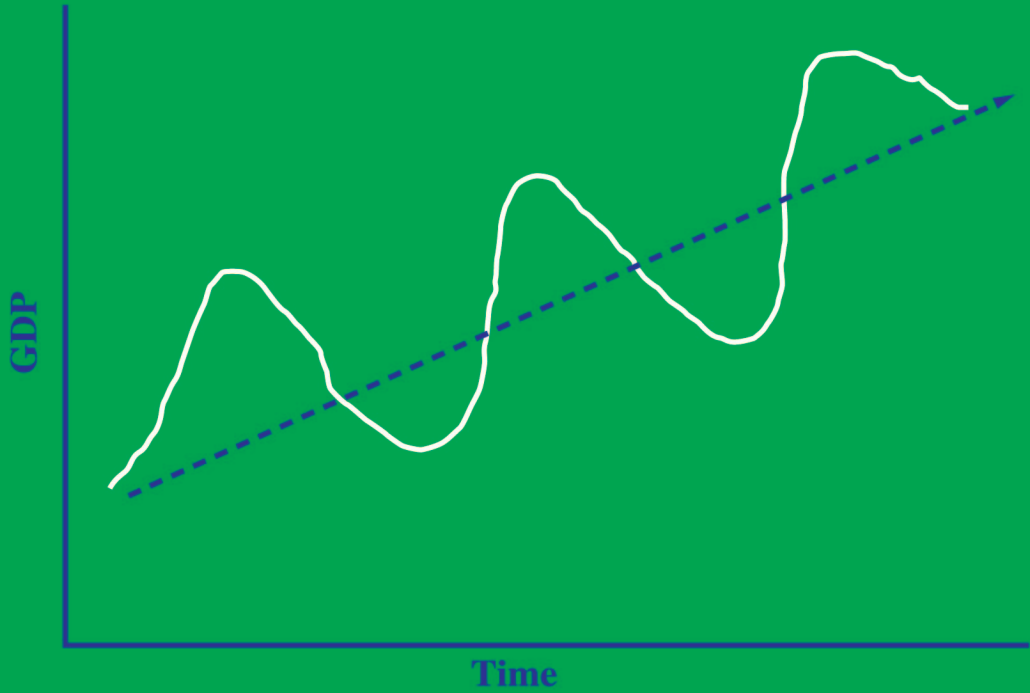


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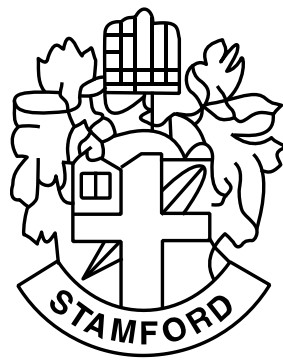
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Sugar Refiners in Bangladesh: Do They Compete or Collude?

Mohammed Helal Uddin*

Abstract: *A small number of large refiners controlling the sugar market is alleged as a form of cartel. While a small number of players in a market increase the chance of forming a cartel, this is not necessarily the inevitable outcome of that market. Markers such as co-integration of domestic and world prices or price-cost correlation, price variances across regimes, and margin stability are applied here to reveal the signs of collusion. Refined sugar prices in Bangladesh and raw sugar prices in the world market are found co-integrated. Co-integration can be observed in suspected non-competitive regimes. Equal variance test suggests that there is no significant change in variation in domestic sugar prices over the 2008-12 period but there is a significant change in variation in international raw sugar prices. In a competitive market scenario, it is not likely to happen. Though the variance test does suggest a lack of competitive behavior it does not necessarily imply the presence of a collusive behavior in this industry. The low variation in raw sugar prices in the international market during Ramadan hints if there is any coordination among the international players of sugar suppliers. Fluctuating margins are more suggestive of a competitive behavior on the part of the industry operators than otherwise.*

1. Introduction

Periodic upward spirals and persistent downward rigidity of the prices of essential commodities such as rice, potato, sugar, and edible oil creates tremendous pressure on low-income groups given the sheer dominance of food in their total expenditures. To ease such pressure on the marginal people, the government agencies undertake various regulatory actions, often with no meaningful outcomes in the end. Collusion in some layers of the relevant supply chains and the resulting market power is believed to be responsible for price volatility in the markets of essentials. Believing in such claims, the government of Bangladesh banned delivery order (DO) layers of some of the essentials' supply chains. A high degree of concentration in some layers of the supply chain makes them potentially more susceptible to collusion, but this may not necessarily be the

* Associate Professor, Department of Economics, University of Dhaka.

The paper uses the report "Marketing Institutions and Food Price Volatility in Developing Countries: Assessment of Competition in Sugar Market of Bangladesh, IGC-LSE" by Mohammed Helal Uddin as source material.

inevitable market outcome. For instance, when the demand is variable and changes sharply, cartels are unlikely even though there may be only a few firms operating in the industry (Grout and Sonderegger, 2005). However, without any clear and strong evidence of non-competitive behavior in place, the government of Bangladesh has enacted Competition (Antitrust) Law and formed the Competition Commission. It is essential that the enacted law is properly implemented in dealing with the problems of anti-competitive behavior in markets of Bangladesh.

The refinery layer of the sugar supply chain is characterized by a high degree of concentration (Helal, 2012). The sugar industry is capital-intensive, requiring very large investment in plant and equipment. It offers significant opportunities for economies of both scale and scope. These characteristics have shaped the market structure of the industry. Almost all of the existing refining groups are exploiting the economies of scope in the production/processing of many essential commodities. Since the essential commodity distribution channel is the same for all commodities, most of the sugar refineries are economizing on distribution costs by producing several of the essential commodities. For a new entrant to be successful in this market, it is necessary that it utilizes the economies of scope and saves on distributional costs. Thus, not only the fixed costs but also economies of scope may discourage new entry.

To compete effectively with multi-product firms with economies of scope new entrants will require far more investment than is required for a sugar refinery only. There has been no new entry or exit in the refining end of the sugar industry during the last several years (Helal, 2012). However, the existing six refinery groups in this market are far too many relative to the total domestic demand for refined sugar. Volatility in prices due to capacity constraint is not expected as excess capacity is inbuilt in this industry.

2. Objective of the Paper

As indicated in the preceding section, one would thus expect sugar refinery layer to be potentially more susceptible to collusion. A small number of large importers' controlling the sugar market is alleged as a form of a cartel. Given the fact that the high concentration is due to efficiency ground, any collusive behavior is unlikely to exist. The purpose of this study is to gather pieces of evidence on the non-competitive behavior in refining layer of the sugar supply chain if any.

3. Literature Review

There are a plethora of investigative studies on this issue elsewhere in the world. There have only been a few of such systematic efforts in Bangladesh; looking into

the market structure and the competition issues for a commodity whose supply is almost entirely import-determined. Recently, Helal and Taslim (2010) assess competition in the edible oil sector in Bangladesh. They have found concentration in the upper echelon of the supply chain, but no conclusive evidence in support of collusive behavior in any of the layers of the edible oil supply chain. The Centre for Policy Dialogue (CPD) undertook a diagnostic study to find out the causes of the recent food inflation. The CPD study attempted to trace the supply chain of different essential commodities as well as the market intermediaries who were assumed to play an important role in causing price inflation. The study asserted collusive behavior and syndication by importers even though it had no credible evidence of such behavior among the concerned firms. The conclusions were mere assertions rather than a derivation from credible evidence or data.

2. Methodology and Data

While a small number of players in a market increase the chance of forming a cartel, this is not necessarily the inevitable outcome of that market. It is advisable to routinely investigate the industry for the existence of a cartel despite the fact that a few players in it, even when there is no overt hint of collusion. One way of doing it is to look for certain markers that give revealing signs of collusion. Some of these markers are co-integration of domestic and world prices or high price-cost correlation, low price variance, margin stability and so on. In the absence of a cartel, the domestic price as a whole should be co-integrated with the international price. The former should track the latter closely. What co-integration means, in this case, is that, the two price series cannot wander off in opposite directions for very long without coming back to a mean distance eventually.

In line with Abrantes-Metz *et al* (2005), a variance test as a screening device for detecting cartel can be performed here. Studies show that prices can be less responsive to cost when firms collude (Atheyet *al*, 2004; Harrington and Chen, 2006). Thus, in periods of non-cartel or competitive behavior, prices and costs tend to be highly correlated, in periods of cartel behavior they do not. Formation of a cartel by the only few refiners is widely believed to be one of the main reasons for the price hike in Bangladesh during Ramadan. Thus, tests have been performed using Ramadan period as suspected cartel period and the rest of the year as periods of non-cartel activity. In the case of a cartel formation by the leading firms who are engaged in joint profit maximization, it is the stability of the profit or price-cost margins that would be of greater analytical interest. A steady margin is expected to be observed in such a situation.

There are many empirical tools to detect collusive behavior or cartel in a market. Depending on the availability of data certain types of diagnostic tools are preferred to others. The choice of tools is generally case specific. Of course, rejection of competitive behavior with one tool does not imply collusion with certainty, only that behavior is inconsistent with the specified class of competitive models. Rather, they seek to establish whether the observed behavior has a difficult time being explained by competitive models. If a set of firms fails certain screening test- their behavior is inconsistent with competition or there is an inexplicable change in behavior - it is necessary to turn to one of these other methods to assess whether collusion is the most natural explanation.

This analysis uses information available from several data sets. They are - the Department of Agricultural Marketing (DAM), Ministry of Agriculture, Tariff Commission of Bangladesh, Ministry of Commerce, Bangladesh Bureau of Statistics (BBS), and National Bureau of Revenue (NBR). Daily prices for sugar and other related commodities are available from DAM. However, price data is available for Dhaka City Corporation only. The daily international price of raw sugar is derived from the Chicago Board of Trade. Price data are available from January 24, 2008 until October 4, 2012. The size of the sample is thus 1226. There are, however, some data gaps due to lack of price data during weekends and holidays as well as some missing data in the DAM original data set.

3. Results

3.1 Co-integration of domestic and world prices

In the absence of a cartel, the domestic sugar price (p_d) as a whole should be co-integrated with the international raw sugar price (p_r). The former should track the latter. To test for co-integration, each of the time series on the price variables was subjected to a unit root test. As confirmed by the tests (Augmented Dickey- Fuller test) both variables have unit roots, i.e. they are integrated of the order 1, I (1). Thus, they are non-stationary variables.

To test if the international raw sugar prices and domestic refined sugar prices are co-integrated, the following regression model is considered:

$$\Delta b_{pt} = \alpha + \beta_1 \Delta w_{pt} + \beta_2 \Delta w_{pt-1} + \beta_3 \Delta w_{pt-2} + \Delta u_t \quad (1)$$

where,

Δb_{pt} = first difference of domestic refined sugar price

Δw_{pt} = first difference of raw sugar prices

Δw_{pt-1} = first difference of raw sugar prices with lag (1)

Δw_{pt-2} = first difference of raw sugar prices with lag (2), and

Δu_t = first difference of error term.

The test of the cointegration is based on a test of the stationarity of the error term of equation (1). The test is based on the equation below:

$$\Delta u_t = \pi_0 + \pi_1 u_{t-1} + \Psi_1 \Delta u_{t-1} + \Psi_2 \Delta u_{t-2} + \epsilon \quad (2)$$

where π and Ψ are the estimated parameters and ϵ is the error term. Two lags used in equation (1) are assumed to be adequate to test if the error term ϵ is white noise.

The estimated coefficient on u_{t-1} is -0.17 and is significant because the calculated t value exceeds the critical t value at 1% level. This suggests a long run relationship between refined sugar price movements in Bangladesh and raw sugar prices in the world market. Thus, these series are found co-integrated. This suggests a long run relationship between sugar price movements in Bangladesh and that in the world market; such that, these two markets may be regarded as co-integrated. What co-integration means in this case is that, the two price series cannot wander off in opposite directions for very long without coming back to a mean distance eventually.

The trend of sugar price movements in the local and world markets presented earlier clearly shows a close relationship between the world and the domestic market prices. Fluctuation in the world price of raw sugar is soon transmitted to the domestic price in Bangladesh. But it does not mean that the two prices have to move together on a daily basis. Thus, co-integration suggests a long run pass-through between price cost series in this case, but it will not identify if the market is competitive or not. Co-integration can be observed in both competitive and suspected non-competitive regimes.

3.2 Variance test

Formation of a cartel by the only few refiners is widely believed to be one of the main reasons for price hike in Bangladesh during Ramadan. Thus, tests have been performed using Ramadan period as suspected cartel period and the rest of the year as periods of non-cartel activity. As stated earlier, prices and costs tend to be highly correlated in periods of non-cartel activity. No strong correlation is likely to emerge in periods of cartel behavior. The correlation coefficient is 0.878 for Ramadan and it is 0.881 for non-Ramadan periods. Thus, we can conclude that there is no significant difference between the regimes in terms of correlation.

A variance test as a screening device for detecting cartel is performed for this section of the market. Studies show that prices can be less responsive to cost when firms collude (Athey *et al*, 2004; Harrington and Chen, 2006). Imported raw sugar, the main input for the production of refined sugar, accounts for more than

87 percent of the cost of refined sugar (Helal, 2012). Thus, the variances of wholesale prices of refined sugar (σ_w^2) and international prices of raw sugar (σ_r^2) are expected to be of similar magnitude if there is no price manipulation in the domestic market (it is assumed that there is no manipulation in the international market of raw sugar). This means the null hypothesis is: $H_0: \sigma_w^2 = \sigma_r^2$.

When equal variance test is performed for the entire 5 year period, the null hypothesis of equal variance is rejected at the 1% significance level. Equal variance hypothesis is rejected in favor of $\sigma_w^2 < \sigma_r^2$, which means domestic prices are less volatile than the raw sugar prices (Table 1). When this same test is performed for the two regimes - Ramadan vis-a-vis non-Ramadan - the results become even more interesting. Equal variance is rejected for both the regimes, but it is rejected in favor of $\sigma_w^2 < \sigma_r^2$ for the period of non-Ramadan and rejected in favor of $\sigma_w^2 > \sigma_r^2$ for the period of Ramadan (Table 1). This means the volatility in wholesale price increased slightly relative to raw sugar price during Ramadan. Actually, there is no significant variation in domestic sugar prices over the 2008-12 periods but there is significant variation in international raw sugar prices. The low variation in raw sugar prices in the international market during Ramadan hints if there is any coordination among the international players of sugar suppliers. This finds support from the fact that average price of raw sugar is greater during Ramadan by more than BDT 2. There is a possibility of such increase in raw sugar prices due to the world-wise demand hike of sugar. Further investigation is needed to reach any conclusion on this point.

Table 1: Test of Equal Variance

| Price | Ramadan | Rest of the year | Overall |
|-----------------------------|----------------------------|----------------------------|----------------------------|
| σ_w /Wholesale price | 8.6 | 8.3 | 8.4 |
| σ_r /Raw sugar price | 7.2 | 9.5 | 9.3 |
| Hypothesis | $H_0: \sigma_w = \sigma_r$ | $H_0: \sigma_w = \sigma_r$ | $H_0: \sigma_w = \sigma_r$ |
| P-value | 0.0545 | 0.0001 | 0.0006 |

Another point which deserves explanation is why there is almost no change in variances of wholesale prices across Ramadan and the rest of the years despite huge variances in raw sugar prices. Why is variation in raw sugar prices greater than variation in wholesale sugar prices? In a competitive market scenario it is less likely to happen. Though the variance test does suggest lack of competitive behavior it does not necessarily imply the presence of a collusive behavior in this industry.

The government of Bangladesh has banned delivery order (DO) layers for some of the essentials' supply chains alleging that speculative behavior in the DO market is the main culprit to price volatility in these markets. Sugar is one of the supply chains where DO layer has been cancelled.

When this same test is performed for the two regimes - Ramadan versus non-Ramadan - the results become even more interesting. Equal variance is rejected for both the regimes, but it is rejected in favor of $\sigma_w^2 < \sigma_r^2$ for the period when DO layer was active and rejected in favor of $\sigma_w^2 > \sigma_r^2$ after DO was cancelled. To put it differently, the policy change brings greater volatility in the wholesale prices compared with its cost variance. Manipulation of prices by DO holders is alleged to be one of the main reasons for price spiral of essentials like sugar, edible oil and so on. But the allegation is found baseless here. However, a greater volatility in wholesale prices after DO cancellation might suggest collusive behavior during DO regime or some stabilization role played by DO holders.

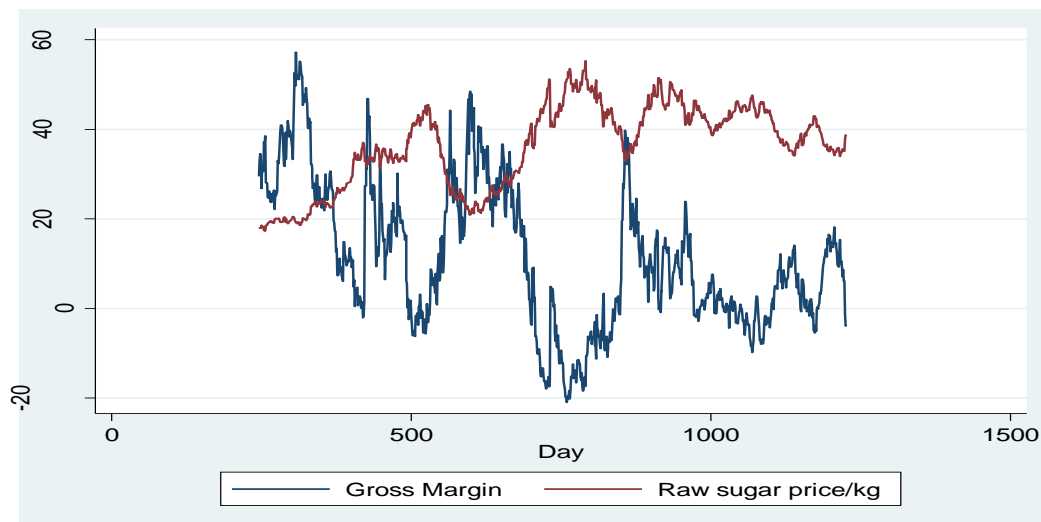
But with respect to margins, no significant difference is observed between the two regimes. Obviously, this does not support a collusive behavior under DO regime. Rather a stabilization role by DO holders is likely to better explain the story. If such a stabilization role used to be played by DO holders then the cancellation of DO layer is likely to increase the volatility in the prices from then on. After the cancellation of DO layer, the volatility has increased. Existing SO system is claimed to be no different than the replaced DO layer in practice. If this is true, then the increased volatility under SO system is not expected. Thus, there has to be alternative explanations for the increased volatility under SO system.

3.3 Margin Stability

In the case of a cartel formation by the leading firms who are engaged in joint profit maximization, it is the stability of the profit or price-cost margins that would be of greater analytical interest. A steady margin is expected to be observed in such a situation. A proxy of such a margin is calculated based on world and local prices. Here the margin is defined as local price of refined sugar minus world price of raw sugar divided by world price of raw sugar $(p_w \cdot p_r) / p_r$. This margin is calculated based on the lagged world price as a proxy of the marginal cost. This provides us with the approximate trend of the price-cost margin, but not the actual margin.

Obviously, fluctuating margins are more suggestive of a competitive behavior on the part of the industry operators than otherwise (Graph 1). Still one can have collusion where the refiners agree to charge a fixed margin over world price so they move in tandem with the $(p_d \cdot p_r)$ within given bounds. But this is not the case here. When the plots for the denominator p_r were superimposed on the same chart, the fluctuations of mark-up and world price did not imply such pattern.

Graph 1: Margin Based on Local Prices and World Prices of Raw Sugar



4. Conclusions

A small number of large refiners' controlling the sugar market is alleged as a formation of a cartel. Given the fact that the high concentration generated from efficiency ground, any collusive behavior is less likely to exist. While a small number of players in a market increase the chance of formation a cartel, this is not necessarily the inevitable outcome of that market. Still, we need to investigate the industry for the existence of a cartel even when there is no overt hint of collusion. One way of doing it is to look for certain markers that give revealing signs of collusion. They are - co-integration of domestic and world prices or price-cost correlation, price variances across regimes, margin stability and so on.

