}_2}\frac{r_1}{r_{12}} e^{i\bar{p}_i.\bar{r}_2} \cos\theta\, e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$-\frac{1}{16\pi^2}\int e^{-i.\bar{p}_1.r_1} e^{-i.\bar{p}_2.\bar{r}_2}\frac{r_1}{r_2} e^{i\bar{p}_i.\bar{r}_2} \cos\theta\, e^{-\lambda_1 r_1} d^3 r_1 d^3 r_2$$

$$T_{PB} = T_{PB1} + T_{PB2} \tag{12}$$

Using the Lewis integral[24], we evaluated the above expressions T_B', T_i and T_{PB} numerically. Also using the computer programming language MATLAB, finally the triple differential cross-sections for T-Matrix element is obtained as

$$\frac{d^3\sigma}{d\Omega_1 d\Omega_2 dE_1} = \frac{p_1 p_2}{p_i}\left|T_{fi}\right|^2 \tag{13}$$

After integration of TDCS results (13) over Ω_2 using MATLAB, we can obtain the DDCS results as following equation

$$\frac{d^2\sigma}{dE_1 d\Omega_1} = \int \frac{d^3\sigma}{d\Omega_1 d\Omega_2 dE_1} d\Omega_2 \tag{14}$$

Further integration of DDCS results (14) over $\Omega_1$using also MATLAB, SDCS can be obtained by equation like as

$$\frac{d\sigma}{dE_1} = \int \frac{d^2\sigma}{dE_1 d\Omega_1} d\Omega_1 \qquad (15)$$

3. Results and Discussion

In this paper, SDCS results have been calculated for ionization of hydrogen atoms by electrons of incident energies E_i=100eV, 150eV, 200eV, and 250eV for different values of energy E_1 of the ejected electron. The ejected energy E_1 varies from 0eV to 50eV,

Considered as a horizontal axis where SDCS as a vertical axis in the figures. The objective of the present study is to compare SDCS in between hydrogenic ground state results and metastable 2P-state results. Ionization of hydrogen atoms by electrons from the ground state experimental results of Shyn[26], the computational result of Das and Seal[25] and Konovalov and McCarthy[38] are presented here for comparison. The overall agreement of all these results is satisfactory. However, our results differ a bit in trend compared to the results mentioned and somewhere, our results appear to be a bit better in direction compared to the same results.

Particularly in the case of E_i=250eV incident energy in the **Fig1**, the present result appeared to be less steeply at lower ejected energies than Shyn[26] and Das & Seal[25], and after increasing ejection energies up to 50eV similar trend have been observed. Also the present result conforms with Konovalov and McCarthy[38] in shape and pattern, which shows good agreement.

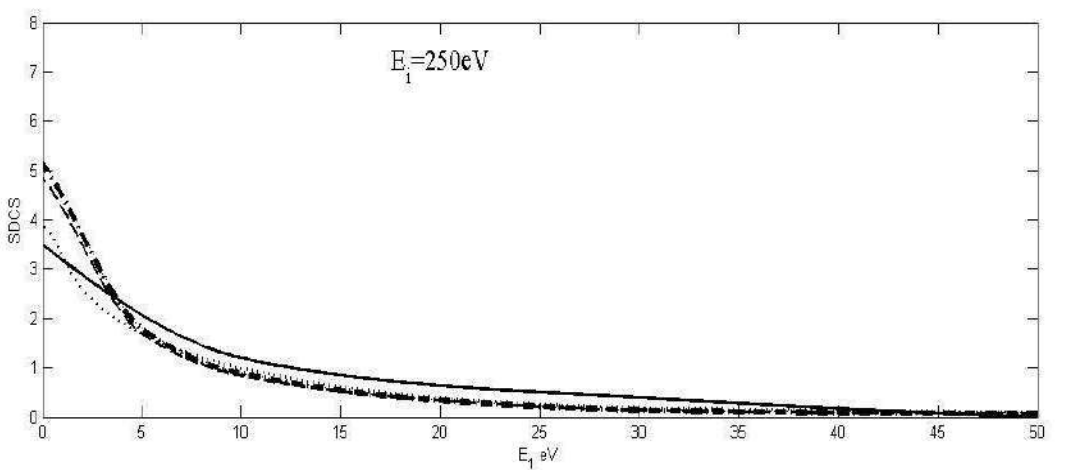


Fig1: SDCS for ionization of hydrogen atoms by electrons of incident energy E_i = 250eV for different values of energy E_1 of the ejected electrons. Theory: short-broken ( ) curve presents[25], dashed (- - -) curve presents[26], dotted (····) curve presents[38]and continuous curve (—) presents the present calculation.