Refined sugar prices in Bangladesh and raw sugar prices in the world market are found co-integrated. What co-integration means, in this case, is that the two price series cannot wander off in opposite directions for very long without coming back to a mean distance eventually. This suggests that the fluctuation in the world price of raw sugar is soon transmitted to the domestic price in Bangladesh. But it does not mean that the two prices have to move together on a daily basis. Thus, co-integration suggests a long run pass-through between price cost series in this case. Co-integration can be observed in both competitive and suspected non-competitive regimes. The Equal Variance test suggests that the volatility in the wholesale price increased a relative slightly to raw sugar price during Ramadan. Actually, there is no significant change in variation in domestic sugar prices over the 2008-12 periods, but there is a significant change in variation in international raw sugar prices. The low variation in raw sugar prices in the international market

during Ramadan hints if there is any coordination among the international players of sugar suppliers.

Manipulation of prices by DO holders is alleged to be one of the main reasons for price spiral of essential like sugar, edible oil and so on. But the allegation is found baseless here. A greater volatility in wholesale prices after DO cancellation might suggest collusive behavior during DO regime or some stabilization role played by DO holders. Fluctuating margins are more suggestive of a competitive behavior on the part of the industry operators than otherwise.

References

- Abrantes-Metz, R. M., Froeb, L. M., Geweke, J. F. & Taylor, C. T. 2005 A Variance Screen for Collusion, *FTC Bureau of Economics, Working Paper No. 275*.
- Athey, S., Bagwell, K. & Sanchirico, C. 2004 Collusion and Price Rigidity, *Review of Economic Studies* Vol.71- pp 317.
- Centre for Policy Dialogue (CPD). 2007 Price of essential commodities: A diagnostic study of recent trends.
- Grout, P. A. & Sonderegger, S. 2005 Predicting Cartels, *Office of Fair Trading, Economic discussion paper*.
- Harrington J. & Chen J. 2006 Cartel Pricing Dynamics with Cost Variability and Endogenous Buyer Detection, *21- International Journal of Industrial Organization* 347.
- Uddin, M. H. 2012 Marketing Institutions and Food Price Volatility in Developing Countries: Assessment of Competition in Sugar Market of Bangladesh, *IGC-LSE*.
- Uddin, M. H. and Taslim, M. A. 2010 An Assessment of Competition in the Edible Oil Market of Bangladesh. *Bureau of Economic Research (BER), University of Dhaka*.
- Perloff, J. M., Larry S. K. & Amos G. 2007 Estimating Market Power and Strategies. *Cambridge University Press, New York*.

Emergence of a Growing Women's Contribution in the National Economy of Bangladesh

Tahmina Akhter^{*}
Jannatul Tazri Trisha^{**}
Jabunnessa Khan^{***}

Abstract: *Women constitute half of the country's population. However, their contribution in national economy often goes gender blind. This society is still holding on to the belief that men are responsible for economy and women depend on men for their subsistence. While in reality they are contributing in equally in family and at national level. If the unpaid works are included then it will be more than half. But most people do not acknowledge their contribution. Even they do not know how or how much, women are contributing in the national economy. In fact the national economy of Bangladesh is increasing rapidly because of women. They are working in sectors like unpaid work, RMG, tea manufacturing, SME, remittance, handloom, handicraft, etc. This study attempts to identify how women are contributing, how many of them are contributing and how much they are contributing in national economy of Bangladesh. It also identified the barriers they face and how we can get rid of those so that they can contribute more.*

1. Introduction

This paper represents women's contribution in national economy of Bangladesh. Most of the women are unpaid workers who never get the appreciation they deserve. Others who are professionals face many obstacles on the journey towards their dream. Despite all this, women are the major contributor of the national economy. The main goal of this study is to focus on their work and the impact they have created with their work. We focused on unpaid workers, workers in foreign job whose remittance is a huge source of foreign currency, garments workers who are keeping the economy mobile. The study also shed some light on agricultural, government and private sector, Tea manufacturing sector, Export Processing Zone (EPZ), handloom, handicraft and business sector as well as women entrepreneurs. The unpaid workers lack recognition, garment workers get hired because they are easy to control, women's remittance share goes gender

* Lecturer, Department of Economics, Bangladesh University of Business and Technology.

** A Graduate student at Department of International Relations, Jahangirnagar University, Savar, Dhaka.

*** A Graduate student at Department of International Relations, Jahangirnagar University, Savar, Dhaka.

blind, handicraft work and small business never get appreciated, women have to prove themselves equally capable again and again with every step in management work and business. Yet they are supporting themselves, their families and contributing at national level. In every sector women face some common problems but still they are contributing significantly in national economy. If unpaid working hours were to be included in GDP then women's contribution in national economy would outrun men's contribution. They can contribute more to national economy with some help from government and society. By this "help" we didn't mean any special facilities for women but the removal of obstacles and discrimination from the society.

2. Objectives of the study

The objectives of the study are:

- i. To identify the contribution of women who are working in different sectors like government and private sectors, foreign sectors, manufacturing sector and garments, etc. at specific place Savar, Dhaka and Garati village, Panchagarh.
- ii. To find out what kind of problems they face and how these problems can be overcome.

3. Literature Review

On the issue "Growing women's contribution in national economy of Bangladesh" many research works have been done till now. We found several books on this topic. Previous research works and books describe how women are contributing in our national economy despite many of their difficulties. We all know, compared to men women face much more difficulties to set their career. Muhammad Yunus ("*Banker to the Poor*" 1998) says that in our country traditional banks are gender biased. They prefer lending money to men. Even, if a rich woman wants to borrow money from a bank, the banker will ask for her husband's permission.

Despite of their obstacles women are contributing a lot in our national economy. Mahbub Hossain and Abdul Bayes said in their book ("*Rural Economy & Livelihoods*" 2009) in rural areas female members are contributing both in paid and unpaid sectors.

The Garments sector of Bangladesh is the key source of country's foreign currency. This sector is mainly run by female workers. An article titled "*Empowerment of Female Garment Workers*" published by Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) showed that in Bangladesh 80 percent of garments workers are female.

A study “*Estimating Women’s contribution to the Economy: the case of Bangladesh*” (2014) published from Centre for Policy Dialogue (CPD) showed that if household works were paid, the additional value of the works done by women would be equivalent to 87 percent of the current GDP as they spent on an average over seven hours a day in household chores without being paid and economically recognized.

Participation of women in labor force was 8.6 million in 1999-2000, which increased to 10.3 million in 2002-2003 with a rate of 6.59 percent (Khatun F et al., 2013).

A study titled “*Women Migrants Situation*” published by Bureau of Manpower, Employment and Training (BMET) showed the overall situation of Bangladeshi women migrants. It discussed about the obstacles and vulnerabilities which are faced by women in their migration process and at the work place. The study also discussed about the situation of returnee migrant workers and their social profile.

“*Gender Dimension on Remittance- a study of Bangladeshi women migrant worker in Lebanon*” the report published by Ovivashi Karmi Unnayan program stated that compared to men the number of Bangladeshi female migrant worker is very low. But female workers remit the big portion of their income than male workers. Female workers remit on an average 72 percent of their income where male workers remit 54 percent of their income and they remit more regularly than male workers.

Agriculture is a vital sector in our national economy. In this sector the role of women is undeniable. Data released by the *Ministry of Agriculture* in 2008-2009 showed that 46.75 percent of women of total population are engaged in agricultural work. And data released from *Bangladesh Bank* on November 2010 showed that from agricultural sector women’s contribution is 61 percent where men’s contribution is 39 percent.

There are several studies that show the contribution of women’s. In this paper an attempt was made to find out in which sectors women in a specific area Savar (Export processing Zone) and rural area (Garati Village) are employed and their contribution in the national income.

4. Methodology and Data Sources

This paper represents the present scenario of women’s contribution in our national economy. To make this research resourceful various books, journals, scholarly articles were carefully reviewed. The electronic media and various newspapers were reviewed vigorously to grab the latest data.

Reports published from well recognized organizations like World Bank, ILO, UN Women were collected and reviewed very carefully.

Two case studies and multiple focus Group Discussions (FGD) were conducted to make this paper more realistic. To get personal opinion in this issue multiple people were interviewed.

One case study is city based which is conducted in Export Processing Zone (EPZ), Savar and another was rural based conducted in Garati village, Panchagarh. Focused Group Discussions were held among undergraduate students from various departments of Jahangirnagar University.

4.1 An Overview of Women's Contribution in Bangladesh: From 1971 to 2015

In 1970's, there were very few paid workers. We couldn't find any official information about that time. But from the history, we know there were some writers, singers, entertainers, mid-wives, nurses, doctors and teachers. But unpaid workers were Centre of women involvement. After independence, the government found that, in the public service women were underrepresented by some bizarre restrictions, which was the reason behind the low participation of women in work force. Later they tried to establish equal employment. After the introduction of women quota in 1976, women constituted around 8 percent of total employment strength until 1985 in civil service. Since 1982 females have appeared in the BCS examinations and been recruited in all cadre services regularly. In 1994, women constituted around 9 percent and in 2002, 10 percent of total employment strength in BCS.

The establishment of Grameen Bank in 1983 helped women to be self-employed through micro credit that boosted national economy. Women have started to set up small and medium businesses as well. It had positive impact on national economy. Like entrepreneur Selina Quader started her agribusiness in 1986, some women followed her footsteps soon after. In 1995 Bibi Russel opened Bibi Productions, a fashion house with a slogan "fashion for development".

In 1990's rising Garments sector employed women in a wide range, in other words this sector depends on women workers. Export of labor force started including women workers as well in 1991 and their share of remittance helped the growth of national economy.

Women are exploring new sectors as well. Like, first female military pilot of Bangladesh in Air force. Flight Lieutenant Nayma Haque and Flying Officer Tamanna-E-Lutfy, both the female pilots have successfully completed initial phase of primary helicopter flying training in December, 2014.

Based on last census report of 2011, the total population of Bangladesh was 144,043,697. Of this 72,109,797 people were male and 71,933,900 female. According to unofficial online report as of 08:19pm, 28 February, 2016 the current population of Bangladesh is estimated of 165,006,062 people. Of this 83,499,449 people are male and 81,506,613 are female. Almost half of them are women. It is clear that their contribution in national economy is half as well.

5. Empirical Results

Women provide domestic household service for final use, care giving service, community service and help for other households. While a man dabbles with unpaid family works for about 2.5 hours daily, a woman was found involved in such works for 7.7 hours a day, around three times higher compared to that of man. This pattern is the same all over Bangladesh. The study found that employed mothers work on average 44 hours a week at their outside job, and a further 49.8 hours at home, while stay-at-home mothers work 91.6 hours a week. In addition to fulltime housework, the 9.8 million employed women are likely to spend a significant amount of their time on housework as well. If the women's household works were counted on the basis of willingness to accept method, the contribution would be equivalent to 87.2 percent of GDP (of FY2013-14). However, if it is based on replacement cost method, the contribution would be 76.8 percent of the GDP of the same fiscal year.

Among those who want to be involved in paid work, about 64.8 percent women told that they could not do paid work due to maintaining family work. Among other reasons lack of available or suitable jobs (51.6 percent), pregnancy as well as to take care of children (40.4 percent) were found as more common reasons.

During a case study in Garati village, Panchagarh we found women inhabitants tend to believe that working alongside with their husband is their duty but they do not know they are also contributing in family income. Even they also cultivate vegetables and rear livestock. Still they suffer from inferiority complex and think that they are burden to their husbands and it's okay to be beaten up by them.

5.1 Growing Contribution in Remittance

Until 2003, only one percent of Bangladeshi labor migrants were female. But now the higher number of female workers going abroad for jobs boosted remittance income. The major destinations are Lebanon, the United Arab Emirates (UAE), Kingdom of Saudi Arabia (KSA), Jordan, Kuwait and Malaysia. Female migrants' jobs included: doctor, nurse, medical technician, cleaner, housemaid, garment worker and factory workers. UAE (27 percent) is the first destination for female migrant workers. And the second destination is Lebanon (24.3 percent).

A study found that 61 percent of women sent money back home once in three months. The average amount of remitting money varies from US\$ 100 to US\$ 1000 per transaction which constitutes up to 83 percent of monthly salary of a woman migrant worker. On the other hand, a study shows that a Bangladeshi women migrant worker on an average can remit US\$500 per transaction and hence a total of around US\$ 2000 per year. Based on this calculation it can be estimated that Bangladeshi women migrant workers might contribute around US\$ 55.412 and US\$ 74.618 million remittances to the national economy in the year of 2011 and 2012 respectively, which is immensely significant to be noted (Islam, Dhungana, 2013). Table 1 shows the pattern of migrant workers.

A women migrant worker's 52 percent of the remitted money contributes to increase food intake of the family and 30 percent is utilized for education and health of children. Migration of women not only contributes improvement of the family members but also brings positive changes for their own selves. Fifty seven percent of the returnee women migrants consider their role in the family is much appreciated and respected whereas 63 percent of women migrant workers influence family decisions. A study showed that 56 percent left behind family maintains savings of remittances. With regards to investment, 39 percent of households of the current women migrant workers have invested remittances on land purchase, followed by 22 percent in small business or expansion in agriculture products (Islam, Dhungana, 2013).

Table 1: Number of Female Workers Employed in Foreign Countries

| Year | Number of person |
|------|------------------|
| 1991 | 2,189 |
| 1992 | 1,907 |
| 1993 | 1,793 |
| 1994 | 1,995 |
| 1995 | 1,612 |
| 1996 | 1,994 |
| 1997 | 1,762 |
| 1998 | 939 |
| 1999 | 366 |
| 2000 | 454 |
| 2001 | 659 |
| 2002 | 1,216 |

| Year | Number of person |
|----------------|------------------|
| 2003 | 2,353 |
| 2004 | 11,259 |
| 2005 | 13,570 |
| 2006 | 18,045 |
| 2007 | 19,094 |
| 2008 | 20,842 |
| 2009 | 22,224 |
| 2010 | 27,706 |
| 2011 | 30,579 |
| 2012 | 37,304 |
| 2013 | 56,400 |
| 2014 | 76,007 |
| 2015 | 1,03,718 |
| 2016 (January) | 11,644 |

Source: BMET, statistics report (January, 2016)

Table 2: Remittance Income from Migrant Workers for Last Five Fiscal Years

| Year/Month | Remittances | |
|------------|----------------------|-----------------|
| | In million US dollar | In billion Taka |
| 2015-2016* | 7487.19 | 584.65 |
| 2014-2015 | 15316.91 | 1189.93 |
| 2013-2014 | 14228.26 | 1105.84 |
| 2012-2013 | 14461.14 | 1156.47 |
| 2011-2012 | 12843.43 | 1018.82 |

(Data up to month of December of financial year 2015-2016)

Source: Foreign Exchange Policy Department, Bangladesh Bank

5.2 Women are the Driving Force of Agriculture

In Bangladesh 12,03,55,263 people are engaged in agriculture and agriculture based industrial activities. Among those people 6,40,91,508 are men which is 53.25 percent of the total population and 5,62,63,719 are women which is 46.75 percent of the total population. About 77 percent of total women employment is

from agricultural sector. Women from rural area participate more in the agricultural sector, specially in operating vegetable gardens, horticulture production, and nursery or even rice husking, and preparation of varied rice products. Kitchen gardening, poultry rearing (sale of eggs, poultry, chicks), goat and sheep rearing, cattle feed; cattle fattening are common work for women. Most of them are unpaid worker whose labor is not reported in the employment documents. Even those women have no idea that they have an impact on national economy.

Table 3: Gender Segregated Contribution of Agriculture in GDP

| Particulars | US\$ (in billions) | Percentage |
|-------------|--------------------|---------------|
| Agriculture | 27.16 | 23.50 percent |
| Male | 10.58 | 39 percent |
| Female | 16.58 | 61 percent |

Source: Bangladesh Bank, November 2010

It is clear that women in agriculture field play a vital role in national economy which is undeniable.

5.3 Government Employment

The number of female employee in government sector is not impressive. Only one fourth of the government employees are women. Only 3.25 percent of the employed women are working in the government sector. According to ‘Statistics of civil officer and staff, 2013’ by Ministry of Public Administration there are 2,88,804 women civil officer and staff working in ministries. The rate is increasing impressively.

5.4 Private Employment

Multinational private companies, telecommunication companies, private banks, life insurance companies and other private companies also hire women employees. Some women prefer working in a private sector to avoid transfer problem and bureaucracy. But only 8.25 percent of the employed women are working in the private sector in Bangladesh. The rate is increasing every year.

During this study among the respondents there are 2 females who are working at Talisman Group as a Welfare officer for last 2 year sand at Epic Group as a security officer. They said that they have 50-50 contributions in their children’s and households expenses.

5.5 Ready Made Garments

Bangladesh has become the second largest clothing exporter country in the world. The readymade garment (RMG) sector earns about 76 percent of the country's export earnings. This sector plays an important role in the national economy. It has contributed significantly to economic growth at the macro level as well as reduced poverty rate at the household level. The main contributors in this sector are women, and most of them are from rural and slum areas. The garment industry of Bangladesh has been the key export division and a main source of foreign exchange for the last 25 years. Currently, the country generated more than \$ 5,00,00,00,000 value of products annually through the export of garments. The sector employs about 3 million workers, of which 80 percent are women (*Empowerment of female garments worker, GTZ*).

RMG factories offer higher wages than most women would earn elsewhere. However, the female workforce has remained "crowded" into lower paid, lower skilled areas. Although not as significant as in other sectors, the wage gap contributes to the feminization of poverty – a female sewing machine operator earns some 71 percent of a male operator's earnings and a female helper about 53 percent of a male helper's earnings. Women are also often the first to lose their jobs in times of reduced demand.

5.6 Textile Sector

The textile sector is booming and gaining a respectable position in export activities. This sector is regarded as one of the main driving forces of the economy of Bangladesh. Currently, the textile industry in Bangladesh accounts for 45 percent of all industrial employment and contributes 5 percent to the total national income. A huge 78 percent of the country's export earnings come from textiles and apparel, according to the latest figures available.

5.7 Handloom Industry

Handloom sector in Bangladesh consists of more than 0.183 million handloom units with 0.505 million handlooms and about 1 million handloom weavers of which about 50 percent are female worker.

A manpower of about one million weavers, dyers, hand spinners, embroiderers and allied artisans have been using their creative skills into more than 0.30 million active looms to produce around 687 million meters of fabrics annually. Production of these handloom fabrics is diffused in numerous production centers all over the country which are linked up by a network of primary, secondary and central markets (Banarjee et. al., 2014).

Table 4: Numbers of Weavers

| Number of Weavers | Number |
|--------------------------|--------|
| Total number of weavers | 888115 |
| Number of male weavers | 472367 |
| Number of female weavers | 415748 |

Source: Rahman M, (2013)

Women from rural and urban areas are now emerging successful in changing their piteous circumstances by sewing garments and engaging in other income generating activities. A number of these women have already achieved economic self-reliance by their own initiatives and external assistance from various organizations that provided training, inputs and helped create marketing facilities to sell their products. It has been estimated that over 50,000 distressed women, mostly divorced and unemployed young girls of rural and urban areas, have become partially self-reliant, while many others have followed suit, supporting their families by making financial contributions.

5.8 Export Processing Zone

In the financial year of 2010-11 goods worth US\$ 3697.62 million was exported from the 8 EPZs. During the last 10 years BEPZA's annual average contribution to national export stands at 17.23 percent. BEPZA have a total of 369 active enterprises and 3, 06,423 Bangladeshi factory workers as on June 2011, and 64 percent of who are women (*BEPZA Annual report 2010-11*). While EPZs are significant employers of women, these jobs tend to be concentrated at the level of assembly line workers. But women's participation drops significantly at the staff and officer levels.

Table 5: Number and Percentage of Female Local Workers in CEPZ and DEPZ at Job Levels

| Zone | Local Worker (minimum hourly wages) | | | Local Staff (higher hourly wages) | | | Local Officer (Executive Level) (salary wages) | | |
|------|--|--------|-------------------------------------|--------------------------------------|-------|-------------------------------------|---|-------|-------------------------------------|
| | Female | Male | Female as percentage of total | Female | Male | Female as percentage of total | Female | Male | Female as percentage of total |
| CEPZ | 92,451 | 46,842 | 66 percent | 1,502 | 5,227 | 22 percent | 1,802 | 6,735 | 21 percent |
| DEPZ | 38,560 | 30,512 | 56 percent | 840 | 4,040 | 17 percent | 291 | 2,959 | 9 percent |

Source: BEPZA Data, December, 2010

During another case study in Dhaka EPZ some officials, managerial body, workers were interviewed and working environment was carefully observed. It was identified that working environment of EPZ is not free from gender discrimination which is a barrier for women to contribute more in national economy. In Talisman group & Epic group 75 percent of labor is women while 2 percent in managerial body is women. The total female workers percentage is 57 and male is 43 percent. There is huge gender discrimination in managerial body. Women employees tend to have hard time proving themselves. Their male colleagues believe management jobs are not for women because they are not capable of taking responsibilities due to family responsibility. The ratio of women and men losing jobs is 3:2.