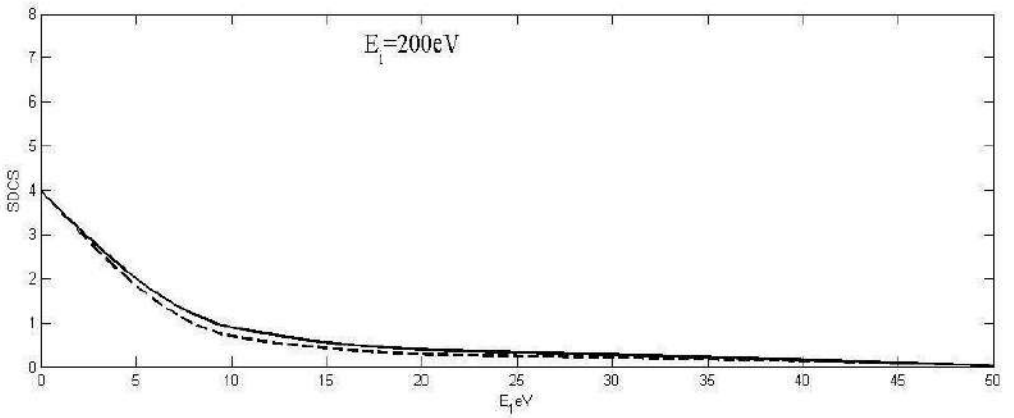


Fig 2: SDCS for ionization of hydrogen atoms by electrons of incident energies E_i= 200eV for different values of energy E_1 of the ejected electrons. Theory: Dashed curve (- - -) presents[26] and continuous curve (—) presents the present calculation.

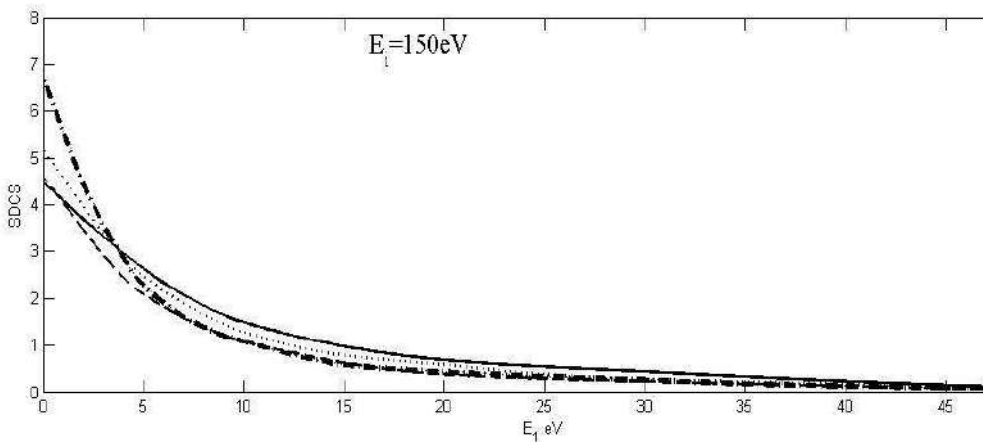


Fig**3**: SDCS for ionization of hydrogen atoms by electrons of incident energy E_i = 150eV for different values of energy E_1 of the ejected electrons. Theory: short-broken ( ) curve presents[25], dashed (---) curve presents[26], dotted (····) curve presents[38]and continuous curve (—) shows the present calculation.

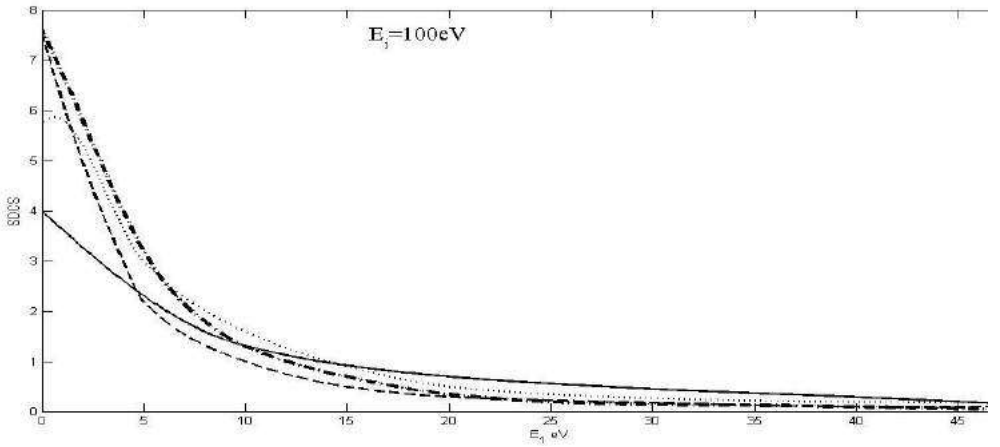


Fig 4: SDCS for ionization of hydrogen atoms by electrons of incident energy E_i = 100eV for different values of energy E_1 of the ejected electrons. Theory: short-broken ( ) curve presents[25], dashed (-- -) curve presents[26], dotted (····) curve presents[38] and continuous curve (—) shows the present calculation.

If we consider incident energy E_i=200eV in the **Fig 2**, the measured result coincides with Das and Seal[25] at lower and higher energies and moves closely at intermediate energies with that of Das and Seal[25]. From **Fig 3**, for the incident energy E_i=150eV, it is noticed that the present result concurred at very lower energies of E_1 with Das and Seal[25] and at about E_1=4eV with Shyn[26] and Konovalov and McCarthy[38] and the result moves a few percent higher upon increasing ejection energies. Finally, the present result has incorporated with compared results[25,26,48] at higher energies.

For considering E_i =100eV in the **Fig 4**, it is seen that the present calculation is less vertical for 0eV to 5eV; conforms when ejection energies of E_1 increase by 5eV to 15eV and a few percent higher at intermediate energies and the result coincides at higher energies of E_1 with the compared results, which exhibits a good qualitative agreement.

In this discussion on the four figures, a common trend has been observed in the shape of curves at higher energies and similar features of curves at intermediate energies and also a bit disagreed at lower energies of present result with all other compared results. This type of trend shows a qualitatively good agreement with the available hydrogenic ground state experimental data[26]and theoretical models[25,38] and the present results.

Conclusion

In the present paper,SDCSfor ionization of metastable 2P-state hydrogen atoms by electrons at intermediate and high energieshas been calculated following the multiple scattering theory of Das and Seal. Our results demonstrate qualitatively good understanding as a whole in higher energiesand also some noticeable inconsistencies are observed between the current results and those calculations of shyn[26], Das &Seal[25] and Konovalov & McCarthy[38] in lower energy continuum. It may be caused by the calculation performed in the different states. Our prediction using the multiple scattering theory of Das and Seal[25] will provide a momentous impact in the field of metastable 2P-state ionization problems. Due to the absence of any experimental data for the SDCS results of the hydrogenic metastable 2P-state ionization process, it is not possible to compare our computational results with the experimental data. Thus for judgment of this work, a pilot study in the relevant field is required and will add a new dimension to the significant study on this field of research.

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Impact of Work Stress and Job Satisfaction on Female Employees' Job Performance in the Private Commercial Banks of Chittagong

Sanjida Nusrat Lovely *
Rozina Akter **

Abstract

In our country, the number of female employees are dramatically increasing day by day and government also inspires this because the economic contribution of female employees in family, society and country is inevitable. In this paper, the researchers' aim to investigate the impact of work stress and job satisfaction on the performance of female employees who are employed in the private commercial banks in Chittagong. For this study, established scales on job satisfaction, occupational stress index and basic task performance are used for collecting data. Data were collected from 182 female employees by using 5 point Likert scale questionnaire. To justify the relationship among the variables, correlation and regression analysis are used. Findings of this research indicate that work stress and job satisfaction of female employees have a significant positive effect on task performance and there is a negative correlation between work stress and level of job satisfaction. A set of recommendations are offered for the decision makers in banks by which they can improve the scenario of our country. Limitations and directions for future research are also suggested in this study.

Key Words: Stress, Work stress, Job satisfaction,
Employee job performance, Private commercial banks.

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1. Introduction:

A rapid expansion of private commercial banks (PCBs) in Bangladesh has taken place from the mid 1990s. The commercial banking system dominates the financial sector of Bangladesh. Females are roughly half of the total population of Bangladesh. In all countries for the development of economic condition, an integration of both male and female labor forces is equally important. Employers of PCBs are attracting female employees by providing competitive and attractive remuneration package and good working environment. But most of the employers do not try to understand that how much work stress have to face women and whether they are satisfied or not with their jobs. The numerical strength of the female population should point towards the indispensability of utilizing their full potentials for the growth and development of society. The existence of high levels of stress among the female employees of PCBs and their performance has received considerable attention in recent years.

Stress is a dynamic condition in which an individual is confronted with an opportunity, demand, or resource related to what the individual desires and for which the outcome is perceived to be both uncertain and important (Robbins, 2011). Although stress is typically discussed in a negative context, it has also a positive value in any organization. Stress can be an opportunity for achieving potential objectives.