5.9 Tea Manufacturing Sector

Tea sector plays a significant role in the national economy through employment generation; export earnings as well import substitution and poverty reduction in rural areas. There are 166 tea estates in Bangladesh which employ up to 300,000 plantation workers. 75 percent of women are involved in this sector and there is a belief that they are more efficient in plucking than men; however they are paid less than men. They are often paid low wages, less than US\$1 for an entire day's work, from sunrise to sunset.

In Panchagarh over 8,500 extremely poor, unemployed and distressed women change their fortune through taking job in tea garden.

5.10 ICT & IT Sector

Women entrepreneurs recently started to explore IT sectors. They are creating job opportunities for other women as well. A perfect example is Taslima Miji, one of best entrepreneur in Bangladesh. She is the founder and CEO of Tech mania– a company based in Dhaka, Bangladesh, that provides hardware and hardware related services, i.e. computer, computer assembly, networking and computer related peripheral items and troubleshooting of various items, etc. In addition Bangladeshi woman entrepreneurs are successfully developing markets in handicrafts and business sectors (See Appendix).

5.11 Comparative Analysis between Urban and Rural Area

The first case study was based on urban paid workers of EPZ in Dhaka District while the other one was based on rural unpaid workers of small village Garati in Panchagarh.

Subjects of 1st case study knew they are contributing in national economy and family. They received minimum education and want to do more in their career. We interviewed some higher level working women too who are determined to change women's present situation.

On the other hand subjects of second case study cannot even think of these things. They suffer from low self-esteem. They have no idea that they are contributing in national economy. They have no idea about their rights. They have no idea they deserve better life and equality.

It is clear that urban areas and rural areas need different kind of changes in society. But women from both areas are contributing in national economy whether they know or not. Government should create more work opportunities for women for both places. This will help to increase development in national economy.

5.12 Barriers Women Encounter and their Solution

After the completion of this study we can safely conclude that women are contributing as much as men in National Economy. But they are facing barriers and obstacle on their way. Socio-cultural norms & restriction, religious restriction, prejudice and lack of family support are the major barriers they encounter. As a result most of the women suffer from lack of self-confidence. On the other hand working women face barriers like communication problem, discrimination in salary and other facilities, lack of cooperation from male colleagues, eve teasing, sexual harassment, and gender discrimination, unfair overtime work, poor health care and work environment. Also maternity leave is not so popular. Most of the jobs in the garment industry and other labor oriented sectors are temporary in nature. Workers are hired when needed and fired when the need is over. Therefore, garment workers suffer greatly from job insecurity. Lack of proper education and training is the reason for which they cannot get hired into managerial position.

If the Government removes those barriers and obstacles, then they will be able to contribute more. By ensuring proper education and training, increasing awareness, enacting laws against eve teasing and sexual harassments government can help the working women. If every industry or company has its personal vehicles for women then the transport problem can be solved. They should remove discrimination from work place and create a professional working environment. Maternity leave and day care facilities should be compulsory. Labor oriented sectors should ensure job security, equal wages and other facilities. They should also honor the labors' right. But there are some barriers that can only be removed if we change our attitude towards women.

6. Conclusion

This study is based on women's contribution in national economy of Bangladesh. We analyzed the last decades to show how women's contribution in national economy is increasing gradually. This area of study is too wide to cover in one work that makes it hard to cover every sector of women's work thoroughly. So

we tried to explore some major sectors briefly. Our first focus was on unpaid workers and women's share in remittance because these two sectors always get overshadowed by Ready Made Garments (RMG) sector. Besides this if unpaid work is added the additional value of the works done by women would change the GDP graph radically. In agricultural sector women are major work force and they have recently outrun men's contribution in this sector. Numbers of women under Government employment are increasing slowly and in private sector employment of women is reaching at a high level. We explored some major sectors that hire women workers. Like Tea manufacturing sector, Textile sector, EPZ, ICT and IT sector and last not the least RMG sector. Seventy five percent of EPZ and RMG sector's labors are women. RMG sector played a crucial role in empowering women for the last two decades which helped our national economy to rise with women's involvement. Tea manufacturing sector is employing extremely poor rural women. Government is taking steps to employ a large number of women in ICT and IT sector. We observed that women have a huge portion of contribution in our national economy which even they cannot imagine. In our society women do not get the respect which they deserve and they are not concerned about the matter. Most of the women have no idea about their contribution in the society. Government should include unpaid work in GDP and raise awareness about their contribution. That will increase their confidence and they will be motivated to contribute more in the national economy. Women have enormous contribution and they can contribute much more if they are provided with proper education, training and opportunities. Government should try to ensure those facilities for women to develop.

References

- Bangladesh Sangbad Sangstha, 2015 Tea sector changes fortune of 8,500 distressed women. Available from <http://www.bssnews.net/newsDetails.php?cat=2&id=506974>
- Bangladesh Bank, 2016 Remittance data 2015-2016. Available from <https://www.bb.org.bd/econdata/wageremittance.php>
- Banarjee S, Mujib M and Sharmin S, 2014 Status of Handloom Workers and Causes of Their Migration: A Study in Handloom Industry of Tangail District. Bangladesh. *Research on Humanities and Social Sciences* 4(22): 157-158.
- Bayes A, 2015 Women in agriculture. The Financial Express, 22 (245)
- BBS, 2012 Labour Force Survey 2010. Bangladesh Bureau of Statistics. Available from <http://www.bbs.gov.bd/userfiles/Image/Survey%20reports/Labour%20Force%20Surve2010>.

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- BBS, 2015 Economic Census 2013. Bangladesh Bureau of Statistics. Available from <http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/EcoCen13/FinalReport%20Part%201.pdf>
- BBS, 2011 Population census 2011. Bangladesh Bureau of Statistics. Available from http://203.112.218.69/binbgd/RpWebEngine.exe/Portal?BASE=HPC2011_short&lang=ENG
- Bangladesh Export Processing Zone Authority (BEPZA) Annual report 2010-2011. Available from http://epzbangladesh.org.bd/files/reports/BEPZA_2010-2011.pdf
- BMET, 2016 Statistical report on overseas employment of female workers from 1991 to 2016. Bureau of Manpower, Employment and Training. Available from <http://www.bmet.gov.bd/BMET/viewStatReport.action?reportnumber=39> Bureau of Manpower, Employment and Training
- CPD, 2004 Women's Contribution to Rural Economic Activities: Making the Invisible Visible. Available from <http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN021438.pdf>
- Country Meters, 2016 *Bangladesh population clock*. Available at <http://countrymeters.info/en/Bangladesh>
- Efroymsen D, Biswas B and Ruma S, 2007 The Economic Contribution of Women in Bangladesh through their Unpaid Labor. WBB Trust-Health Bridge. Available from <http://healthbridge.ca/Bangladesh%20summary%20report%20final.pdf>
- Forum, 2012 The Daily Star. Women in the Workplace: Gender-specific challenges in the corporate world.
- Hossain M and Bayes A, 2009 *Rural Economy & Livelihoods. Dhaka: A H Development and Publishing House.*
- Hossain A, 2011 Socio-Economic Obstacles of Women Empowerment in Rural Bangladesh: A Study on Puthia Upazila of Rajshahi District. *Research on Humanities and Social Sciences*, 1(4): 1-10
- Islam N Women Migrants Situation (Profile of women migrants, causes, problems & prospects of migration). Bureau of Manpower, Employment and Training. Available at [http://www.bmet.gov.bd/BMET/resources/Static%20PDF%](http://www.bmet.gov.bd/BMET/resources/Static%20PDF%20)

- 20and%20DOC/publication/Survey%20on%20Female%20migrant.pdf
- Islam S and Dhungana MK, 2013 Gender Dimension of Remittances: A Study of Bangladeshi Women Migrant Workers in Lebanon. OKUP (Ovibashi Karmi Unnayan Program). Available from <http://okup.org.bd/wp-content/uploads/2013/06/Gender%20Dimensions%20of%20Remittances.pdf>
- Khatun F, Khan TI and Pervin S, 2014 Estimating Women's Contribution to the Economy: The Case of Bangladesh. Centre for Policy Dialogue. Available from <http://cpd.org.bd/wp-content/uploads/2014/10/Estimating-Women%E2%80%99s-Contribution-to-the-Economy-Study-Summary.pdf>
- MIDAS, 2009 Women Entrepreneurs in SMEs: Bangladesh Perspective. Micro Industries Development Assistance and Services.
- Ministry of Expatriates Welfare & Overseas Employment An article. Available from http://www.mof.gov.bd/en/budget/14_15/gender_budget/en/16_65_Expatriate's%20Welfare%20and%20Overseas_English.pdf
- Ministry of Textile and Jute An article. Available from http://www.mof.gov.bd/en/budget/13_14/gender_budget/en/24Chapter%2026_41_Mini-stry%20of%20Textile_English.pdf
- Rahman K, 2013 Women in Labor Force. *Unnayan Onneshan*. Available from http://www.unnayan.org/documents/bookschapter/women_in_labour_force.pdf
- Rahman M,2013 Prospects of Handloom Industries in Pabna, Bangladesh. *Global Journals Inc*13 (5): 15
- Sikdar MH, Sarkar SK And Sadeka S, 2014 Socio-Economic Conditions of the Female Garment Workers in the Capital City of Bangladesh. *International Journal of Humanities and Social Science* 4 (3):173-179
- Yunus M, 1998 Banker to the Poor. *New York: Public Affairs*

Appendix A

Women in Handicrafts

Some areas of Bangladesh are developed with some special handicraft products, like Dhamrai for brass ware items, Comilla for khadi, Sonaraon for traditional handicrafts, Rajshahi for silk items, Narayaganj and Mirpur in Dhaka for Jamdani Sari, Sylhet for ShitalPati are some example of famous local arts and crafts. In these sectors women's contribution are beyond measure.

Craft products at a glance-

NakshiKantha (embroidered quilt)

NakshiKantha (embroidered quilt), a very popular form of handicraft, is said to be indigenous to Bangladesh. The rural women of the country put together pieces of old cloth with crafty stitches to prepare these quilts to be used in the winter.

Jamdani

Jamdani, one of the oldest forms of cottage industry in Bangladesh, was once a dying trade. It was successfully revived due to the pioneering work of entrepreneurs such as **Monira Emdad**. Women entrepreneurs like her are keeping this heritage alive. Many boutiques owned by business women made jamdani popular all over the country.

In two villages under Iswardiupazila of Pabna district, earlier, few women of these two villages were involved with this profession. But currently, one or two women of almost every house are engaged in this industry. According to the villagers, more than 15 factories have so far been set up in these villages and the produces are supplied to Dhaka and other nearby district markets. They take five to seven days for ornamenting a piece of sari and charge Tk.1,000 to 6,500 depending on its type, size, design and other criteria.

Women in Business Sector

The majority (84.83percent) of the women entrepreneurs managed their business by themselves. Of them 98.67percent were from Khulna, 91.67percent were from Sylhet, 85.42 percent from Rajshahi, 81.11 percent from Chittagong, 80.32 percent from Dhaka and 78.89 percent from Barisal. (*MIDAS 2009, "Women Entrepreneurs in SMEs: Bangladesh Perspective" sponsored by SME Foundation*)

Small and Medium entrepreneur

In an interview, Shamssunnahar Munni who is a grocery shop owner said she is running her business for last 10 years. Medium businesses have a wider range than small business. These business women tend to hire people from outside their family.

Large entrepreneur

Many of today's women large entrepreneurs started with a small business. But their hard work has turned those businesses into something huge that can help others.

Some renowned entrepreneurs are:

Taslima Miji is the founder and CEO of "Techmania"— a company, based in Dhaka, Bangladesh, that provides hardware and hardware related services, i.e. computer, computer assembly, networking and computer related peripheral items and troubleshooting of various items etc.

Samira Zuberi Himika, architect, founder & Managing Director "team engine". "Team engine" is a communication and a campaign hub for social good.

Sabila Enun is an entrepreneur and a woman - a combination that our society does not see often. Currently, she's working as a Project Manager at "DCastalia".

BiBi Russell is the founder of "Bibi Productions"— a world renowned fashion house working with crafts people in Bangladesh.

Selima Ahmad is president and founder of the "Bangladesh Women Chamber of Commerce and Industry (BWCCI)", which represents the interests and supports the initiatives of women entrepreneurs.

Ivy Huq Russel a former investment banker, Founded "Maya" with a vision to empower women through giving them access to information and a shared community. She is also the Managing Director of Maya.

Relationship between GDP Growth and Greenhouse Gas Emissions: The Case of Bangladesh

Sazia Afrin*
Mohammad Hanif**

Abstract: *The present empirical study investigates the relationship between the emissions of three major greenhouse gases namely Carbon dioxide (CO₂), methane and nitrous oxide and GDP growth of Bangladesh for the period of 1972-2017. The data set reveals that overall there is an increasing trend in all the variables. The growth rate of GDP was only 9.57% in 1990 which increased to 12.41 % in 2017. Some line graphs are drawn which are postulating the same result for all the variables. A log-linear model has been established to see how economic growth and emissions are related with each other. The resulting findings are not astounding which suggest that there exists a positive and significant relationship among them. It bears testimony to the historical truth that growth leads to pollution or without pollution, development is not possible. The correlation of GDP with individual independent variable is also very high confirming the aforementioned relationship. The paper attempts to explore, the causes behind this positive relationship and delivers some propositions so that the impacts can be mitigated which in turn may lead to a green and contamination free environment.*

1. Introduction

The relationship between economic activities and environment degradation with a loss of biodiversity is apparent since the industrial revolution. The exhaustion of ozone layer swells the average temperature which in turn leads to a melting of ice and consequently raises the level of sea water worldwide. The concern that if this carries on, the low land of the earth will be submerged. Therefore, the main challenge of the 21st century is saving the globe from the adverse effects of climate change, through diminishing greenhouse gases emissions i.e carbon dioxide(CO₂), methane (CH₄), nitrous oxide (N₂O), hydro fluorocarbons (HFCs), per fluorocarbons (PFCs),and sulphur hexafluoride (SF₆);which are mainly responsible for changing the earth's energy balance, leading to a warming or cooling effect over time. From 1990 to 2015, the total warming effect from greenhouse gases added by humans to the earth's atmosphere increased by 37 percent (Environmental Protection Agency). The current global atmospheric

* Assistant Professor, Department of economics, Stamford University Bangladesh

** BSS Student, Department of Economics, Stamford University Bangladesh

concentrations of carbon dioxide are unprecedented compared with the past 8,000,000 years (Environmental Protection Agency). But till now there appears to exist non-avoidable or less avoidable positive relationships among economic growth and GHGs, because greenhouse gases are emitted with the pursuing of economic activities.

International communities are raising their concern through the series of climate summit. UN framework convention on climate change (UNFCCC) was adopted at the 1992 Rio Earth Summit. As a result, conference of parties (COP) 1 was held in 1995 and it is being followed in every year. From COP we found several agreements about actions among parties like, Kyoto protocol, Bali Action Plan, Green Climate Fund (\$ 100 billion), Cancun Agreements and at last Paris Agreement in 2015 (Center for Climate and Energy Solutions). The main focus of all the agreements and plans is about commitment of all nations to take steps to mitigate GHGs emissions.

Bangladesh is a developing country with \$250 billion GDP. Bangladesh has maintained its GDP growth above 6 percent during the last decade and accelerates to forward (Bangladesh economic review, 2017). At the same time the growth rate of CO_2 , methane, and nitrous oxide were 8%, 1.46%, and 2.38% respectively portraying that for Bangladesh the decision to reduce GHGs will lead to declining GDP growth. Thus implementation of international agreement is only possible for Bangladesh if alternative options are available.

According to Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report, CO_2 has contributed the most to global warming and could have atmospheric lifetime of estimated between 30-95 years whereas methane and nitrous oxide have mean atmospheric lifetime of 12 years and 114 years respectively (Twumasi, 2017). The main focus of this paper is to explore the dependency of GDP of Bangladesh on the abovementioned three dominant GHG gases (carbon oxide, methane, nitrous oxide) and the possible options to maintain economic growth.

2. Objectives of the Study

The goals of this research are to perceive the existing state of (CO_2), methane and nitrous oxide emissions and their impact on GDP (current price) of Bangladesh. In particular, the study aims at examining whether there exist statistically significant relationships among the selective greenhouse gases excretion and GDP of Bangladesh and put forward some recommendations so that the influence of the release of these gases on GDP can be diminished.

3. Literature Review

Now a day's Economists are truly concerned about economic growth as well as protection of environment at the same time. They are trying to find out the best possible point where energy will be continued to use with less emission of climate devastating gases. Numerous empirical studies have been carried out focusing on energy consumption and economic growth over the past 25 years.(According to international journal of Environmental Research and Public Health)

Baran Doda (2013) by using panel regression analysis for 110 countries have found potentially important consequences for long-term emissions projections, and showed that, during the periods where cleansing processes were executed a decline of GDP was observed.

Wen- Cheng Lu (2017) found some quadratic relationships which have been revealed between GHGs emissions, energy consumption and economic growth, consistent with the environmental Kuznets curve for 16 Asian countries.

JO-Hui Chen and Yu-Fang Huang (2013) found that there exists positive long-run relationships among CO_2 emissions, Electric power consumption, Energy use and GDP by using FMOLS and DOLS technique.

Eunho Choi, et al. (2010) by using Environmental Kuznets Curve unveiled that the estimated EKC can have different temporal patterns on the bases of national characteristics, where the sample countries were China, Japan and S. Korea.

Janifar Alam (2014) stated that, the existence of "U" shaped EKC does not hold good for Bangladesh. It is also noticed that a faster structural shift from agricultural to non-agricultural sector and emergence of the service sector as a ruling part of the economy, CO_2 emissions show uprising trend.

Most of the studies mentioned above are regional and international level studies. Country- specific studies are very scanty. The focus of this paper is to examine whether there exists a statistically significant association amid GHGs emissions and GDP of Bangladesh, and to put forward some recommendations for policy makers. This type of study has not yet been accomplished in the Bangladesh context.

4. Methodology

This study is based on secondary data. All the data have been collected from World Bank. Also a number of published journal articles, newspapers and websites have been consulted; all of which are listed in the reference section at the end of the text. The data of CO_2 , methane and nitrous oxide emissions have been extrapolated for the period of 2013 to 2017 because of their unavailability in world Bank data bank. Although it may be possible to gather them from other

sources but the backdrop is the variability in the unit of measurement and to keep the measurement unit same they are extrapolated. Some econometric analyses have been carried out to explore the relationships among GDP at current price, CO_2 , methane and nitrous oxide discharges. The following regression model has been introduced to scrutinize the aforementioned relationships:

$$\ln GDP = \beta_0 + \beta_1 \ln CO_2 + \beta_2 \ln \text{methane} + \beta_3 \ln \text{nitrous oxide} + U_i$$

Where,

$\ln GDP$ = Gross Domestic Product at current price (Value in billion dollar)

$\ln CO_2$ = Carbon dioxide emissions (Value in kilo ton)

$\ln \text{methane}$ = Methane emissions (Value in kilo ton of CO_2 equivalent)

$\ln \text{nitrous oxide}$ = Nitrous oxide emissions (Value in thousand metric ton of CO_2 equivalent)

U_i = Error term

β_0 = Constant term

β_1 , β_2 , and β_3 = Coefficients of respective variables

N.B. \ln stands for natural logarithm.

4.1 Identification of Key Variables

GDP: It refers to the market value of all officially recognized final goods and services within the territory of a country in a given period.

CO_2 , Methane, and Nitrous oxide emissions: They refer to the amount of released carbon dioxide, methane and nitrous oxide through human activities.