Work stress or Job stress is a situation in which some characteristics of the work situation are thought to cause deterioration of psychological or physical health of employees in an organization, or to cause risk factors. However, excess amount of work stress can lead to a lack of productivity, a loss of confidence, and the inability to perform the routine activities in organization. As a result, quality employees lose their enthusiasm for their work and eventually withdraw themselves from the organization. Work stress also depends on gender and personality. In a research work, where results show that as compared to male workers greater number of female workers consider their work as stressful and the result also revealed that the female workers reported comparatively more health complaints than the male workers in organization (Wadud, 1996).

Job satisfaction is the level of gladness for a person feels about his or her job. Job satisfaction falls into two levels: affective job satisfaction and cognitive job satisfaction level. Affective job satisfaction is a person's emotional feeling about the whole life of a job. Cognitive job satisfaction is defined as how satisfied employees feel regarding some features of their job, such as salary, periods, or profits. Job satisfaction impacts on a person's physical health and intellectual happiness and also reduces the absenteeism of an employee and the rate of turnover.

Another research work have found a separate but interconnected relationships between work stress and job satisfaction of female employee's in an organizations (Chandraiah, Cgrawal, & Manoharan, 2003).

Employee performance is also known as job performance or individual performance in an organization. The definition of performance is not standardized and there is no universally accepted definition of performance. As a result, persons who have tried to define it they defined it in their own way.

In the view of Putterill and Rohrer (1995), at a particular time the product /productivity of an employee in the manufacturing environment which is acceptable in terms of quality. Helllriegel, Jackson, and Slocum (1999) say, the effort that is given by an individual in achieving work target can be called performance. Job performance should be captured by individual performance and be valid and reliable in terms of measurement scale. Rivai and Jauvani (2009) explain the work performance as the real behavior express by everyone as work achievement produced by employee appropriate to their role in the organization. Based on the above opinions, it could be concluded that job performance is a work result of work achievement of one's quality and quantity achieved in an organization in performing its job. Employees perform different jobs in an organization depending upon the nature of the organization and it varies from person to person. There is a strong correlation between work stress and job performance of employees in organization.

However, research on work related stress of entry level female employees of private commercial banks in Bangladesh is very limited. In this paper, researchers try to focus on the female bank employees in Chittagong city for measuring stress and job

satisfaction. The research work on this issue was not conducted before. This led us to conduct a study to examine the practical scenario of work stress and job satisfactions of female bank employee's and also evaluate the impact of these independent variables on the job performance of an organization.

The broad objective of the study is to investigate the impact of job stress and job satisfaction of female bank employee's on the performance of an organization in Bangladesh.

1.1 Statement of problem:

In our country, female workers have to face various types of work stress in every categories of organization. They have to work and perform simultaneously with male workers. The pressure of this work stress is very much high in banking sector organization. Employers of banks have no consideration to a female employee as she has to perform two sides of responsibility at a time. When a worker whether he/she is male or female enters into an organization with various types of family pressure then the employers cannot get this employee with 100 percent concentration for his organization. The pressure of these types of work stress is very high to a female employee in a banking organization. So, the job satisfaction and job performance of female workers is not satisfactory at their organization. Employers of banks have to give concentration to the female employees for minimizing the work stress and to improve job satisfaction and performance. But most of the employers are ignoring this issue and continuously remain the employees on work pressure. In this paper, researchers have tried to identify the reasons of work stress of female employees and stated some suggestions for minimizing work stress and improving the job satisfaction and job performance in banks. Chandraiah et al. (2003) says in an article that job stress directly effect on employee job satisfaction and performance of the employees in an organization. There are opposite relationship between job stress and employee job satisfaction. If employees are not feeling stress on their job and are satisfied with their job then this is a positive impact on organization productivity and performance. If employees feel stress on their job and are not satisfied with their job then this is negative impact on organization productivity and performance.

The problem statement is that there are many factors of work stress of female employees that has an impact on employee job satisfaction and job performance.

1.2 Objectives:

The main objectives of the study are:

To investigate the relationship between work stress and job satisfaction of female employees' in the private commercial banks of Chittagong.

To identify the impact of work stress and job satisfaction on female employee's job performance in the private commercial banks of Chittagong.

1.3 Research Questions

What is the relationship between work stress and job satisfaction of female employees in the PCBs of Chittagong?

What is the impact of work stress and job satisfaction on job performance of female employees in the PCBs of Chittagong?

1.4 Rationale of the Study: The PCBs of Bangladesh has becoming a dominant source of our economy day by day. The work pressure in this sector is also rising. So, it is important to be concerned about the mental well-being of the employee. Besides, their job satisfaction level also must be known. It is hoped that if a research can be done, the stress level and the satisfaction of the female employee will be identified. It will broaden the research aspect in this area and will also help the employee to reduce their stress level. It is hoped that the female employees will be more satisfied with their occupation by proper management which can be theorized by such research work. This will help to improve the job performance and increase the level of job satisfaction of PCBs female employees in Chittagong.

1.5 Hypotheses of the Study:

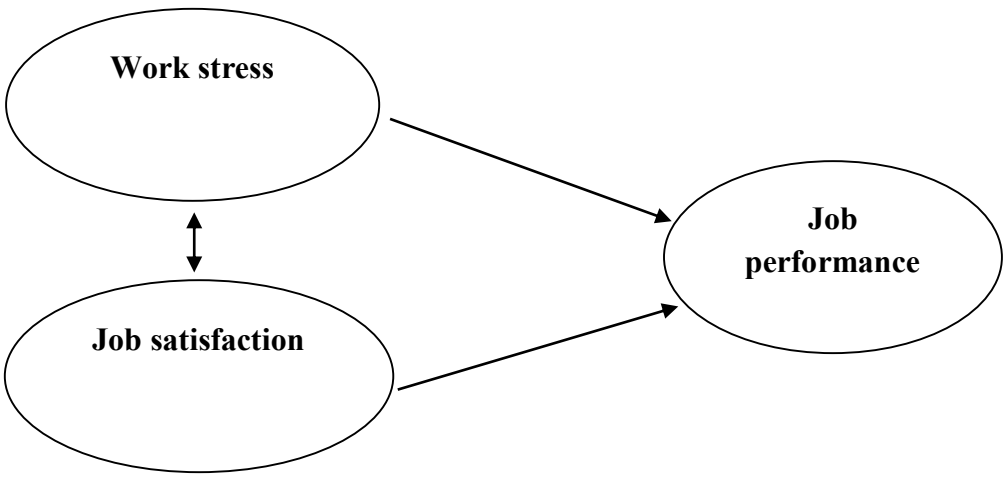
H1: Work stress of female bank employees has a positive impact on their job performance.

H2: Job satisfaction of female bank employees has a positive impact on their job performance.

H3: There is a negative correlation between job satisfaction and work stress.

Hypothetical Model:

Independent variables Dependent Variable



Source: Authors' own research, 2018

2. Literature Review:

2.1 Work Stress and Job Satisfaction: Stress refers to the generalized, patterned, unconscious mobilization of the body's natural ability (Yahaya et al., 2009). McGrath (1970) addresses stress as a perceived substantial imbalance between demand and response capability of a person, under conditions where failure to meet demand has important perceived consequences. In human beings stress is repeatedly used to define the body's reactions to demands engaged upon it, whether these demands are favorable or unfavorable. Furthermore, in women levels of stress-related illness are nearly twice as high as for men employees (Abdullah et al., 2008).On the other hand, job satisfaction means how much persons feels confident about their work in an organization and how much their work are different. Lawler (1972) expresses that job satisfaction is an

employee's positive exhilarating feedbacks on a particular job s/he is involved with in a particular time period. According to Locke (1976), job satisfaction is "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (p. 1300). The organizational stressors or characteristics, which cause stress, are role conflict, ambiguity; overload and task demand (Robbins, 2011). At the workplace women employees are often subject to under pressure by male counterparts that produce higher level of stress among women (Rubab et al., 2008). There is a controversial relationship between work stress and job satisfaction. The earlier educations recommend that upper level of work stress reasons a smaller amount of job satisfaction in an organization. Some authors found significant positive impact (Li Li et al., 2014; Riaz et al., 2016; Rajeshwaran & Aktharsha, 2017) while others found negative impact or relationship (Alam & Dilruba, 2016; Ahsan et al., 2009; Bemana et al., 2013; Gandhi, 2017;Nahar et al., 2013) between work stress and job satisfaction . Another study has shown that work stress is higher for the employees dissatisfied with their jobs than the satisfied ones (Rahman & Sorcar, 1990).

2.2 Work Stress and Employee job performance:

According to (Hoppock, 1957; Kane & Lawler, 1976), job performance is the record related to the results after practicing a job for a given period of time. On the other hand, (Schermerhorn, 1989) asserts that job performance refers to the quality and quantity that are attained by individual employees or group of employees after completing a given task. Motowild and Borman (1993) define job performance as the aggregated financial or non-financial added value by the employees in contribution to the fulfillment both directly and indirectly to the targeted goals of the organization. Work stress has a direct impact on the performance of employees in different levels of profession which is related to employee motivation and performance (Ostroff, 1992). There is a negative correlation between work stress and job performance (Arshadi & Damiri,2013; Basit et al.,2017; Bashir &Ramay, 2010; Hoboubi et al., 2017; Khuong & Yen 2016; Murali et al., 2017).Some authors have found a positive correlation between work stress and job performance (Ekienabor, 2016; Gharib et al., 2016; Rajeshwaran &Aktharsha,2017).