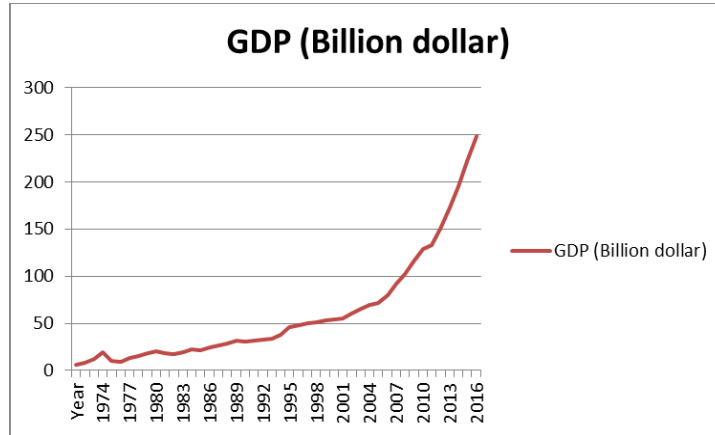
5. Analysis and Findings of Empirical Results

5.1 Trends of GDP and Selective Greenhouse Gases

From the data set, we see that the GDP of Bangladesh experiences a positive growth every year except some earlier periods like 1976, 1977, 1982, 1983, 1986 and lastly in 1991. Since its inception as an independent country in 1971 it is growing over time starting with a GDP of only 6.2882 billion US\$ in 1972 which is now 248.9 US\$ in 2017. At the same time GHGs also show similar trend as GDP. Although it encountered a high positive growth of 29% in 1972, the growth rate of carbon dioxide varies almost from 1% to 14% with some negative growths in 1983, 1989, 1993 and in 1998. The overall growth is positive. The same is also true for methane and nitrous oxide emissions (see Appendix 1).

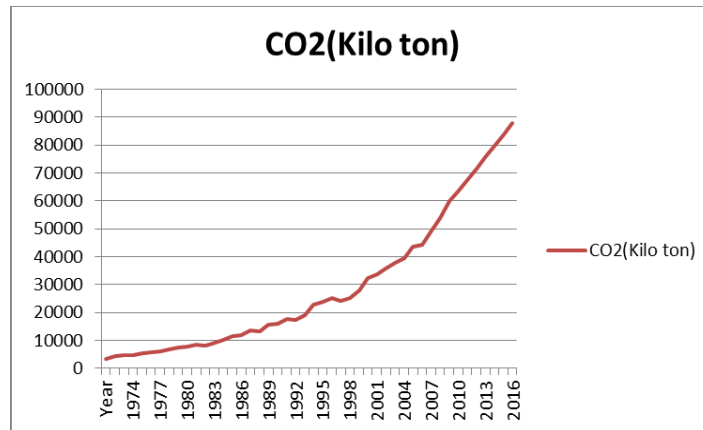
5.2 Graphical Presentation of the overall Performance of Selected Variables

Graph 1: Line Graph of GDP



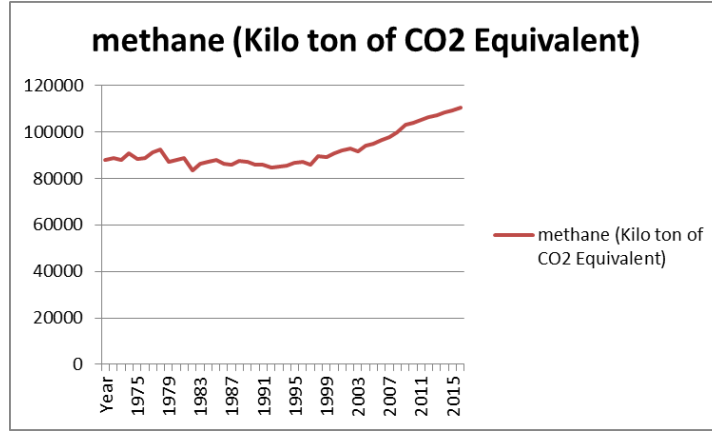
The graph is delineating that the GDP although fluctuates a little up to 2001, but after that it has been increasing sharply. The calculated trend values by the semi average method are 20.587 and 100.075 which tells us that the average of the second half is almost fivefold of the first half of the periods, ensuring the upward trend.

Graph 2: Line Graph of Carbon Dioxide Emissions



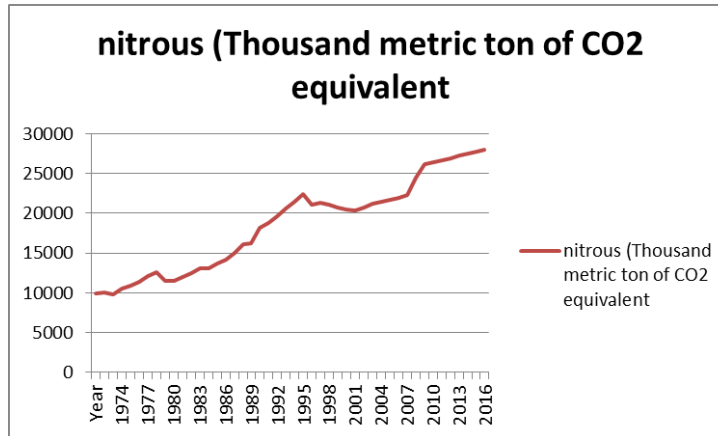
The graph of CO_2 emissions is almost J shaped implying that it grows exponentially over the time. The carbon emission in 1972 was only 3509.319 kilo ton which reached to approximately 87967.63 kilo ton in 2017. The trend values by the semi average method are 9970.892 and 48218.494, a more than fivefold increase in the last half of the period.

Graph 3: Line Graph of Methane Emissions



From the graph it is evident that there are much more fluctuations in the data up to 2004 after which it has been mounting. However, the overall trend is positive as the trend values by the semi average method are 87550.4896 and 96875.573 respectively for the two sub periods.

Graph 4: Line Graph of Nitrous Oxide Emissions



It is conspicuous from the graph that the overall trend is climbing, starting with only an ejection of 9934.4 thousand metric ton in 1972 and ascended to about threefold increase to 27990.81 in 2017. The trend values by the semi average method are 13632.5 and 23446.843 respectively.

Note: The formula for semi average method (there are total 46 years) is noted below:

Average of first 23 years = Sum of the values of first 23 years/23

Average of last 23 years = Sum of the values of last 23 years/23

If the value of the last one exceeds that of the first one then we can say the data set is upwardly moving, and if the second one is less than the first then we can conclude that the data set is downwardly moving and again if the two trend values are same then we can say there is no change in the data.

5.3 Outcomes of the Multiple Regression Analysis

$$\ln\text{GDP} = -47.036 + 0.149 \ln\text{CO}_2 + 2.883 \ln\text{methane} + 1.661 \ln\text{nitrous oxide}$$

$$\text{se} = (5.2835) \quad (0.0696) \quad (0.4799) \quad (0.1902)$$

$$\text{t value} = (-8.90) \quad (2.15) \quad (6.01) \quad (8.73)$$

$$\text{p value} = (0.000) \quad (0.038) \quad (0.000) \quad (0.000)$$

$$n = 46 \quad R^2 = 0.9595 \quad \text{adjusted } R^2 = 0.9566$$

The above regression equation establishes the causal relationships among GDP at current price; carbon dioxide, methane and nitrous oxide emissions. It is obvious from the regression results that there prevails a positive and significant relationship between the regressand and the regressors.

The above equation is depicting that the coefficient of carbon dioxide is positive implying that if carbon releasing increases by 1% then GDP also increases by 0.15% which is statistically significant at 3.8% significance level. Accordingly, if methane and nitrous oxide emissions increase by 1% then GDP also increases by 2.88% and 1.66% respectively both of which are statistically significant at 1% significance level. It implies that, the impact of methane and nitrous oxide discharge on GDP outbid the impact of CO_2 release which is very flabbergasting as CO_2 is the main component of GHGs. According to IPCC (2014) for global GHGs emissions, CO_2 comprises of 76% of GHGs followed by 16% methane, 6% nitrous oxide and only 2% of all other gases.

Overall, the regression produces a very expected result that the emissions contribute positively on growth advocating the findings of all other previous papers. Chen and Huang (2013) found that there are positive long-run relationships among CO_2 emissions, Electric power consumption, Energy use and GDP. Numerous other papers also support this relationship.

Both R^2 and adjusted R^2 of the model are very high and indicate that about 95% variations of the dependent variable are explained by the predictors. It may be concluded that to enhance GDP growth we need to expand GHGs emissions or may be GDP growth is not possible without their emissions. In this context, the government as well as the policy makers should be very cautious in designing economic policy to keep our environment more livable.

5.4 Correlation of GDP with other Independent Variables

Table1: Karl Pearson Coefficient of Correlations between Dependent and Explanatory Variables.

| | CO_2 | Methane | Nitrous Oxide |
|-----|--------|---------|---------------|
| GDP | 0.9733 | 0.9304 | 0.8499 |

The Karl Pearson coefficient of correlation between GDP and CO_2 emissions is the highest among all the three which is approximately 97%. It means, there exists a high degree of positive correlation (more than 50%) between the two. The coefficient of correlation between the GDP and methane emissions is 0.9304 apparently suggesting a strong relationship among them. The above table demonstrates that the GDP and nitrous oxide emissions are significantly correlated with each other as the coefficient of correlation is 0.8499, also exceeding the moderate level of correlation of 50%. So, it can be concluded that, all the independent variables are strongly and positively related with the dependent variable.

5.5 Possible Causes behind this Correlation

Greenhouse gases enter in our atmosphere in two ways: natural process and human activities. The main human sources of GHGs are: fossil fuel use, deforestation, intensive livestock farming, use of synthetic fertilizers and industrial processes. These human activities are crucial for producing goods and services, also driving the economy forward.

Carbon dioxide

Eighty Seven percent of all human produced CO_2 emissions come from the burning of fossil fuels like coal, natural gas and oil. Other sources include deforestation 9%, and industrial processes such as cement manufacturing 4% (system science data discussions 5,no-2). In Bangladesh during the last two and a half decades we are burning a significant amount of fossil fuels which accelerated our GDP and GHGs emissions as well.

Table 2: Sector wise demand for natural gas in Bangladesh for the year 2017

| Sector | Billion cubic feet |
|---------------|--------------------|
| Power | 362.94 |
| Captive power | 120.90 |
| Industry | 108.22 |
| House hold | 90 |

| | |
|------------|-------|
| CNG | 59.10 |
| Fertilizer | 62.05 |

Source: Petrobangla, Energy and Mineral Resources Division

Table 3: Coal demand in Bangladesh (000, metric ton) for the year 2017

| | |
|------------|-------|
| Power | 9,905 |
| Brick kiln | 4,129 |

Source: Bangladesh Economic Review, 2017

Table 4: Consumption of petroleum in Bangladesh (metric tons) for the year 2007-08

| | |
|---------------------|-----------|
| Agriculture | 702,767 |
| Industrial | 153,304 |
| Power | 264,455 |
| Transport | 2,040,026 |
| Domestic and others | 465,722 |

Source: Towards revamping power and energy sector plan, Finance division

Bangladesh loses 0.18% of its forests annually (Dhaka tribune) due to economic activities like creating agricultural land, industrial land, supplying wood for furniture as well as fuel etc. At present one of the leading contributors of GDP is the industry sector. It indicates that we are gradually driving our economy from agriculture to industry, which is also greatly responsible for emission of CO_2 . All these sectors and activities are the catalysts of our growing GDP.

Methane emissions

Activities such as fossil fuel production and intensive livestock farming are the primary cause of the increased CH_4 concentrations in the atmosphere. Together these two sources are responsible for 60% of all human CH_4 emissions. Other sources include landfill and waste (16%), biomass burning (11%), rice agriculture (9%) as well as bio fuels (4%) (Contribution of anthropogenic and natural sources to atmospheric methane variability “nature 443.no-7110).

Almost half of all global methane emissions come from belching livestock and their manure, making livestock farming a significant contributor to climate change. According to economic review of Bangladesh 2017, livestock population in Bangladesh estimated 239.35 lakh cattle, 14.78 lakh buffaloes 259.31 lakh

goats, 34.01 lakh sheep, 2751.83 lakh chicken and 540.16 lakh ducks. All these are the part of our GDP.

Extracting, transporting, refining and processing oil and natural gas requires large amounts of energy and involves considerable risks of leakage of fugitive emissions at each stage, particularly as the industry looks to drill in more demanding environments such as deep offshore. In fiscal year 2016-17 Bangladesh produced 971.6 billion cubic feet natural gas. This is also a leading contributor of GDP.

Landfill sites produce greenhouse gases because rotting organic waste like food waste emits methane. According to waste Atlas (2012), waste generation in Bangladesh is around 22.4 million tons per year. This amount is bigger at this time. In FY 2016-17, we also produced 338.13 lakh metric tons rice, which also helps to generate methane emissions. This is the result of our growing GDP.

Nitrous oxide emissions

Human activities such as agriculture, fossil fuel use and industrial process are the primary causes of the increased N_2O concentrations in the atmosphere. Together these sources are responsible for 77% of all human N_2O emissions. Other sources include biomass burning (10%) aviation, atmospheric deposition (9%) and human sewage (3%) (Couplings between Changes in the Climate System and Biogeochemistry. In: Climate Change 2007).

Modern agriculture relies heavily on fertilizers and pesticides, which release nitrous oxide into the air, nitrous oxide is 300 times more potent than carbon dioxide as a warming agent (What's your impact, a voluntary organization). Bangladesh is well known for its agricultural production. In FY 2016-17 we produced significant amount of rice, wheat, maize and other agricultural products, which has great contribution in our GDP.

Table 5: Major Agricultural Crop Production in Bangladesh

| Product | Amount (lakh metric ton) |
|---------|--------------------------|
| Rice | 338.13 |
| Wheat | 14.23 |
| Maize | 35.78 |

Source: Bangladesh Economic Review, 2017

The manufacture of industrial chemicals and petrochemicals which provide the building block for plastics, textiles, dyes and resins, detergents, fertilizers and tens

of thousands of other products takes place at very large scale in chemical and petrochemical plants. According to BBS in FY 2016-17 Bangladesh produced a good amount of industrial products.

Table 6: Industrial Production in Bangladesh

| Industry | Amount(corer tk) |
|-------------------|------------------|
| Small and cottage | 33945.8 |
| Medium-large | 163819.5 |

Source: Bangladesh Economic Review, 2017

Aircraft emissions of water vapor nitrous oxides, aerosols and CO_2 at altitude could be two to four times stronger than emissions of CO_2 alone. According to civil aviation authority of Bangladesh in FY 2016-17 the revenue of income is 1556.3 corer taka. We have 3 international and 7 domestic airports. BBAL have 12 aircrafts, BAF have 217 aircrafts (flight global insight) UAF have 11, and US bangle have 6 aircrafts. The fleet of aircrafts has great contribution in GDP as well as nitrous oxides emissions.

6. Recommendations

Climate change is a global phenomenon. World leaders have already set SDGs, officially known as “transforming our world: the 2030 agenda for sustainable development”. Among the 17 goals of SDGs, goal no 7, 12 and 13 are directly related with GHGs emission and environmental cost, and goal no 11, 14 and 15 are related with the consequences of GHGs emissions. Bangladesh integrated the 2030 agenda in its 7th five year plan (2016-2020), which includes 82% of this agenda (SDGs). As an influential and responsible global partner Bangladesh has signed several agreements like Kyoto protocol, convention on bio-logical diversity- 1992, COP-15, COP-21, etc. All the above agreements and development goals imply that Bangladesh is strongly committed to reduce its GHGs emissions and protecting environment. But, this empirical study shows that we are not ready to do this (because of strong relationship with GDP and GHGs). At the same time we may have options to follow different strategies for continuing our economic activities with better protection of our environment as follows:

Increasing nuclear power plant: Nuclear energy is the world’s largest source of emission- free energy. The first commercial nuclear power started operation in 1950s in Soviet Union. According to World Nuclear Association (WNA), nuclear energy now provide about 11% of the world’s electricity from about 450 existing

power reactors, and 65 more are under construction. Bangladesh just started its new phase with the hand of 2 reactors. But we need 15 to 18 reactors to fulfill our demand.

Increasing use of renewable energy: Bangladesh has 580 km coastline. It is great opportunity for us, if we want to use wind and tides power. Already Bangladesh started to use of solar power. It is time to operate big plant on the basis of PPP. And at the same time we need to provide financial support, technical support and training to use solar power in agricultural and other sectors.

Providing incentive for import and use electric vehicle: According to IEA the global electric vehicles stock was 2 million in 2016. And it is estimated that, within 2020 it will be 20 million, and within 2025 the stock of Electric Vehicle (EV) will reach to 40 million. Now the biggest user of EV is China because of government subsidy policy. It will be a great step to reduce GHGs emissions, if Bangladesh could adopt this kind of policy.

Others relevant measures which may be included for consideration:

- Zero tax policy for importing environment friendly capital machineries.
- Increasing non-natural forest from 0.20 million hectares to 0.60 million hectares and implementation of forest protection law.
- Making action plan and implementation for combined waste management system.
- Green industry policy.
- Financing for eco friendly technology.

7. Conclusion

The research was directed at detecting how GDP growth and prime GHGs emissions are related and how influential they are. The findings suggest that the economy grows with an emerging pattern of discharge resulting in pollution which leads to climate change. We know, energy plays a crucial role for the advancement of a country. Without relying on energy, it is not possible to maintain sustainable growth: the supreme concern of our government. In this backdrop, if the government fails to initiate and promote green as well as enduring energy policy, it will have an adverse effect on the climate of our country. Being very cautious about the issue, the experts of many countries advocated for decreasing the GHGs emissions in the 15th United Nations Climate Change Conference (COP15) in Copenhagen, 2009. They agreed not to exceed the limit of emissions 2°C by 2100. Following their path, Bangladesh also needs to implement sophisticated technology for innovating green energy and urge developed countries and international partners for necessary funding if needed.

References

- Alam, J., 2014. On the Relationship between Economic Growth and CO_2 Emissions: The Bangladesh Experience. *Journal of Economics and Finance (IOSR-JEF)*, Volume 5, Issue 6, PP 36-41. www.iosrjournals.org
- Chen, J. H., & Huang, Y. F., 2013. The Study of the Relationship between Carbon Dioxide (CO_2) Emission and Economic Growth. *Journal of International and Global Economic Studies*, 6(2), 45-61
- Doda, B., 2013. Emissions-GDP Relationship in Times of Growth and Decline. *Grantham Research Institute on Climate Change and the Environment*, working Paper No. 116
- Govt. of USA 2017. Environmental protection Agency, Government of United States. www.epa.gov
- Economic Research, 2018. Economic Research, Allianz, Insurance and Asset Management Company. www.allianz.com
- Flightglobal, 2016. Flightglobal, (world-class aviation and air travel data & analytics). www.flightglobal.com
- GOB, 2017. Statistical Year Book, Bangladesh Bureau of Statistics (BBS).
- GOB, 2017. Bangladesh Economic Review, Finance Division, Ministry of Finance
- UN climate talks, 2015. History for climate and energy of UN climate talks, (the center UN climate talks solutions). www.e2es.org
- IPCC (Intergovernmental Panel on Climate Change), 2013. Climate change 2013: The physical science basis. *Working Group I contribution to the IPCC Fifth Assessment Report*. Cambridge, United Kingdom: Cambridge University Press
- Lu, W. C., 2017. Greenhouse Gas Emissions, Energy Consumption and Economic Growth: A Panel Cointegration Analysis for 16 Asian Countries. *International Journal of Environmental Research and Public Health*, 2017, 14, 1436; doi: 10.3390/ijerph14111436
- Sarkar, M. S. K., Sadeka, S., Sikdar, M. M. H., Badiuzzaman, 2015. ENERGY CONSUMPTION AND CO_2 EMISSION IN BANGLADESH: TRENDS AND POLICY IMPLICATIONS. *Asia Pacific Journal of Energy and Environment*, volume 2, Number 3, 175-182
- Twumasi, Y. A., 2017. Relationship between CO_2 Emissions and Renewable Energy Production in the United States of America.