2.3 Job Satisfaction and job Performance: Job satisfaction is a very important part for any organization. In the organization many people are work for the sake of money and profit. If the workers of an organization are not satisfied with their work and feel stress on their jobs then the employees of the organization were not complete their work in a right way then this is negatively impact on the good will and performance of the organization.

More satisfied workers are less likely to leave their employer (Clark, 2001), have lower rates of absenteeism (Clegg, 1983) and higher productivity (Mangione & Quinn, 1975). In another study it is also showed that a positive correlation is found between job satisfaction and job performance which in agreement with the popular 'human relations' view that a satisfied worker is a more productive worker than others (Haque, 1992).There was statistically significant positive correlation between job satisfaction and productivity indices (Hoboubi et al., 2017*)*.But there also contradiction of those result. Masihabadi et al. (2015) found that job satisfaction negatively affect job performance.

Though there were extended studies on impact of stress on job performance and satisfaction in various countries, but there is notable absence in Bangladesh especially in Chittagong division. Banking sector is more growing and attractive workplace for the job seekers and female employees also have interest in doing jobs in bank. That's why the researchers want to investigate the relationship between work stress and job satisfaction and their impact on job performance of female employees in private commercial banks.

3. Research Design and Methodology

Research design and methodology section is divided into six sub-sections. The first sub-section presents the research design. In the second sub-section, the sampling design is discussed. In the third sub-section, data sources and instruments are mentioned. The fourth sub-section declares the reliability and validity. The fifth sub-section discusses the instruments of the study whereas the last sub-section highlights the types of statistical techniques employed to test the hypotheses. The research design and data is a quantitative in nature.

3.1 Research Design

The design of this research is exploratory research. The aim of the study is to investigate the relationship and impact of job satisfaction and stress on the job performance of female employees in banking sector. To find out the impact on job performance, this research is done. So, it is an exploratory research design.

3.2 Sampling Design

A sampling frame is designed only for the female bank employees within the division of Chittagong, who are employed in private commercial banks. The respondents are selected randomly and all respondents are selected as per convenience sampling technique.

3.3 Data Sources and Instrumentation

The study is conducted with the help of primary data. Primary data were collected through questionnaire survey. Total 300 questionnaires were dispersed to the female employees of private commercial banks in Chittagong, Bangladesh. From 300 observations, we got return only 220 questionnaires from the respondents. By evaluating all the response, we select 182 questionnaires for this research purpose. Others 38 questionnaires were rejected for incomplete and improper information. A five points Likert scales format questionnaire are designed for collecting data, where values are ranging from **(**Strongly Agree=5, Agree= 4, Neutral=3, Disagree= 2, and strongly Disagree=1).

3.4 Statistical techniques:

After the collection of data we analyzed the data through SPSS-23. For analyzing the data we put the value in that software and different test which include reliability, regression and correlation techniques are applied for calculating the results.

3.5 Instruments of the study:

For measuring the work stress and job satisfaction of female employees and their performance in a bank, different variables were used in this study. The research instrument used in this research is self-administered questionnaire; respondents understand the questions and complete the questionnaire on his or her personal values. Questionnaires are supplied to the respondent for collecting data. The sources of the variables are stated below:

3.5.1 Work stress: For measuring the work stress 'Adoption of occupational stress index' factors by Latif and Sultana (2009) scale is used.Twenty five-items scale is used for sample. Sample items are: I often feel burned out, Feeling fatigue during the workday, I feel frustrated on the job and I get upset in the job more than usual as such.

3.5.2 Job performance: For measuring the job performance of female bank employee's, Tsui et al. (1997) eleven -items scale is used. Sample items are 'the employee's efficiency is much higher than average, Employee's standards of work quality are higher than the formal standards for this job, Employee strives for higher quality work than required' etc. The mean score of job performance is obtained by totalling the job performance item scores, and dividing them by the number of items, in order to obtain the job performance mean score.

3.5.3 Job satisfaction: For measuring the job satisfaction of the respondents, an eleven-items scale developed by Ather & Nimalathasan (2006) is used. Sample items are "My salary is the best compared with other organization, my achievement is recognized by my Chairman/ Head, and overall I am satisfied" etc.

3.6 Reliability and Validity:

Before applying statistical tools, testing of the reliability of the scale is very much important asit shows the extent to which a scale produces consistent result if measurements are made repeatedly. Cronbach's alpha is the most widely used method. According to Malhorta and Peterson (2006), when Cronbach's Alpha coefficient of variable is below 0.6, the variable's reliability is considered weak. However, if the Cronbach's Alpha coefficient of a variable falls in between 0.6 to 0.8, it is classified

as moderate strong. Nevertheless, if a variable's Cronbach's Alpha coefficient score falls between 0.8 to 1.0, this indicates that this variable has a very strong reliability. In the present study, therefore, we used Cronbach's alpha scale as a measure of reliability in Table- 1.

Table 1: Internal Reliability Analysis Result

Factors	Cronbach's Alpha	N of items
Work Stress	0.802	25
Job Performance	0.831	11
Job Satisfaction	0.865	11

From the Table-1, it is seen that the reliability value of work stress is 0.802 for 25 numbers of items.The reliability value of job performance is 0.831 for 11 numbers of items and reliability value of job satisfaction is 0.865 for 11 numbers of items. If we compare this reliability value with the standard value of alpha then it is found that all the variables are used in this study are highly reliable for data analysis. All the variables have a very strong reliability value.

Validation procedures involved initial consultation of the questionnaires. We used established scale in the questionnaire. The experts also judged the face and content validity of the questionnaires as adequate. Hence, researchers satisfied the content and construct validity.

4. Data analysis and Discussion of result:

For analyzing the data, correlation and regression analysis are done here. Results of those variables are shown in the following tables (table 2, table 3, table 4and table-5):

Correlation:

Table- 2: Relationships among work stress (WS), job performance (JP) and job satisfaction (JS).

Correlations

		WS	JP	JS
WS	Pearson Correlation	1	.542**	-.211**
	Sig. (2-tailed)		.000	.004
	N	182	182	182
JP	Pearson Correlation	.542**	1	.282**
	Sig. (2-tailed)	.000		.000
	N	182	182	182
JS	Pearson Correlation	-.211**	.282**	1
	Sig. (2-tailed)	.004	.000	
	N	182	182	182

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

The table shows that work stress has significant negative relationship with employee's job satisfaction at the value r = -.211 and p =.004 which is less than 0.05. The relationship between work stress and job performance is positive at value r = 0.542. This indicates a strong relationship where p value is 0.000. The relationship between job satisfaction and job performance is also positive at value r = 0.282 and it is significant at p = 0.000<0.05.

Regression:

Table-3:

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.568[a]	.323	.316	.43575	1.688

a. Predictors: (Constant), JS, WS

b. Dependent Variable: JP

The model shows that the correlation between the independent and dependent variables represented as R is 0.568. The coefficient of determination that show how the variables are deviated from the straight line which has the value of 0.323 represented as R Square. As Hair et al. (2006) explained that the percentage of total variation of Y is indicated by the coefficient of determination value by the regression model consisting of X. Based on this concept, it can be anticipated that 32.3 percent of the average job performance is explained by the two independent variables such as work stress and job satisfaction. The Adjusted R Square value should be less than 0.8. In this study, the value of Adjusted R Square is 0.316, so it is significant. The level of significance is also acceptable at p= 0.00. Durbin- Watson value 2 or near to 2 is considered as standard value. In our analysis this value is 1.688 that means that there is no issue of auto correlation. It is also acceptable and the results are justified.

Nevertheless, only coefficient of determination value is insufficient to determine the relationship between both dependent and independent variables. In such, the researcher has further explored other measures such as ANOVA F ratio, standardized coefficient (Beta) and t values in the following sections to testify the relationship among all variables.

Table- 4:

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.224	2	8.112	42.722	.000[b]
	Residual	33.988	179	.190		
	Total	50.212	181			

a. Dependent Variable: JP

b. Predictors: (Constant), JS, WS

Looking at the ANOVA analysis output for job performance in Table 4, result shows that 50.212 (16.224 + 33.988) squared error will occur if the prediction for dependent variable only uses the mean of job performance. The value of F must be greater than 5. In this study, the value of F is 42.722 that mean that it is significant. The significant level is also acceptable at p=0.000.

Table- 5:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.350	.276		4.882	.000
	WS	.551	.069	.505	8.028	.000
	JS	.141	.051	.175	2.780	.006

a. Dependent Variable: JP

The magnitude represents that there is significant relationship between work stress and employee's job satisfaction. The values of the entire beta are shown on the above Table 5. They tell us that how much our independent variables are affecting the dependent variable. It can be interpreted as 1 unit change in work stress brings 0.551units change in employee's job performance and 1 unit change in job satisfaction brings 0.141 units change in employee's job performance. The significant level is p=0.000 and 0.006 which are $p < 0.05$. There is positive relationship between work stress and job satisfaction that is shown by positive values. For regression analysis t- Value should be greater than 1.96. On this table, the t- value of work stress is 8.028 and job satisfaction is 2.780 at significance level 0.000 and 0.006. All these values are significant and acceptable for this analysis.