Relationship between GDP Growth and Greenhouse Gas Emissions: The Case of Bangladesh

- SCIENCEDOMAIN international*, 7(1): 1-12,2017; Article no. ACRI.30483. www.sciencedomain.org.
- UNDP, 2018. United Nations development program (UNDP), UN. www.undp.org
- PRIS, 2017. World Nuclear Association, Power Reactor Information Service (PRIS), International Energy Agency, *World Energy Outlook 2017*. www.pris.iaea.org
- Waste atlas, 2018. Waste atlas (non-profit organization supported by university of leeds). www.atlas.d-waste.com
- What's your impact, 2018. What's your impact, (a nonprofit voluntary organization). www.whatsyourimpact.org

Appendix

Table: Performance of GDP and GHGs in Bangladesh

| Year | GDP (Billion US\$) | Growth Rate of GDP | CO ₂ (kilo ton) | Growth Rate of CO ₂ | Methane (Kilo ton of CO ₂ equivalent) | Growth Rate of Methane | Nitrous Oxide (thousand metric ton of CO ₂ equivalent) | Growth Rate of Nitrous Oxide |
|------|--------------------|--------------------|----------------------------|--------------------------------|--|------------------------|---|------------------------------|
| 1972 | 6.2882 | | 3509.319 | | 88057.2 | | 9934.4 | |
| 1973 | 8.08867 | 28.63252 | 4554.414 | 29.78056 | 88622.8 | 0.642303 | 10077.4 | 1.439439 |
| 1974 | 12.5125 | 54.69169 | 4660.757 | 2.334937 | 87762.2 | -0.97108 | 9780 | -2.95116 |
| 1975 | 19.4483 | 55.43096 | 4869.776 | 4.48466 | 90812.2 | 3.4753 | 10568.6 | 8.063395 |
| 1976 | 10.1171 | -47.9795 | 5570.173 | 14.38253 | 88206.1 | -2.86977 | 10897.1 | 3.108264 |
| 1977 | 9.6511 | -4.60606 | 5812.195 | 4.344962 | 88930.3 | 0.821026 | 11443.96 | 5.018399 |
| 1978 | 13.3818 | 38.65569 | 6017.547 | 3.533125 | 91214.2 | 2.568198 | 12137.9 | 6.06381 |
| 1979 | 15.5655 | 16.31843 | 6648.271 | 10.48142 | 92273.5 | 1.161329 | 12648.4 | 4.205835 |
| 1980 | 18.138 | 16.52693 | 7638.361 | 14.89244 | 87058.4 | -5.65179 | 11498.9 | -9.08811 |
| 1981 | 20.25 | 11.64406 | 7931.721 | 3.84062 | 88085 | 1.179211 | 11457.8 | -0.35743 |
| 1982 | 18.525 | -8.51852 | 8599.115 | 8.414239 | 88597.9 | 0.582276 | 12030.5 | 4.998342 |
| 1983 | 17.609 | -4.94467 | 8236.082 | -4.22175 | 83607.6 | -5.63252 | 12424.7 | 3.276672 |
| 1984 | 18.921 | 7.450735 | 9123.496 | 10.77471 | 86141.6 | 3.030825 | 13083.1 | 5.299122 |
| 1985 | 22.278 | 17.74219 | 10234.6 | 12.17849 | 87075 | 1.083562 | 13132.1 | 0.374529 |
| 1986 | 21.774 | -2.26232 | 11463.04 | 12.00281 | 88140.6 | 1.223775 | 13727.8 | 4.536213 |
| 1987 | 24.298 | 11.59181 | 11862.75 | 3.486946 | 86484.1 | -1.87938 | 14221.4 | 3.595623 |
| 1988 | 26.579 | 9.387604 | 13545.9 | 14.18853 | 86033.6 | -0.5209 | 15066.3 | 5.941047 |
| 1989 | 28.782 | 8.288498 | 13454.22 | -0.67681 | 87640.1 | 1.867294 | 16166.7 | 7.303718 |
| 1990 | 31.709 | 10.16955 | 15533.41 | 15.45381 | 87092.7 | -0.6246 | 16201.4 | 0.214639 |
| 1991 | 30.957 | -2.37157 | 15940.45 | 2.620416 | 85947.7 | -1.31469 | 18157.7 | 12.07488 |
| 1992 | 31.709 | 2.429176 | 17748.28 | 11.34114 | 86069.7 | 0.141947 | 18747.9 | 3.250417 |
| 1993 | 33.167 | 4.598064 | 17407.25 | -1.92148 | 84822.6 | -1.44894 | 19595.3 | 4.519978 |
| 1994 | 33.769 | 1.815057 | 18969.39 | 8.974083 | 84986 | 0.192635 | 20548.3 | 4.863411 |
| 1995 | 37.94 | 12.35157 | 22816.07 | 20.27835 | 85432.8 | 0.52573 | 21457.2 | 4.423227 |
| 1996 | 46.438 | 22.39852 | 24029.85 | 5.319847 | 86646.3 | 1.420415 | 22369.1 | 4.24986 |
| 1997 | 48.244 | 3.889056 | 25063.95 | 4.303393 | 87234 | 0.678278 | 21076.6 | -5.77806 |
| 1998 | 49.985 | 3.608739 | 24048.19 | -4.05267 | 85824.8 | -1.61543 | 21381.5 | 1.446628 |
| 1999 | 51.271 | 2.572772 | 25236.29 | 4.940497 | 89556.1 | 4.347584 | 21080 | -1.4101 |
| 2000 | 53.37 | 4.093932 | 27869.2 | 10.43303 | 89247.2 | -0.34492 | 20770 | -1.47059 |
| 2001 | 53.991 | 1.163575 | 32456.62 | 16.46054 | 90645.8 | 1.567101 | 20473.8 | -1.42609 |
| 2002 | 54.724 | 1.357634 | 33707.06 | 3.85265 | 92039.3 | 1.537302 | 20375.8 | -0.47866 |
| 2003 | 60.149 | 9.913384 | 35672.58 | 5.831179 | 92994.3 | 1.0376 | 20732.9 | 1.752564 |

Relationship between GDP Growth and Greenhouse Gas Emissions: The Case of Bangladesh

| Year | GDP (Billion US\$) | Growth Rate of GDP | CO ₂ (kilo ton) | Growth Rate of CO ₂ | Methane (Kilo ton of CO ₂ equivalent) | Growth Rate of Methane | Nitrous Oxide (thousand metric ton of CO ₂ equivalent) | Growth Rate of Nitrous Oxide |
|------|--------------------|--------------------|----------------------------|--------------------------------|--|------------------------|---|------------------------------|
| 2004 | 65.109 | 8.246189 | 37704.09 | 5.694884 | 91778.3 | -1.30761 | 21193.9 | 2.223519 |
| 2005 | 69.443 | 6.65653 | 39478.92 | 4.707267 | 94197.9 | 2.636354 | 21436.9 | 1.146556 |
| 2006 | 71.819 | 3.421511 | 43541.96 | 10.29167 | 95019.6 | 0.872317 | 21631.3 | 0.906852 |
| 2007 | 79.612 | 10.85089 | 44381.7 | 1.928572 | 96499.6 | 1.557573 | 21976 | 1.59352 |
| 2008 | 91.631 | 15.09697 | 49511.83 | 11.55911 | 97832.1 | 1.380835 | 22298.7 | 1.468416 |
| 2009 | 102.478 | 11.8377 | 53736.22 | 8.532084 | 99687.7 | 1.89672 | 24422.1 | 9.522533 |
| 2010 | 115.279 | 12.49146 | 59937.12 | 11.53952 | 103080 | 3.402924 | 26159.6 | 7.114458 |
| 2011 | 128.638 | 11.58841 | 63413.43 | 5.799927 | 104110.8 | 1 | 26421.2 | 1.000011 |
| 2012 | 133.356 | 3.667657 | 67505.8 | 6.453471 | 105141.6 | 0.990099 | 26682.8 | 0.990122 |
| 2013 | 149.99 | 12.47338 | 71598.16 | 6.062245 | 106172.4 | 0.980402 | 26944.4 | 0.980411 |
| 2014 | 172.885 | 15.26435 | 75690.53 | 5.715743 | 107203.2 | 0.970874 | 27206 | 0.970896 |
| 2015 | 195.079 | 12.83744 | 79782.9 | 5.406709 | 108234 | 0.961548 | 27467.61 | 0.961556 |
| 2016 | 221.415 | 13.50017 | 83875.27 | 5.12938 | 109264.8 | 0.952381 | 27729.21 | 0.952402 |
| 2017 | 248.9 | 12.41334 | 87967.63 | 4.879111 | 110295.6 | 0.943405 | 27990.81 | 0.943417 |

Source: World Bank.

A Quest for Job Dissatisfaction Factors of Bangladeshi Women Garment Workers: Evidence from Comilla EPZ

Tania Akter*

Abstract: *Readymade Garment (RMG) industry is playing a very crucial role in the socio-economic development of Bangladesh. There are now 4328 garment factories in Bangladesh employing over four million people (BGMEA, 2015-16). Ninety percent of these workers are women (BKMEA, 2015). But unfortunately the women employees who lead the sector remain lagged behind. Eventually, they are dissatisfied while their job satisfaction is most important factor for success in this sector. This paper attempts to find out job dissatisfaction causes of women garment workers through Factor analysis. Finally, the author has tried to visualize the topic through the findings and recommendations.*

1. Introduction

1.1 An Overview of RMG Sector of Bangladesh

Export concentration is not a new phenomenon for Bangladesh. Bangladesh's export performance so far presents signs of strength in its export basket (Sattar, 2015). Bangladesh has been the one of the biggest export trade country of RMG and Apparel in the world market.

The industry has grown dramatically over the past 40 years, and today accounts for 82% of Bangladesh's total exports. Table A (In appendix) shows that, Export of RMG in 2015-16 were (in US\$) 28094.16 million dollars which were 82.01% of total export (34257.18 Million dollars) of Bangladesh (BGMEA, 2015-16). In terms of core economic consideration RMG holds almost 14.07 percent of the GDP of Bangladesh (Islam et al., 2016).

Rahman (2002) described that the growth of RMG exports has undoubtedly positive effects on macroeconomic balances. It has helped maintain a sustainable trade deficit. This industry has not just contributed through the dollars earning but also in socioeconomic prospects, creating a huge number of employment opportunities mostly for the poor illiterate workforce of the country (Adnan et al., 2015). Table A (in Appendix) shows that, there are now 4,825 garment factories in Bangladesh employing over four million people (BGMEA, 2015-16).

Insufficient salary, discrimination, unhealthy work environment, frequent work accidents and hazards are commonly seen incidents in RMG sector in Bangladesh

* Lecturer, School of Business, Britannia University, Comilla.

(Aslam et al., 2011; Adbin, 2008; Berik & Rodger, 2008; Hossan et al., 2012a; Hossan et al., 2012b). Besides that poor working conditions and work practices (like irregular pay) in the factories and a lack of social compliance are serious concerns in RMG sector, as these lead to frequent labor unrest (Hossan, et al., 2012a; Muqtada et al., 2002).

1.2 Women Workers in Bangladeshi RMG Sector

Fortunately the ready-made garments (RMG) sector opens a big window for women as a means of employment. This industry has provided the largest employment opportunities for women in the industrial sector where more than 90 percent of the production workers are women (BKMEA, 2015).

Women participation in RMG industry in Bangladesh is the highest among all South Asian countries. All other countries are lagging far behind Bangladesh, except Sri Lanka which is a little closer to Bangladesh and amounts to 81 percent women participation (Appendix: Table B).

The numbers of workers have increased at faster rates and reached to 4 million in 2012-2013 fiscal year. During the following year however, the employment level remained stagnant. Out of these total labor force almost 90 percent are women. In fact, a large supply of cheap women labor remained the key success factor in the initial stages of this the country's flagship export-oriented industry (Bhattacharya & Rahman, 1999).

Emergence of RMG sector is seen as the best thing happened in Bangladeshi economy by not only its contribution through the export earning but also the creation of generous employment opportunity for labor force specially bringing women to the mainstream of economy (Islam, 2013).

Women workers are not normally in decision making position in RMG sector. Women work merely as helpers and less frequently as line supervisors (Kabeer1991:135). In fact, a large supply of cheap and flexible women labor was used to be the key success factors in the initial stage of the country's flagship export-oriented industry (Bhattacharya & Rahman, 1999).

1.3 Job Satisfaction of RMG Sector

The most frequently used definition of job satisfaction has been given by Locke (1976), who defined it as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences". Job satisfaction by definition is employee's sense of achievement and success that is directly linked to productivity and personal wellbeing (Ahamed, 2014; Miller & Rosse, 2002).

Employees are the key source of competitive advantage for business organization and as innovative and committed workers they can make dramatic changes in

business performance and sustainability (Agarwala, 2011; Nankervis & Compton, 2002). Job satisfaction is such a tool that improves the motivation and commitment of workers which consequently leads to higher growth and productivity (Rubel & Kee, 2013; Shabnam & Sarker, 2012). Without satisfied employees, no organization can achieve their business target as unhappy workers will never work for progress and prosperity. On the other hand, job dissatisfaction raises worker's voice and creates unrest (Hossan et al., 2012a; Noe et al., 2007).

Dissatisfied RMG workers in Bangladesh are creating unrest and raising voice in recent time. Due to labor unrest, RMG sectors are losing its market as unrest disrupts production functions and passes the message to the buyers regarding employee discrimination (Ahamed, 2014; Chowdhury, et al, 2006). Therefore, job satisfaction is essential to enhance peace and harmony at work place as well as to ensure higher productivity.

1.4 EPZ and Its Contribution

In order to stimulate rapid economic growth of the country, particularly through industrialization, the government has adopted an 'Open Door Policy' i.e EPZ. In view of the growing need of attracting foreign and local investment, the concept of Export Processing Zones (EPZs) established to enhance investment, employment, export, to transfer technology and earn foreign exchanges. It also argues that developing countries can take advantage of the opportunities provided by EPZs for the acquisition of superior technology, upgrading of labor and managerial skills, and greater access to foreign markets.

There are eight EPZs located in Dhaka, Chittagong, Karnaphuli, Adamjee, Comilla, Mongla, Ishwardi and Uttara, employing around 382000 workers across the country, out of which an estimated number of 300000 workers belong to the garment factories. EPZs contribute to poverty reduction. Contribution of EPZs to new job creation has increased from 17,540 in 2013-14 to 32,967 in 2014-15 with an annual increase of 87.95% (Yunus, M., Mondal, 2015).

EPZs are contributing a huge impact in the economy of Bangladesh. In 2015-16 fiscal years, BEPZA's contribution to the total national export was 18.30 percent in 2013-2014, but it reached to 19.58 percent in the 2015-2016 fiscal year. During 1999-00/2014-15 period the EPZs contributed Tk. 4.5 billion in the form of income taxes. BEPZA contributed Tk.1.8 billion in the form of DSL during 1992-93/2014-15 period. In 2013-14 fiscal year, goods worth US\$ 5525.31 million were exported from the operating industries of EPZs. In 2015-16 fiscal year, exported goods worth US\$ 6113.49 million from the enterprises of eight EPZs from Bangladesh and rest are from rest of the world.

1.5 COEPZ

Comilla EPZ was established in 2000 with 108.28 hectares (267.46 acres) area which is only 167 kms away from Chittagong port, and only 97 kms away from Dhaka. Currently 32 investors are operating at COEPZ. In Fiscal year 2016-17 (December, 2016), COEPZ employed 25774 employees; Investment and Export stood at 265.46 and 1681.61 Million US dollars respectively (Table C in appendix)

2. Objectives of the Study

The core objective of the study is to identify the causes of job dissatisfaction of Bangladeshi women garment workers especially in COEPZ. The specific objectives are:

- i. To know the job environment of women RMG workers as a whole particularly of COEPZ;
- ii. To examine the biographical and socio-economic background of the women RMG workers in COEPZ ;
- iii. To recommend some suggestions based on findings of the study.

3. Literature Review

This research seeks to analyze and investigate the job dissatisfaction factors of women garment workers. So, a literature survey has been undertaken in order to review the current status of women workers, working conditions, problems they face and working condition in EPZs etc.

Alam, S.M. (1986) showed that Low job security was most common factor that contributed to job dissatisfaction of female workers of different garments factories in 1983. He also identified family lives, low level of pay, working environment/condition were also the causes of job dissatisfaction of female garment workers.

Paul-Majumder and Begum (2000) found that, the female workers of garment industry in Bangladesh work about 12 hours a day and there is absence of leave facilities in Bangladesh. Although the workers were paid for overtime on weekly holiday, no alternative holidays were given to the workers.

Khan (2001) in his study mentioned low aspirations wages and lack of social security are the main reasons of job dissatisfaction of women. So, most garment factory owners perceived them as docile, trustworthy and manageable.

Kabeer (2001) mentioned, despite restrictions on night work for female workers, they are still forced to work overtime, often into the night and caused to dissatisfaction.

A few studies stated that majority of the women work in the low-paid and less skilled jobs, where work hazards are comparatively higher.(Jamaly and Wickramanayake, 1996; Paul-Majumder, 2003)

Some studies identified that, most women work until after dark, there are no safety arrangements for them, no transportation facilities and no accommodation at the factories. As a result, they frequently feel frightened and insecure, and for good reason: many female garments workers are abused or even raped by criminals who specialize in preying on them (Shimu, 1999; Mondal, 2000; Kabeer N., 2004).

Some study mentioned that, women are paid far less than men mainly due to their lack of education (Nalia et.al) Women are reluctant to unionize because factory owners threaten to fire them (Ahmed F.E, 2004) even though trade unionization is banned inside the Export processing Zones (EPZ). These factors contributed to get frustration which leads to dissatisfaction.

Some researches (Delahanty 1998; Partima and Begum, 2000; Bansari, 2010) pointed out that, sexual harassment is one of the leading causes of job dissatisfaction of women garments workers. they noted that, in most of the cases women suffer abuse, embarrassment, humiliation, and even physical harm.

Begum et al. (2010) identified many sophisticated problems that caused women worker's dissatisfaction as, transportation problem, low overtime rate, long working hours, low salary and reluctance to offer training to women.

War on Want, an international NGO that works for human rights, observed several reasons behind the women worker's dissatisfaction in RMG sector in Bangladesh. Majorities are overtime deductions, sexual harassment, setting unrealistically high targets, unpaid overtime, lack of maternity leave, short notification about overtime a few hours before it was needed, job security, night shifts, severe labour rights violations, denying women any rest periods or time with their children etc (War on Want, 2011).

Some studies reported that, women workers frequently experienced the accommodation problem (Khan 1993:77, Sikder, M. et al., 2014).

Sikder H. et al. (2014) observed that, most of the aged female workers complained that the management intentionally behaves roughly so that they quit the job. But management claims that young workers are more productive than aged workers.

Islam M.F.(2015) in his study mentioned that due to improper work practices that include inability to meet social need, organizational support, pay & job nature, improper appraisal & work environment, poor supervision etc., were the major causes of job dissatisfaction of RMG workers in Bangladesh.

From the above literature it is clear that different researchers have examined the condition of women RMG workers and their problems with dissatisfactions points in different viewpoints. The present study will be general in nature that it will analyze the major causes/ factors that liable for dissatisfaction of women RMG worker in Bangladesh in the light of COEPZ.

4. Rationale of the Study

EPZs were established to foster the RMG sector and move the sector toward a better example. Job satisfaction also shows the worker's interest and liking towards their work that applies to RMG sector of Bangladesh (Spector, 1997).

In spite of the epic growth of the RMG industry, and its bright prospects, this industry faces many challenges. Some of the challenges faced by this industry are to ensure workplace safety, working conditions and job satisfaction of the garment workers. Experts opined that the most important challenge in this sector is job satisfaction of the workers as about 90% poor & underprivileged women have been doing job in RMG (Ahamed, 2014). Furthermore, the researcher has chosen one of EPZ as an area of research. Theoretically, EPZs attributed workers' higher productivity, peaceful working environment, one-stop service facilities, which provides all export-related services within six hours, for better performance in terms of export earnings. In practice, work satisfaction of women is always in question. Hence, this study aims at identifying the job dissatisfaction of Women RMG workers in Bangladesh based on COEPZ data. This study is expected to contribute to the already existing vast literature on the women garment workers in Bangladesh.

5. Methodology of the Study

The study is descriptive in nature. Data from both primary and secondary sources have been used to accomplish the study. Convenience sampling has been adopted for conducting this study. Primary data were collected through a self-administered survey questionnaire with 133 women garment workers from 9 different garments (Interviewed at their workplace and in some cases in the outside of workplace) by some experienced interviewer. The questionnaire incorporated 23 items which were developed based on extensive literature review. The questionnaire was constructed by using five point Likert scale, where 1= Highly Dissatisfied, 2= Dissatisfied, 3= Neutral, 4= Satisfied, 5= Highly Satisfied. The items on the survey were generated based upon suggestions developed from review of the previous literature in general. However, the theoretical part of this study is formalized from secondary information collected from different books, journals and publications of thesis. The present study

covered only women employees from different garments which are located at Comilla EPZ. **Kaiser-Meyer-Olkin (KMO)** and **Bartlett's test** are employed to check the sample adequacy & strength of the relationship among variables. Finally, the researcher employed factor analysis to address the factors caused for dissatisfaction of women garment workers. The Statistical Package for Social Science, version 16.0 was used for this analysis.

6. Findings of the Study

6.1 Test of Sample adequacy & strength of the relationship among variables

Kaiser-Meyer-Olkin (KMO) and Bartlett's test is important to conduct Factor analysis. Kaiser-Meyer-Olkin (KMO) Test is a measure of how suited your data is for Factor Analysis. The test measures sampling which should be greater than 0.5 for a satisfactory factor analysis to be proceeded. It appears from Table 1 that the KMO measure is 0.506 which is acceptable for running a factor analysis.

Table 1: KMO and Bartlett's Test

| | | |
|---|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | .506 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 355.786 |
| | df | 253 |
| | Sig. | .000 |

Bartlett's test is another indication of the strength of the relationship among variables. This tests the null hypothesis that the correlation matrix is an identity matrix. It has been seen that the Bartlett's test of sphericity is significant That is, its associated probability is less than 0.05. In fact, it is actually 0.000, i.e. the significance level is small enough to reject the null hypothesis. Thus, from the perspective of Bartlett's test, factor analysis is feasible.

6.2 Nature of the Respondents

Table 2 summarizes the profiles of the respondents. The profile characteristics include age limit, marital status, job level, education level and length of service in their current organization.

Table 2: Respondents' Demographic Profiles

| Particulars | Variables | Frequency | Percent |
|--|---------------------|-----------|---------|
| Age Limit | 14-18 | 28 | 21.1 |
| | 19-22 | 70 | 52.6 |
| | 23-30 | 29 | 21.8 |
| | 31-40 | 5 | 3.8 |
| | More than 40 | 1 | .8 |
| Marital Status | Married | 42 | 31.6 |
| | Single | 72 | 54.1 |
| | Divorced/Separated | 8 | 6.0 |
| | Widow | 11 | 8.3 |
| Job Level | Operator | 131 | 97.34 |
| | Supervisor/ Foreman | 2 | 2.66 |
| Length of Service (Existing Organization) | 0-1 | 48 | 36.1 |
| | 1-2 | 67 | 50.4 |
| | 2-3 | 11 | 8.3 |
| | 3-5 | 4 | 3.0 |
| | More than 5 years | 3 | 2.3 |
| Education level | Class 5 | 18 | 13.5 |
| | Class 8 | 49 | 36.8 |
| | SSC | 46 | 34.6 |
| | Others | 20 | 15.0 |

6.3 Exploring the Dissatisfaction Factors of Women Garment Workers of COEPZ

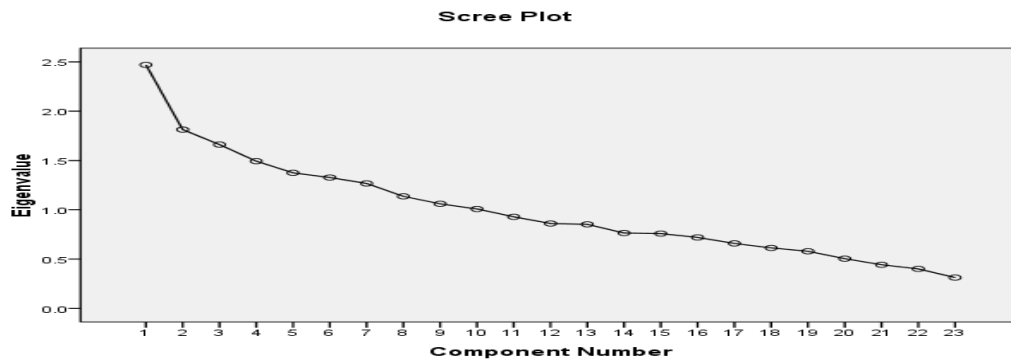
In the present study, Factor Analysis has been used to determine the factors responsible for dissatisfaction of women garment workers of Comilla EPZ. An attempt is made to explore the factors that lead to dissatisfaction of women

garment workers in COPEZ, Bangladesh. In this regard, the study uses **Scree plot** to show the factors revealed from all the surveyed items. To be sure about the number of factors, researcher also followed the **Total Variance Explained**. Finally, the study concludes with the finding of the dissatisfaction factors by using **Rotated Component Matrix**.

6.3.1 Scree Plot

The scree plot is a graph of the eigenvalues against all the factors whereas the eigenvalue refers to the standardized variance associated with a particular factor.

Figure 1: The Scree Plot



The sum of the eigenvalues cannot exceed the number of items in the analysis, since each item contributes one to the sum of variances. It is intended to help in determining how many factors to retain where the curve starts to flatten. It can be seen that factors 1 to 10 possess the eigenvalues more than 1. So, 10 factors may be retained.

6.3.2 Total Variance Explained

To be sure about the number of factors retained, researcher also followed the total variance explained.

Table 3: Total Variance Explained

| Component | Initial Eigenvalues | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.470 | 10.739 | 10.739 | 2.052 | 8.922 | 8.922 |
| 2 | 1.813 | 7.883 | 18.622 | 1.789 | 7.780 | 16.702 |

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| | | | | | | |
|--|-------|-------|---------|-------|-------|--------|
| 3 | 1.661 | 7.222 | 25.844 | 1.505 | 6.542 | 23.243 |
| 4 | 1.493 | 6.490 | 32.333 | 1.457 | 6.334 | 29.578 |
| 5 | 1.374 | 5.976 | 38.309 | 1.368 | 5.946 | 35.524 |
| 6 | 1.327 | 5.770 | 44.079 | 1.357 | 5.898 | 41.422 |
| 7 | 1.267 | 5.508 | 49.587 | 1.353 | 5.882 | 47.304 |
| 8 | 1.136 | 4.939 | 54.526 | 1.319 | 5.736 | 53.040 |
| 9 | 1.060 | 4.609 | 59.135 | 1.209 | 5.257 | 58.298 |
| 10 | 1.008 | 4.383 | 63.518 | 1.201 | 5.220 | 63.518 |
| 11 | .929 | 4.037 | 67.555 | | | |
| 12 | .860 | 3.740 | 71.296 | | | |
| 13 | .852 | 3.705 | 75.001 | | | |
| 14 | .764 | 3.321 | 78.322 | | | |
| 15 | .758 | 3.297 | 81.619 | | | |
| 16 | .719 | 3.127 | 84.746 | | | |
| 17 | .659 | 2.864 | 87.610 | | | |
| 18 | .613 | 2.665 | 90.274 | | | |
| 19 | .579 | 2.517 | 92.791 | | | |
| 20 | .504 | 2.190 | 94.981 | | | |
| 21 | .442 | 1.922 | 96.903 | | | |
| 22 | .400 | 1.740 | 98.643 | | | |
| 23 | .312 | 1.357 | 100.000 | | | |
| Extraction Method: Principal Component Analysis. | | | | | | |

Table 3 shows all factors extractable from the analysis along with their Eigenvalues, the percent of variance attributable to each factor, and the cumulative variance of the factor and the previous factors. To determine the number of components only the Eigen values greater than or equal to 1 is considered. For this study there were ten (10) factors having Eigen values exceeding 1 (Table 3). The Eigen values for factors after rotation are 2.052, 1.789,

1.505, 1.457, 1.368, 1.357, 1.353, 1.319, 1.209 and 1.201. The percentage of the total variance which is used as an index to determine how well the factor solution accounts for what the variables together represent is 63.518%.

6.3.3 Rotated Component Matrix

The factor matrix below contains the coefficients used to express the standardization variables in terms of factors.

Table 4: Rotated Component Matrix

| Sl. | Factors | Component | | | | | | | | | |
|-----|------------------------------------|-----------|------|-------|------|------|------|---|------|------|------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| q1 | Salary | | .716 | | | | | | | | |
| q2 | Accommodation problem | | | -.657 | | | | | | | |
| q3 | Job security | | | | | | .526 | | | | |
| q4 | Work pressure | | | | | | .774 | | | | |
| q5 | Extent of supervision | | | | | .514 | | | | | |
| q6 | The working environment | | | | | | | | | | .844 |
| q7 | Behaviour of the co-workers | | | .648 | | | | | | | |
| q8 | The administration/ Management | | | | | | | | .513 | | |
| q9 | health and safety | | .548 | | | | | | | | |
| q10 | Snacks & lunch | | | | | .810 | | | | | |
| q11 | Overtime and/or Extra hour work | .767 | | | | | | | | | |
| q12 | Maintenance of working hours | | | | | | | | | .812 | |
| q13 | Attitude of society | | .529 | | | | | | | | |
| q14 | Maternity leave provision | | | | | | | | | | |
| q15 | Promotion and increment | | | | .569 | | | | | | |
| q16 | Performance appraisal | | | | | | | | .721 | | |
| q17 | Transportation facility | | | | .786 | | | | | | |
| q18 | Leaveand/or holiday | | | | | | | | | | |
| q19 | Gender discrimination | | | | | | | | | | |
| q20 | Sexual harassment | .642 | | | | | | | | | |

| | | | | | | | | | |
|---|------------------------|--|------|--|--|--|------|------|--|
| q21 | Time for family | | .504 | | | | | | |
| q22 | Suitability of the Job | | | | | | .773 | | |
| q23 | Training facilities | | | | | | | .544 | |
| Extraction Method: Principal Component Analysis. | | | | | | | | | |
| Rotation Method: Varimax with Kaiser Normalization. | | | | | | | | | |
| a. Rotation converged in 18 iterations. | | | | | | | | | |

The coefficients, factor loadings, represent the correlation between the factors and variables are closely related. In other words, the higher the absolute value of loading, the more the factor contributes to the variable. The gap on the table represent loadings that are less than 0.50, this makes reading the table easier. The researcher suppressed all loadings less than 0.50. The idea of rotation is to reduce the number of factors on which the variables under investigation have high loadings. Rotation does not actually change anything but makes the interpretation of the analysis easier. Therefore, through rotation, the factor matrix is transformed into a simpler one that is easier to interpret (Johnson and Wichern, 2007). The most commonly used method for rotation is the Varimax procedure. Here, the Varimax with Kaiser Normalization has been used as rotation method. The following rotated matrix has been used to identify variables involved in each factor.

6.3.4 Composition of Factors

From the above Interpretation of Rotated Component Matrix, we find the specific variables led to specific factor(s). With those we can construct the following table (table 5) which shows the factors composed with the variables used in this study as the factors of job dissatisfaction of women COEPZ workers. Table 4 depicts the variables under each of the ten derived factors.

Table 5: Composition of Factors

| Factors | Factor name | Loaded variables |
|-----------------|----------------------------|---|
| Factor 1 | Extra work and Harassment | Overtime and/or Extra hour work Sexual harassment |
| Factor 2 | Basic & Social Needs | Salary health and safety Attitude of society Time for family |
| Factor 3 | Accommodation & Co-workers | Accommodation problem Behaviour of the co-workers |

| Factors | Factor name | Loaded variables |
|-----------|----------------------------|---|
| Factor 4 | Advancement and Facilities | Promotion and/or increment Transportation facility |
| Factor 5 | Supervision & Support | Extent of supervision Snacks & lunch |
| Factor 6 | Nature of Job | Job security Work pressure |
| Factor 7 | Job passion | Suitability of the Job |
| Factor 8 | Improper Management | The administration/ Management Performance appraisal Lack of Training |
| Factor 9 | Strict working hours | Maintenance of working hours |
| Factor 10 | Work environment | The working environment |

Factor 1 is named as **Extra work and Harassment** which is composed with Overtime/ Extra hour work and Sexual harassment; **factor 2**, named as **Basic & Social Needs** is composed with Salary, health and safety, Attitude of society and Time for family; **factor 3**, named as **Accommodation & Co-workers** is composed by Accommodation problem; similarly the other remaining factors are shown in the following table.

7. Recommendations

As the working condition of this sector is getting worse, employees' involvement in labor unrest has increased. But, EPZs are contributing a lot to our national economy and Job satisfaction level of EPZ's women worker is comparatively better than that of rest of the garments outside the EPZs. However, this study has found that both financial and non-financial factors are related to job satisfaction of the women workers in RMG sector. If the organization can provide appropriate financial and non-financial benefits to the employees, their satisfaction level may increase.

Based on the findings of the study, following recommendations have been appended for reducing women employee's dissatisfaction in RMG sector:

- Policymakers should be aware of the importance of the women's economic contribution;
- Low salary is always a big concern in RMG sector of Bangladesh as well as EPZs. They just get 78 USD in entry level. So, to reduce dissatisfaction of employees justified pay should be provided. Along with justified pay, organization should take care of regular pay and increment.

- Ensure good working environment for women through providing work place safety and security, health and hygiene measures etc as sexual harassment within and outside of the organization are always questioned.
- Standard working conditions should be ensured as flexible work schedule, proper leave provision, and maximum working hours.
- Work-Family balance is very important for women's life. To balance between work and their family life, employers must ensure friends and family related benefits (like day care facilities, subsidized meal at staff canteen, transportation facilities and so on).
- From this research, it is found that not only financial facilities but also the non-financial facilities are equally important to increase job satisfaction. Therefore, organization should take care of it specially supervisors. Career advancement is very slow for women workers. Their promotions are denied in most of the cases. So, advancement in career of women garment workers is needed to be applied.
- Future financial security is also a motivator to do work with satisfaction. Women are consciously neglected in these areas. Therefore, organization should arrange pension plan, gratuity, provision of provident fund etc.
- Full implementation of compliance criteria proposed by the RMG importer countries as women worker's benefits are specifically defined there.
- The government must be diligent in implementing the labour laws. The employers must use all the facilities provided by the government for the good of the women workers.
- The women workers must be aware about labour rights and occupational safety.
- Regulatory measures and its strict implementation and monitoring by the government agency that could overcome work place insecurity and harassment problem of women garments worker.
- Need to develop regular official inspection system for compliance checking of safety and health system of the garment facilities by the team consisting of BGMEA, Ministry of Textile and Ministry of Commerce.
- Arrange some skill development training especially for female RMG workers for increasing efficiency
- RMG associations or owner or government should take-up a better accommodation for female worker as it has been a great factor affecting job satisfaction in women worker's life .

Through all these initiatives stated above, it is expected that the women RMG workers may be able to make a more worthwhile contribution to our EPZs as well as to the country.

8. Conclusion and Future Scope of the Research

As the 90% of garment workers are women, their problems must be recognized properly and concrete measures should be taken to lessen their plight. But, the present condition of EPZ women garment workers is not favorable as expected. They face various crises in job aspects as we observe in the findings. The media had covered many reports on their miserable work life but negligible measures have been taken so far to address these problems. Overall, these problems are hampering the smooth production of the EPZ and RMG sector as a whole and if these obstacles are not removed, the sector may be affected more in the coming days. Unless and until the rights of the women garment workers are ensured, it may not be expected that this sector will achieve its desired goal. If the recommended measures are implemented in the EPZs then it may improve the present situation of women employee satisfaction and morale level by which the sector may achieve its goals. It may be noted in general that, women particularly young women of all classes expect to live with a guardian preferably a male guardian (Father, brother, Husband or adult son).

Although the present study contributes to the available literature, it has some limitations. The limitation of the study is that it had a very small sample size as well as a confined geographical area i.e COEPZ; therefore it is difficult to generalize the results of the study. So if the sample size and the number of EPZs are increased then the results will be more accurate. The subjective perception of the individual may influence the findings. However a future study, covering more garments and EPZs is encouraged which may come up with more meaningful and realistic results.

References

- Agarwala, T., 2011 *Strategic Human Resource Management* (11th ed.). Oxford: New Delhi.
- Ahamed, F., 2014 Job Dissatisfaction in the Bangladesh Ready Made Garment Sector- To What Extend HR/IR Practices Can Grow Exhilaration of RMG Workers? *International Journal of Business and Management Review*, 2(1), 1–12.

A Quest for Job Dissatisfaction Factors of Bangladeshi Women Garment Workers

- Aslam R. & Shumaila S et al, 2011 Work Family Conflicts: Relationship between Work Life Conflict and Employee Retention A Comparative Study of Public and Private Sector Employees, *Working Paper. Hailey College of Commerce, University of the Punjab, Lahore, Pakistan*. Retrieved from: <http://dx.doi.org/10.1596/1813-9450-5669>
- Abdin M. J., 2008 Overall Problems and Prospects of Bangladeshi Ready-Made Garment Industry. Retrieved from <http://ssrn.com/abstract=1117186>
- Adnan ATM., Rakib A., Rahman M. 2015 Export trend of Bangladesh: the dominance of ready-made garments industry, *Research Journal of Economics, Business and ICT*, 10(1), 25-31
- Alam, S.M. Ikhtiar, 1986 Job Satisfaction: A Case Study of Working Women in Different Garment Factories in Dhaka City, *Journal of Management, Business & Economics*, IBA, University of Dhaka, 12(1)
- Fakir A.N.M A., Miah M.S., & Hossain M.S., 2013 Export Diversification and Role of Export Processing Zones (EPZ) in Bangladesh, *ASA University Review*, 7 (1), 89-105
- Bansari, N., 2010 Textile and Clothing Sector in Post MFA Regime: A Case from Bangladesh, Gender and Trade, *Commonwealth Secretariat*. Retrieved from: <http://www.genderandtrade.org>
- Bhattacharya, D. & Rahman, M., 1999 Women Employment under Export-Propelled Industrialization: Prospects for Internalizing Global Opportunities in Bangladesh's Apparel Sector, *Paper presented at the UNRISD's Contribution to the Fourth World Conference on Women*.
- Bangladesh Garment Manufacturers and Exporters Association (BGMEA), (2015b). RMG Export in World from 2013 to 2015. Retrieved from www.bgmea.com.bd/home/pages/TradeInformation
- BGMEA, 2015-2016 Trade Information, Bangladesh Garment Manufacturers and Exporters Association <http://bgmea.com.bd/home/pages/TradeInformation>
- Chowdhury M A & Ali M et al, 2006 WTO, Post-MFA Era and the Bangladesh RMG Sector: An Assessment of Performance and Challenges. *South Asian Journal of Management*. <http://www.allbusiness.com/legal/international-trade-law/treaties-agreements>

- Delahanty J., 1998 Higher Pay at a Higher Price for Bangladeshi Garment Workers. *North South Institute. Review*.2(1). Retrieved from: www.nsi-ins.ca/english/publications/review/v2n1/03.asp
- Greenhaus JH, Collins KM, Shaw J., 2003 The relation between work-family balance and quality of life, *Journal of Vocational Behavior*, 63,510–531
- F. Begum, R. N. Ali, M.A. Hossain¹ and Sonia Shahid B. 2010 Harassment of women garment workers in Bangladesh, *Journal of Bangladesh Agriculture University*, 8(2), 291–296
- Hossan, C. G., Sarker, A. R., & Afroze, R. 2012a. Recent unrest in RMG sector of Bangladesh: Is this an outcome of Poor Labour Practices? *International Journal of Business and Management*, 7(3), Retrieved from: <http://dx.doi.org/10.5539/ijbm.v7n3p206>
- Hossain, I. and Al-Amin, M., 2012b Employment of Women in the Globalization of Production in the Ready Made Garment sector of Bangladesh: Welfare or Exploitation? *Women for Women*, 19, 1-16
- Hossain, H., Jahan, R. and Sobhan, S. 1990 No Better Option? industrial Women Workers in Bangladesh, Dhaka: UPL
- Hossain, M.I., 2002 Export processing zones in Bangladesh and industrial relations, in Muqtada et al. (eds)
- Hewett, P; Amin S., 2000 Assessing the impact of garment work on quality of life measure, *Bangladesh Institute of Development Studies*. www.bids-bd.org/
- Islam M.S., Rakib M.A. and Adnan A., 2016 Ready-Made Garments Sector of Bangladesh: Its Contribution and Challenges towards Development, *Journal of Asian Development Studies*, 5(2), 50-61
- Islam, M. A., 2013 Sustainable Business Environment, A Challenge For The Future. 24th Batexpo 2013, 27-28
- Islam, M.F., 2015 Job Dissatisfaction of Bangladeshi Garment Workers: Identification of Causes & Remedies, *Stamford Journal of Economics*, 2(1), 114-127
- Jamaly, R., & Wickramanayake, E., 1996 Women Workers in the Garment Industry in Dhaka Bangladesh, *Development in Practice*, 6(2), 156-161. Retrieved from: <http://www.jstor.org/stable/4028981>

A Quest for Job Dissatisfaction Factors of Bangladeshi Women Garment Workers

- Khan, S.I., 2001 Gender Issues and the Ready Garment Industry of Bangladesh: The trade Union Context. In R Sobhan and N Khundker (eds.) *Globalization and Gender: Changing Patterns of Women's Employment in Bangladesh*, Dhaka: University Press Ltd
- Kabeer, N., 2001 *Bangladeshi Women Workers and Labour Market Decisions: The Power to Choose* (Dhaka, UPL)
- Kabeer, N., 2004 Globalization, labour standards and women's rights: dilemmas of collective (in)action in an interdependent world, *Feminist Economics*, 10(1), 3–36.
- Kabeer, Naila., 1991 Cultural Dopes or Rational Fools? Women and Labour Supply in the Bangladesh Garment Industry. *European Journal of Development Research*, 3, 133-160.
- Khundker, N., 2002 Globalization, Competitiveness and Job Quality in the Garment Industry in Bangladesh, Chapter 3 in Muqtada, M. et al. (eds), and Bangladesh: Economic and Social Challenges of Globalization, study prepared for the ILO Geneva, UPL, Dhaka.
- Kossek EE, Ozeki C., 1999 Bridging the work–family policy and productivity gap, *International Journal of Community, Work, and Family*, 2(1), 7–32
- Locke, E.A., 1976 The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology*, Chicago: Rand McNally, 1297-1349
- Miller H & Rosse J., 2002 Emotional reserve and adaptation to job dissatisfaction, *The psychology of work: theoretically based empirical research*. Hillsdale, NJ: Erlbaum.
- Majumder P. & Begom A., 2000 The Gender Imbalances in the Export Garment Industry in Bangladesh: Policy Research Report on Gender and Development. *Washington, DC: World Bank*
- Muqtada, M., 2002 Macroeconomic Stability, Growth and Employment: Issues and Considerations Beyond the Washington Consensus, mimeo, ILO, Geneva.
- Nankervis A & Compton R., 2002 *Strategic Human Resource Management* (4th ed.). Thomson: Victoria, Australia.
- Noe R. A. & Hollenbeck J R et al., 2007 *Human Resource Management: Gaining a competitive advantage*. McGraw-Hill: USA.