The proposed Hypotheses of the Study are stated below:

H1: Work stress of female bank employees has a positive impact on their job performance:

The presence of work stress can be a motivator that urges the individual to strive for excellence and that increase the job performance level in an organization. In this paper it is found that, Work stress of female bank employee's is affecting the job performance in an organization positively. It can be interpreted as 1 unit change in work stress brings 0.551units change in female bank employee's job performance. So it is a positive impact. On the other hand $t = 8.028$ and $p = 0.000$. So due to these reasons, it can be said that work stress is positively impact on the female employee's job performance of banking sector in Bangladesh and the hypothesis can be accepted.

H2: Job satisfaction of female bank employees has a positive impact on their job performance:

To influence the behavior of a person job satisfaction is very necessary. Job satisfaction means how much persons feels confident about their work and how much their work are different in organization. It is found that, Job satisfaction of female bank employees is affecting the job performance of an organization positively. It can be interpreted as 1 unit change in Job satisfaction brings 0.141units change in job performance. So it is a positive impact. On the other hand $t = 2.780 > 1.96$ and $p = 0.006 < 0.05$. So it can be

said that job satisfaction is positively related and impact on the female employee's job performance of banking sector in Bangladesh and the hypothesis can be accepted.

H3: There is a negative correlation between job satisfaction and work stress:

Work stress and employee's job satisfaction are two separate concepts but these two concepts are interconnected with each other. If the employees of an organization are happy with their work and don't feel stress on their job then this is good for the organization because it is says that a happy worker is a productive worker. In our calculation, the coefficient of correlation between work stress and job satisfactionis-.211 and $p= 0.004 < 0.05$. This indicates that, negative correlation exists between job satisfaction and work stress and it is not significant. So, there are no significant correlation between job satisfaction and work stress. That means that there is a negative correlation. The hypothesis can be accepted.

5. Conclusion:

The aim of this study is to investigate the work stress and job satisfaction of female employees' and their impact on job performance in banking sector of Bangladesh. It is important for an organization to understand the needs of their employees and give them an environment that are satisfied them and fulfill their needs. The study found that female employees are satisfied with their job and feels a little bit stress on their job. The research indicates that work stress and job satisfaction of female employees has significant positive impact on their job performance and there is a negative correlation between work stress and job satisfaction. The performance of the banks not only depends on the male employee but also female, so the management should highly emphasis on reducing stressors and ensures high job satisfaction to yield maximum performance of employees.

6. Recommendation:

Employers should inspire the female employee for involving in banking sectors. Bank jobs are more challenging job in competitive markets, so employers should motivate the female employee for taking challenging. Employers can redesign the timing schedule in an organization which can inspire female employees for entering n bank

jobs such as- job sharing by two female employees, doing jobs maximum two days in a week at home by online. More risk activities such as, investments, loans can be done by sharing two or more female co-workers, and then stress can be minimized.

Male bank employee should consider the female employees as co-workers not competitors. Managers of a bank can minimize the stress level of female employees by giving an opportunity for sharing family and organizational problems. If stress is minimized then job performance or organizational performance will be increased. The family members of a female service holder can also support her by sharing some family responsibility. A child care center facility should be arranged for a mother's service holder by the employers or authority. Which will be increased the job involvement of a female employee. The casual leave and sick leave should be accurately provided to the female job holders. If the employers bounded an employee for fulfilling target and give pressure continuously then stress will be increased and job satisfaction of employees will be decreased.

7. Limitations of the Study:

The study is conducted on the female employees of private commercial banks of Chittagong area to investigate the impact of job stress and job satisfaction on employee's job performance. The sample size is only182 and based on convenience sampling.

Although there are several contributions in this research, a lot of limitations are still there. This study focused only the female employees who are working in different banking sector organization, and ignored the male banks employees, who have contribute on their organizations. The researchers face the problem of some inadequate and unreliable data. Another problem is that some of the respondents are not ready to cooperate especially in filling the questionnaires; they feared that their information will be disclosed to other people. Also the researcher does not get back all the questionnaires that are distributed to the respondents. However, the responses received were sufficient to accomplish the purpose of this study.

8. Direction for the future research:

Same study may be conducted with large sample size which generates more expected representation of the study. Further study may also conduct with male counterpart of the same topic on other industry in Bangladesh. This study can also be conducted for the Govt. banking sector in Bangladesh. Because, this research paper is only consider the private commercial banks in Chittagong. The future research can be to discover that how work stress can be strategically minimized in order to increase the employee's performance level of the organization. Another aspect of the future research can be to see whether work stress is negatively correlated with the employee's performance in the organization. The main point here is to go to other areas in Bangladesh which are far apart with regard to research study and where very fewer studies have been conducted. The simple thing is that any kind of advancement will definitely contribute towards research work.

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