- Majumder, P.P. 2003 Health Status of the Garment Workers in Bangladesh. Agrambagh, Motijheel, Dhaka: Bangladesh at Associates Printing Press. Sobhan, R. and. Khundker, N. 2001. Globalization and Gender. Dhaka, University Press Limited.
- Majumder P.P. & Begum A., 2000 The Gender Imbalance in the Export Oriented Garment Industry in Bangladesh, *The World Bank, Development Research Group/Poverty Reduction and Economic Management Network*. Retrieved from: <http://www.worldbank.org/gender/prr>.
- Rahman, M. 2002. Bangladesh's External Sector in FY 2001: Review of Performance and Emerging Concerns. In R. Sobhan (Ed.), Bangladesh Facing the Challenges of Globalization: A Review of Bangladesh's Development, *Centre for Policy Dialogue*, Dhaka.
- Rubel M. R. B.& Kee D. M., 2013 Inside the Ready-Made Garment (RMG) Industry: The Role of Perceived Support on Employee Performance. *Middle-East Journal of Scientific Research*, 18 (7), 1023–1034.
- Rachel Heath & A. Mushfiq M., 2015 Manufacturing growth and the lives of Bangladeshi women, *Journal of Development Economics*, 115, 1–15
- Shabnam S & Sarker A. R., 2012 Impact of CSR and Internal Marketing on Employee Job Satisfaction and Organizational Commitment: A Case Study from Export-Oriented SMEs in Bangladesh. *World Journal of Social Sciences*, 2(7), 24-36
- Sattar, Z., 2015 Strategy for Export Diversification 2015-2020: Breaking into new markets with new Policy Research Institute of Bangladesh.
- Stitched up, July, 2011 Women workers in Bangladeshi garment sector, war on want., Retrieved from: <http://www.waronwant.org/sites/default/files/Stitched%20Up.pdf>
- Spector P. E, 1997 *Job Satisfaction: application, assessment, cause, and consequences*. London: Sage press.
- Sadrul H SSM & Akhtar N et al, 2001 Employee's View on Job Satisfaction: A Study on Garments Industry, *Indus Journal of Management & Social Sciences*, 5(1), 1-9
- Yunus, M., Mondal, 2015 Assessment of Direct and Indirect Impacts of Export Processing Zones on the Economy of Bangladesh, Research program conducted by BIDS and their client was Bangladesh Export Processing Zones Authority (BEPZA)

A Quest for Job Dissatisfaction Factors of Bangladeshi Women Garment Workers

Different online sources:(From where data were also retrieved)

http://epzbangladesh.org.bd/exports/export_report/comilla-export-processing-zone
<http://www.bgmea.com.bd/home/pages/TradeInformation>
<https://europa.eu/eyd2015/en/fashion-revolution/posts/exploitation-or-emancipation-women-workers-garment-industry>
<http://rmgbd.net/bepza-enterprises-exceed-export-target-in-fy16/>
https://en.wikipedia.org/wiki/Bangladeshi_RMG_Sector
<http://www.bkmea.com/contribution-knitwear.html>
http://www.bkmea.com/financial_year_info.html
Export Promotion Bureau, Bangladesh;
<http://edb.epb.gov.bd/home/category/1>

Appendix

Table A: RMG Export, Contribution in Total Export of RMG, Number of Garments and Employment in RMG Sector

| Year | Export of RMG (in million US\$) | Total export of Bangladesh (in million US\$) | % of RMG's to total export | Number of garment factories | Employment in million workers |
|---------|------------------------------------|--|-------------------------------|--------------------------------|-------------------------------------|
| 2011-12 | 19089.73 | 24301.90 | 78.55 | 5400 | 4.00 |
| 2012-13 | 21515.73 | 27027.36 | 79.61 | 5876 | 4.00 |
| 2013-14 | 24491.88 | 30186.62 | 81.13 | 4222 | 4.00 |
| 2014-15 | 25491.40 | 31208.94 | 81.68 | 4296 | 4.00 |
| 2015-16 | 28094.16 | 34257.18 | 82.01 | 4328 | 4.00 |

Source: Export Promotion Bureau and Trade Information, BGMEA Compiled by Author (January, 2017).

Table B: Women Employment in South Asian Garment Industry

| Country | No of Workers | % of Women |
|------------|---------------|------------|
| Bangladesh | 4 Million | 90 |
| Sri Lanka | 31200 | 81 |
| India | 5.3 Million | 38 |
| Nepal | 52000 | 18 |
| Pakistan | 912000 | 15 |

Source: BGMEA 2015

Table C: Status of Comilla EPZ

| Year | Employment | Investment(Million US \$) | Export (Million US \$) |
|---------|------------|---------------------------|-------------------------|
| 2011-12 | 12776 | 156.64 | 712.3 |
| 2012-13 | 14713 | 177.7 | 889.24 |
| 2013-14 | 16474 | 201.09 | 1098.66 |
| 2014-15 | 21821 | 224.50 | 1373.28 |
| 2015-16 | 24343 | 254.68 | 1681.61 |

Source: BEPZ

Survey Questionnaire

Part I - Information of respondent's background

1. Age (not year of birth):
2. Marital Status: a. Married b. Single c. Divorced d. Widowed
3. Age: a. 14-18 b. 19-22 c. 23-30 d. 31-40 e. More than 40
4. Job level: a. Operator b. Supervisor/ foreman
5. Number of years working in the current organization:
a. 0-1 yrs b. 1-2 c. 2-3 d. 3-5 e. More than 5 years
6. Education level: a. Class 5 b. Class 8 c. SSC d. others

Part II: Exploring the reason behind the job dissatisfaction:

- Note the scale of the questions and carefully tick (✓) your option where 1= Highly dissatisfied, 2= Dissatisfied, 3= Neutral, 4= Satisfied, 5= Highly Satisfied.

| Factors | Highly dissatisfied | Dissatisfied | Neutral | Satisfied | Highly Satisfied |
|--------------------------------|---------------------|--------------|---------|-----------|------------------|
| Salary | | | | | |
| Accommodation problem | | | | | |
| Job security | | | | | |
| Work pressure | | | | | |
| Extent of supervision | | | | | |
| The working environment | | | | | |
| Behaviour of the co-workers | | | | | |
| The administration/ Management | | | | | |
| Health and safety | | | | | |
| Snacks & lunch | | | | | |
| Overtime/ Extra hour work | | | | | |
| Maintenance of working hours | | | | | |
| Attitude of society | | | | | |
| Maternity leave provision | | | | | |
| Promotion/ increment | | | | | |
| Performance appraisal | | | | | |
| Transportation facility | | | | | |
| Leave/ holiday | | | | | |
| Gender discrimination | | | | | |
| Sexual harassment | | | | | |
| Time for family | | | | | |
| Suitability of the job | | | | | |
| Training Facilities | | | | | |

Impact of Water Resource Management on Improvement of Livelihood: A study on Khulna Jessore Drainage Rehabilitation Project (KJDRP) in a Selected Area of Khulna District

Susmita Banik*

Abstract: *The study was conducted to analyze the socio-economic status of the people who are involved in participatory water resources management and find out the benefits derived from such participation in the Jalma Union of Khulna district. A total of 96 respondents were selected from the union using multistage random sampling method. The socio-economic status was measured by changes in land ownership pattern, household income, expenditure, land under operation and dwelling house condition. Tabular method of analysis was employed to attain that goal. In this paper the findings were presented in pre-project and post-project setting. The number of truly landless decreased from 47% to 24% after project intervention. The small farmers were 11% in pre-project situation and 21% in post-project situation. So, over the time the condition of the farmers improved due to their participation in KJDRP. It is evident from the analysis that after the completion of the project water stagnancy reduced in the low lying areas as reported by 84 respondents. Majority of the farmers (90) said that agricultural production has increased due to implementation of this project. Majority of the respondents (97.91%) said that the project expanded irrigation command area. Due to the irrigation problems farmers cannot increase the crop-frequency. In general, the findings suggest that crop frequency, employment, land ownership and household income have been higher during post-project period than that of pre-project period. The project also changed quality of life and living conditions of the participants. Most of the respondents got access to pure water and improved sanitation facilities. In the post-project period agricultural production and fish production have also increased. The water stagnancy has been reduced in the low lying areas. The creation of roads and culverts has improved communication facilities and movement of goods and people.*

1. Introduction

Water is a renewable natural resource, bearing multidimensional perspectives of ownership, business and management in the south west coastal zone of Bangladesh. Water is regarded as the most prominent driving force in regional economy (Mohal et al., 2006). On the other hand, inefficient use of natural

* Assistant Professor, Department of Economics, Stamford University Bangladesh

resources is one of the major contributors to poverty of Bangladesh. The vast majority of the rural people in the southern region are fully dependent on the natural resources for their livelihood. The proper management of water resources can reduce poverty and increase the overall livelihood situation. Increasing water demand and damages due to the natural disasters have made water management a challenging task in the zone (Chowdhury, 2010). Khulna and Jessore, two districts of the zone had been facing regular drainage congestion and water logging problems for quite some time due to active channel sedimentation and reducing drainage capacity of the rivers (IWM, 2009). For this situation the Government of Bangladesh undertook the regional program of construction of Khulna Jessore Drainage Rehabilitation Project (KJDRP). The ADB designed and funded the project with stated objective of reducing poverty and improvement of livelihood by alleviating river drainage congestion. The project was spread over eight thanas of Khulna and Jessore district in the Southwest coastal area covering 100,600 hectares. The project area was part of Coastal Embankment Project, which the USAID funded in mid 1960s. ADB earlier funded a similar project in the area, Khulna Coastal Embankment Rehabilitation Project²¹, implemented between 1986 and 1993. The KJDRP aimed to achieve its objectives by rehabilitating the river drainage infrastructure, by constructing a series of sluice gates and regulators on rivers to protect the *beels* (wetland) area under project from tidal and seasonal flood and supporting agricultural production.

The KJDRP has partially solved the prevailing water logging and drainage congestion problems as agricultural, social and economic benefits have been achieved to some extent (SMEC, 2002). People affected by water logging in Jessore currently ranges from 2%-20%, whereas in Khulna the number is around 10%. However, in some of the areas of south west coastal zone, water logging is still a crucial issue. In 2011, around 35%-70% population were found affected due to water logging at different sub-districts located in the west of Khulna (ECB,2011).

Investing in water is an economically sound decision. It can generate rapid returns that make them competitive with investments in other sectors. The purpose of the study is to clarify the linkages between poverty situation and water resources management (WRM). WRM enables the poor and small holders to achieve higher yields. Apart from the yield improvements, higher productivity partly stems from high land use intensity and cropping intensity. As a result, it increases employment for the poor, helps to improve and stabilize the wages and enables to negotiate their wage terms with their employers. So, it can affect on income, employment, prices, food security and overall advancement in livelihood of the beneficiaries.

1.1 Background of Khulna Jessore Drainage Rehabilitation Project (KJDRP)

As outlined in the Poverty Reduction Strategy Paper (PRSP) of the Government of Bangladesh (GOB), there is a clear linkage between water and poverty in the country. The importance of appropriate water management for development and sustainable growth of Bangladesh is very vital. The GOB formulated the National Water Policy in collaboration with the World Bank and ADB in early 1999 and defined the roles of the local government institutions in preparation and implementation of sub-regional and local water management plans. The local government institutions are responsible for the implementation of flood control, drainage and irrigation (FCDI) projects having command areas of up to 1000 hectares. In pursuance of the NWP objectives, the GOB issued Guidelines for participatory water management (GPWM) in April 2001. According to these guidelines, the stakeholders of participatory water management are comprised of local stakeholders, water management organization, local government institution, NGOs, community level, self help group, private sector services and other related public sector agencies.

The shortcomings of the Coastal Embankment Project in Southwest Bangladesh increased drainage congestion and caused prolonged inundation of farmlands, household lots, and the internal communication networks. Consequently, there was decrease in agricultural production, fewer employment opportunities, and deterioration of salinity conditions, which collectively led to lower living standards, reflected by 75% of the population living below the poverty line at the time of project formulation. The principal objective of the Khulna-Jessore Drainage Rehabilitation Project was to reduce poverty to below 60% by increasing agricultural production and creating on-farm employment in the project area. The objective was to be achieved by (i) mobilizing beneficiary participation in the design, implementation, and subsequent operation and maintenance (O&M) of the project facilities; (ii) rehabilitating the existing drainage infrastructure to reduce congestion and protecting the project area from tidal and seasonal flooding; (iii) providing support for the expansion of agricultural extension services that was necessary as flooded lands were returned to productivity; and (iv) improving the management of fisheries in polder areas to ensure a continuing supply of noncommercial fishes caught and consumed primarily by the poor. The Project was expected to cover one fourth of the Coastal Embankment Project area (approximately 100,000 hectares [ha]) of flat, low-lying alluvial lands with seasonally inundated depressions called “beels,” supporting a population of 800,000 in Southwest Bangladesh. It was envisaged that the Project would benefit the landless (who comprised nearly half of the project households) and landowners. Cropping intensity was expected to increase from 137% to 157% as a

result of increased production on 30,900 ha of arable land, which would lead to 63,000 tons incremental food production per year. The Project also was to lease Government land to 20 legally registered water management associations (WMAs), assist farmers to adopt integrated pest management practices (5,000 households), operate facilities to maximize agricultural and fisheries potential, and support homestead gardening (5,000 households) (ADB,2007).

2. Objectives of the Study

The research constitutes the following objectives:

1. To analyze the socio-economic status of the people involved in participatory WRM in the KJDRP.
2. To ascertain the type of benefits derived from such participation.

3. Literature Review

The literature support provided by secondary sources was not adequate. Very few publications were found about water resources development and poverty.

Binswanger and Harry (1993) studied to reduce poverty undertaking water resources management of India over the time 1971-81. Investments in water resources development, primary education, rural electrification and commercial banks have all contributed to increased crop output. There are complementarities among investment decisions of government, financial institutions and farmers and these can affect in growth rates and aggregate agricultural output.

Kerr (2002) carried out a study on the topic of sharing the benefits of watershed management in Sukhomajri of India. The increases in agricultural productivity and income over the years due to water development projects have also raised food availability and kept food prices low, which rendered benefits to the extremely poor households.

Cohen et al. (1980) conducted a study on participation's place in rural development: seeking clarity through specificity world development. They found that participation can be valued as prerequisite for successful water development matter for any development effort.

Khadim et al. (2013) conducted a study aiming at assessing the benefits achieved due to the implementation of Integrated Resources Management (IWRM) in parts of Khulna and Jessore districts. The study comes up with evidences of considerable advancements in regional livelihood *i.e.* flood resistance, cultivated lands, cultivable area, cropping intensities and food security due to IWRM.

Sahu (2008) carried out a study on Watershed Development Programme (WDP) of Rajasthan, India. The findings of the study suggest that watershed development

projects initiated to improve the economy and ecology of India's dry and semi-arid regions are economically viable and socially desirable.

Momtaz (2003) conducted a study on social and environmental impact assessment of Khulna –Jessore Drainage Rehabilitation Project in Bangladesh. The main findings of this study are that the affected community received adequate opportunity to participate in the project and made significant contributions towards the selection of the best option.

4. Methodology of the Study

The study is based on both primary and secondary data collected from various sources. The paper is partly derived from the author's thesis (Banik, 2010). The Jalma Union was purposively selected as study area. The following criteria were considered in selecting the area for conducting the study.

- Existing drainage and rehabilitation program.
- Accessibility of the areas.
- Secondary data and information are available for this study.

Jalma union is a densely populated union and its total population is 7650. Data collection is a crucial stage in any study. In this study both primary and secondary data were collected in order to fulfill the objectives of this study. The population data and other related information were collected from the union statistical bureau of Jalma. Other sources of data are books, governmental reports, international reports, journals and articles. Field level data were collected from 96 respondents through face to face interview method. In order to collect a reasonably accurate set of data respondents were revisited if there were any inconsistency or suspicion in the collected data. To make the sample representative the sample size was determined by following formula noted below (Kothari, 2015).

$$n = Z^2 \cdot p \cdot q \cdot N / e^2 (N-1) + Z^2 \cdot p \cdot q$$

Where, n= size of sample, N= Size of population, Z= Standard variation at a given confidence level, p= Sample proportion, q= 1-p, e= Standard error

$$\begin{aligned} \text{Sample size, } n &= (1.96)^2 \cdot 0.5 \cdot 0.5 \cdot 7650 / (0.1)^2 \cdot (7650-1) + (1.96)^2 \cdot 0.5 \cdot 0.5 \\ &= 7347.06 / 77.45 \end{aligned}$$

=94.86 = 95 Where, N=7650 Z= 1.96 for 95% level of confidence is determining the level of confidence are usually taken 95% to 99%. So here 95% level of confidence was taken as for representative figure. p= 0.5 (assumed) Therefore q=1-0.5= 0.5, e= 0.1 (in this case the value is 0.1, since the estimate should be within 10% of the true level).

During the period of interview keen attention was paid in the process of listening, paraphrasing and note taking. In this study, tabular technique was extensively used to bring into focus the whole picture of analysis.

5. Findings of the Study

5.1 Land Ownership Pattern

Ownership of land was calculated by summing up homestead land together with total land cultivated by the households and also the owned land cultivated by others. The respondents were categorized as destitute, truly landless, functionally landless, marginal, medium, small and large farmer. It is observed from Table 1 that both in pre-project and post- project period the percentage of landless farmer is higher than that of other category of farmer. The 46.9% was truly landless. They have homestead, no land. Fifteen percent respondents are functionally landless after project intervention. But in pre-project situation the percentage was 22.91%. Findings suggest in general that after project intervention, the landlessness decreased in number and the landownership of small and marginal farmers increased gradually. The percentage of medium farmers increased in the post-project than that of pre-project time. Before project intervention, in this study area there was no large farmer. But in post-project period 3.12% farmers had homestead and land over 7.50 acres.

Table 1: Distribution of the Respondents According to their Land Ownership

| Category of Respondents | Number of respondents | | Percentage (%) | | Cumulative Percentage (%) | |
|---|-----------------------|--------------|----------------|--------------|---------------------------|--------------|
| | Pre-project | Post-Project | Pre-project | Post-Project | Pre-project | Post-Project |
| Destitute (No homestead and land) | 3 | 1 | 3.04 | 1.04 | 3.04 | 1.04 |
| Truly landless (Have homestead, no land) | 45 | 23 | 46.9 | 23.9 | 49.94 | 24.9 |
| Functionally landless(Have homestead and land up to 0.50 acres) | 22 | 15 | 22.91 | 15.8 | 72.85 | 40.74 |
| Marginal farmer(Have homestead and land up to 0.50 -1.50 acres) | 12 | 22 | 12.9 | 22.9 | 85.75 | 63.64 |
| Small farmer(Have homestead and land up to 1.51-2.50 acres) | 10 | 21 | 10.9 | 21.9 | 96.65 | 85.54 |

| Category of Respondents | Number of respondents | | Percentage (%) | | Cumulative Percentage (%) | |
|--|-----------------------|----|----------------|------|---------------------------|-------|
| | | | | | | |
| Medium farmer(Have homestead and land up to 2.51-7.49 acres) | 4 | 11 | 4.4 | 11.4 | 100 | 96.94 |
| Large farmer(Have homestead and land over 7.50 acres) | - | 3 | - | 3.12 | - | 100 |
| Total | 96 | 96 | 100 | 100 | - | - |

Source: Field survey, 2010

5.2 Yearly Household Income

Yearly income is considered as an important socio-economic and demographic variable which is very much important for household's livelihood. In the rural areas, household income depends on land ownership and its productivity, number of earning members, quality and composition of labor and the nature of employment, infrastructure and other facilities available, which enhance the scope as well as the return from income earning opportunities. Agricultural income is a major earnings opportunity. It is evident from Table 2 that before the project interventions, majority respondents (72.91%) earned less than 25,000 taka in a year. After project interventions, 4.16% respondents earned less than 25,000 taka. During pre-project period 22.91% respondents earned (25,001-50,000) Taka. In post-project period 41.66% respondents earned (25,001-50,000) Taka. During pre-project period only 4.05% respondents earned (50,001-75,000) Taka. The corresponding figure after post-project period was 33.00%. It is clearly evident that due to the participation of respondents in the project, the income of the participant households increased spectacularly.

Table 2: Yearly Household Income Pattern of the Study Area

| Category of yearly household income (Taka) | Number of respondents | | Percentage (%) | | Cumulative Percentage (%) | |
|--|-----------------------|--------------|----------------|--------------|---------------------------|--------------|
| | Pre-project | Post-Project | Pre-project | Post-Project | Pre-project | Post-Project |
| <25,000 | 70 | 4 | 72.91 | 4.16 | 72.91 | 4.16 |
| 25,001-50,000 | 22 | 40 | 22.91 | 41.66 | 95.82 | 45.82 |
| 50,001-75,000 | 4 | 32 | 4.05 | 33.00 | 100 | 78.82 |

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| Category of yearly household income (Taka) | Number of respondents | | Percentage (%) | | Cumulative Percentage (%) | |
|--|-----------------------|--------------|----------------|--------------|---------------------------|--------------|
| | Pre-project | Post-Project | Pre-project | Post-Project | Pre-project | Post-Project |
| 75,001-10,0000 | - | 14 | - | 14 | - | 92.82 |
| 10,0000 and above | - | 6 | - | 6.90 | - | 100 |
| Total | 96 | 96 | 100 | 100 | - | - |

Source: Field survey, 2010

5.3 Land under Operation

Cultivable land is an important factor of production. The households who have cultivable land or who can share in land can participate in crop production. Table 3 indicates that in pre-project period, most of the respondents 85.42% had operated 1-2 acres of land.

Table 3: Land under Operation of the Respondents

| Land Size (acre) | Number of respondents | | Percentage (%) | | Cumulative Percentage (%) | |
|------------------|-----------------------|----------------|----------------|--------------|---------------------------|--------------|
| | Pre-project | Post – Project | Pre-project | Post-Project | Pre-project | Post-Project |
| <1 | 6 | 3 | 6.25 | 3.13 | 6.25 | 3.13 |
| 1-2 | 82 | 77 | 85.42 | 80.20 | 92.67 | 83.33 |
| 3-4 | 8 | 14 | 8.33 | 14.50 | 100 | 97.83 |
| 5-6 | - | 2 | - | 2.17 | - | 100 |
| Total | 96 | 96 | 100 | 100 | - | - |

Source: Field survey, 2010

Due to drainage congestion, they did not produce the crops year round. So, their income level was too low to maintain a decent livelihood. After the interventions of KJDR, 80.20% respondents have operated on 1-2 acres of land. But, they earned more than the pre-project period. Because, in one acre land, they produced crops two or three times in a year. If the land location in project area is in low-laying side, then a farmer can produce crops two times in a year. But if the land location in project area is in upper laying side, then a farmer can produce crops three times in a year. On the other side, 8.33% farmers had operated 3-4 acres of land in pre-project period. But in post-project period, 14.50% farmers have

operated on 3-4 acres. In pre-project period, no farmer had operated on 5-6 acres. But in post-project period 2.17% farmers operated on 5-6 acres.

5.4 Crop-Frequency of the Study Area

If a farmer can cultivate more number of crops depending on his cultivable land with maximum utilization of resources, he can earn more from cultivation than those of other farmers who cultivate only a few crops. Now we can compare the Pre-project and Post-project crop frequency in the table below.

Table 4: Crop-frequency in Pre-project and Post-project Period

| Crop frequency (number) | Number of respondents | | Percentage (%) | | Cumulative Percentage (%) | |
|-------------------------|-----------------------|--------------|----------------|--------------|---------------------------|----------------|
| | Pre-project | Post-Project | Pre-project | Post-Project | Pre-project | Post – Project |
| 1 | 52 | 6 | 54.16 | 6.25 | 52.19 | 6.25 |
| 2 | 44 | 43 | 45.84 | 44.79 | 100 | 51.04 |
| 3 | - | 47 | - | 48.96 | - | 100 |
| Total | 96 | 96 | 100 | 100 | - | - |

Source: Field survey, 2010

Table 4 demonstrates that in the pre-project period, 54.16% respondents said that they produced one crop in the whole year. They could not produce more crops due to drainage congestion which occurred in costal embankment project area. Due to intervention of KJDRP, drainage congestion was reduced. It not only increased the agricultural productivity but also increased the crop frequency. In post-project period, three crops in a year have been cultivated by maximum respondents (49%). The dominant cropping patterns in the area were noted as transplanted aman-pulses, aman-rabi, aman-boro.

5.5 Expenditure of the Respondents

Table 5 displays the expenditure patterns of households during the pre-project and post-project situations. It is striking to observe that during pre-project period about 44 and 33 percent households spent in the range of Tk. 15,000-24,000 and Tk. 25,000-34,00 per year. The corresponding figures in post-project situation were 12 and 26 percent. Households spending Tk.35, 000-44,000 and Tk. 45,000-54,000 represented 16 and 4 percent respectively. The corresponding percentage figures during post-project period were 24 percent and 10 percent respectively. During pre-project period no household spent above Tk. 65,000. Sixteen percent households spent in this range in post project situation. The cumulative

percentage figures depict the picture more conspicuously. It is clear that after the project implementation, income and expenditure of the participant households increased significantly.

Table 5: Yearly Expenditure Pattern of the Study Area

| Category of Respondents | Number of respondents | | Percentage (%) | | Cumulative Percentage (%) | |
|-------------------------|-----------------------|--------------|----------------|--------------|---------------------------|---------------|
| | Pre-project | Post-Project | Pre-project | Post-Project | Pre-project | Post –Project |
| Tk15,000-24,000 | 42 | 11 | 43.75 | 11.7 | 43.75 | 11.7 |
| Tk25,000-34,000 | 32 | 26 | 33.33 | 26.0 | 77.08 | 37.7 |
| Tk35,000-44,000 | 15 | 23 | 15.62 | 23.9 | 92.7 | 61.6 |
| Tk45,000-54,000 | 4 | 9 | 4.16 | 10.0 | 96.86 | 71.6 |
| Tk55,000-64,000 | 3 | 12 | 3.12 | 12.5 | 100 | 84.1 |
| Tk65,000-74,000 | - | 10 | - | 10.0 | - | 94.1 |
| TK75,000-84,000 | - | 5 | - | 5.90 | - | 100 |
| Total | 96 | 96 | 100 | 100 | - | - |

Source: Field survey, 2010

5.6 Dwelling House Condition

In rural areas, the housing pattern is not the same throughout. There are mixture of full pucca, semi-pucca, iron sheet wall and roof, bamboo wall with iron sheet roof. It is evident from the Table 6 that in both pre-project and post-project period maximum respondents lived in bamboo made houses. The percentage of bamboo made house was 67% in pre-project period. But in post-project period the percentage decreased to 47%. So, it may be claimed that after project intervention their housing pattern has improved. About twenty-six percent respondents lived in bamboo wall and iron sheet roof and 19% respondents lived in iron sheet wall and roof in post-project period. The percentage of full pucca house owners is much higher than the national rural average (1.9%) in study area after project intervention (ADB,2003).

Table 6: Distribution of Dwelling House Condition of Respondents

| Land Size | Number of respondents | | Percentage (%) | | Cumulative Percentage (%) | |
|----------------------------------|-----------------------|--------------|----------------|--------------|---------------------------|--------------|
| | Pre-project | Post-Project | Pre-project | Post-Project | Pre-project | Post-Project |
| Full pucca, | 1 | 2 | 1.04 | 2.08 | 1.08 | 2.08 |
| Semi-pucca | 4 | 6 | 4.17 | 6.25 | 5.21 | 8.33 |
| Iron sheet wall and roof | 9 | 18 | 9.37 | 18.75 | 14.58 | 27.08 |
| Bamboo wall with iron sheet roof | 18 | 25 | 18.75 | 26.04 | 33.33 | 53.12 |
| All bamboo made | 64 | 45 | 66.67 | 46.88 | 100 | 100 |
| Total | 96 | 96 | 100 | 100 | - | - |

Source: Field survey, 2010

5.7 Perception of Respondents about Benefits from the KJDRP of Jalma Union

Regarding the benefits derived from the project, it is noted that the project succeeded in reducing water stagnancy. It increased agricultural production and irrigation facilities and reduced intrusion of saline water. The poor as well as non poor both were benefited from the project. It was reported that in the pre-project period, drainage congestion occurred in Jalma union due to costal embankment project in this area. To solve the problem KJDRP was started by ADB and BWDB. It is evident from Table 7 that with the start up of the project water stagnancy reduced in the low lying areas as reported by 84 respondents. Maximum farmers (90) said that agriculture production has increased due to implementation of this project.

In summary, it may be concluded that the implementation of the project generated benefits to the participant households. Water stagnancy and intrusion of saline water decreased substantially. Crop production, fish production and irrigation of land for agricultural production increased significantly. The project helped in overall economic development of the locality.

Table 7: Benefits Derived from the KJDRP Interventions

| Nature of benefit | No. of respondents (n=96) | Percentage (%) |
|---|---------------------------|----------------|
| 1. Water stagnancy reduced in the low lying areas | 84 | 88 |
| 2. Agricultural production has been increased | 90 | 94 |
| 3. Scope of fish production has been increased | 68 | 70 |
| 4. Micro-credit facilities availability of members | 69 | 71 |
| 5. Saline water intrusion has been controlled | 86 | 90 |
| 6. Economic development occurred | 75 | 79 |
| 7. Irrigation facility at a lower cost | 89 | 93 |
| 8. Training facilities available | 45 | 47 |
| 9. Savings Habit developed | 42 | 44 |
| 10. Communication facilities improved due to construction of roads and culverts | 49 | 51 |

Source: Field survey, 2010 Note*: Multiple answers are recorded

5.8 Members Opinion to Improve Functions of WMCAs

Water Management Co-operative Association (WMCAs) is a registered organization at the village level comprised of one /several villages responsible for the management of a particular water resource drainage/flood control sub-project along with other activities.

Table 8: Suggestions for Improvement of WMCAs Activities

| Suggestions | No. of respondents (n=96) | Percentage (%) |
|--|---------------------------|----------------|
| 1. Arranging sweet water fish farming through excavation of canals | 87 | 90.62 |
| 2. Facilitate boro cultivation through establishment of deep tube well | 91 | 94.79 |
| 3. Selecting suitable management committee through general election for ensuring transparency and accountability | 75 | 78.12 |

| Suggestions | No. of respondents (n=96) | Percentage (%) |
|--|---------------------------|----------------|
| 4. Repair and improvement of embankment and roads | 79 | 82.29 |
| 5. Ensuring sweet water availability by stopping intrusion of saline water | 76 | 79.16 |
| 6. Expanding irrigation command area | 94 | 97.91 |
| 7. Distributing the canal through appropriate policies | 69 | 71.87 |
| 8. Brining all families under the umbrella of the WMCAs | 58 | 60.41 |

Source: Field survey, 2010 Note*: Multiple answers are recorded

It is observed from Table 8 that majority of the respondents (97.91%) said that the project expanded irrigation in command area. Due to the irrigation problems farmers cannot increase the crop-frequency. Here, we have considered the multiple answers. On the flip side, 94.79% respondents agreed that to increase boro cultivation deep tube wells are required to be established. Because in the boro season farmers cannot use the river water due to increase of salinity of water. So, they depended on the deep tube well. Suggestions from 90.62% respondents indicate to take steps for sweet water fish farming through excavation of canals.

5.8.1 Further Research Findings on Khulna Jessore Drainage Rehabilitation Project (KJDRP)

In an attempt to explore further evidence on livelihood improvement, findings from a recent study in the same area were unveiled. Khadim et al. (2013) carried out a study which observed the changes in water logged areas from 2002 to 2012. Due to effective implementation of IWRM, the capacity of drainage channels have increased and water logging problems in the area have decreased to a significant extent.

Table 9: Landuse Change in KJDRP Area

| Land use change in study area | Area (ha) | | % Increase/Decrease |
|-------------------------------|-----------|--------|---------------------|
| | 2002 | 2012 | |
| Open Water | 8558 | 2556 | -70.13 |
| Agricultural Land | 68,187 | 71,543 | +4.92 |
| Settlement | 30,464 | 33,111 | +8.69 |

About 6.64% of open water areas vanished in 2012. This was due to the land development works as well as improved river capacities of the area due to IWRM implementation. The level of food security in the area has undergone substantial changes from 2002 to 2012. Food security was measured by food availability, access, utilization and stability of a particular community and these parameters depend on a number of agricultural and socio-economic indicators such as cultivable lands, per capita food production, percentage of household food expenditure, degree of access to basic needs, stability of food prices and supply, etc.

Khadim et al. (2013) further reveals that at present, farmers grow more than one crop every year. Single cropped lands occupy around 0.4% to 14% of the entire study area. Double cropped lands occupy about 50% - 98% areas in five sub-districts (Batiaghata, Monirampur, Jessore Sadar, Abhaynagar, Keshabpur) of the study area and triple cropped areas occupy about 25% - 49% areas in Jessore Sadar, Avhoynagar, Keshabpur, Monirampur and Phultala sub-districts. Further, there have been notable advancements in irrigation coverage, cropping intensity and food production in the area from 2002 to 2012. Irrigation coverage has increased from 65% of Net Cultivable Area (NCA) in 2002 to 89% of NCA in 2012. Consequently, cropping intensity increased from 164% to 221% and the per capita food production increased from around 221.38 kg/capita to around 238 kg/capita, reflecting a 7.5% increase.

6. Conclusion

From the analysis carried out above it is observed that there have been strong linkages between water resources management and poverty reduction and livelihood improvement. From the perspective of Bangladesh, WRM geared up agriculture, to allow planting and harvesting of crops without undue risk of drainage congestion and floods. With increasing population pressure, the importance of water resources management has greatly increased. Due to the CEP, the Khulna and Jessore area had been affected in drainage congestion which also adversely affected the agricultural productivity. To get rid of this problem, GOB and ADB had implemented the KJDRP in Khulna and Jessore area. A comparative analysis has been accomplished between pre and post-project period of KJDRP in Jalma union. By analyzing the study results, it was observed that crop frequency, employment, land ownership pattern, household income have been higher than that of the pre-project period. It has also changed their quality of life and living standard. Most of the respondents got access to pure drinking water and use of modern toilet facility. In the post-project period agricultural production and scope of fish production has increased. The water stagnancy has been reduced

in the low lying areas. The creation of roads and culverts has increased the movement facilities. In the dry season, however, the salinity has increased in the study area. Farmers cannot cultivate the boro crop by using river water. So, BWDB can take steps to increase the irrigation facility in command area. Besides, BWDB should set up the appropriate policies in distributing canal waters to the fishermen. The access of the BWDB to rural areas has been seen as a vehicle to reach these areas to intervene directly in the reduction of poverty and socio-economic development of the project participants.

References

- ADB,2007 Project Performance and Evaluation Report in Bangladesh: Khulna-Jessore Drainage Rehabilitation, Project. Project Number: PPE: BAN 21087 Loan Number: 1289-BAN(SF), November 2007
- Binswanger, H,1993 To Reduce Poverty Take Water Resources Management. *Journal of Economics*, 15-23.
- Banik, S, 2010 The Linkages Between Poverty and Water Resources Management- A Study on KJDRP in Jalma Union.A Honors Thesis Submitted to Economics Discipline, Khulna University, Khulna, Bangladesh, March,2010
- Chowdhury, J.U,2010 Integrated Approach and Equity Principles to Promote Sustainable Water Management in Bangladesh, Paper Presented at the Regional Training of SAWA Fellows on Interdisciplinary Research in Water Resources Management, Bangladesh, 2010.
- Choen, J.M and Uphoff,N.T,1980 Participation's place in rural development: seeking clarity through specificity, *World Development*, 8(30): 213-235.
- ECB,2011 Flooding and Prolonged Water Logging in South West Bangladesh, Co-Ordinate Assessment Report, Emergency Capacity Building Project, Dhaka
- IWM, 2009 Mathematical Modeling Study for Planning and Design of Beel Kapalia Tidal Basin, Final Report, Bangladesh Water Development Board (BWDB), Dhaka
- Kerr, J, 2002 Sharing the Benefits of Watershed management in Sukhomajri, India," in Stefano Pagiola, Joshua Bishop and Natasha landell-Mills, eds., Selling Forest Environment Services: Market-Based Mechanisms for Conservation and Development, Earthscan, London, pp.63-75.

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- Kothari, C.R.,2015 Research Methodology methods & Techniques, New Age International Limited, Publishers
- Khadim, F.K.
Kar,K.K, Halder,
P.K, Rahman, M.A,
Morshed,
A.K.M.M, 2013 Integrated Water Resources Mangement(IWRM) Impacts in South West Coastal Zone of Bangladesh and Fact-Finding on Tidal River Mangement(TRM). *Journal of Water Resource and Protection*, 2013, 5,953-961.
- Karim,R and
Mondal, R,2017 Local Stakeholder Analysis of Tidal River Management (TRM) at Beel Kapalia and the Implication of TRM as a Disaster Management Approach. *Hydrology* 2017; 5(1): 1-6
<http://www.sciencepublishinggroup.com/j/hyd>
doi: 10.11648/j.hyd.20170501.11 ISSN: 2330-7609 (Print); ISSN: 2330-7617 (Online)
- Mohal,N,
Khan,Z.H, and
Rahman,N, 2006 Impact of Sea level Rise on Coastal Rivers of Bangladesh,” *9th Inter- national Conference on River Symposium and Environmental Flows*, Brisbane, 4-7 September 2006, p. 66.
<http://archive.riversymposium.com/2006/index.php?element=06>
MOHALNasreen
- Momtaz, S.,2003 The practice of Social Impact Assessment in a developing Country: The Case Of social and environmental Impatassessment of Khulna-Jessore Drainage Rehabilitation Project in Bangladesh. *Impact Assessment and Project Appraisal*, Volume 21, number 3, June 2003, pages 125-172.
- SMEC,2002 Khulna Jessore Drainage Rehabilitation Pro- ject,Final Report, Bangladesh Water Development Board (BWDB), Dhaka, 2002.
- Sahu, S.K.,2008 Cost Benefit Analysis of Watershed Development Programme: A Study of Bichhiwada Project, Udaipur, Rajasthan, India. *Munich Personal RePEc Archive*, MPRA Paper No. 17134, posted 6. September 2009 19:16 UTC

Corporate Social Responsibility: History, Research Trends and Practices

Md. Mamin Ullah*

Abstract: *The increasing interest among the academics, researchers, pressure groups, and business firms led to the development of substantial literature on corporate social responsibility and its related concepts. This study aims to critically evaluate the historical development of CSR, research trends and current practices. The study has found that in spite of growing discussion and debates, still there is a lack of well-agreed definition of CSR. Again, the disagreement among the academics regarding the historical developments of CSR is notable. The trend of research on CSR has been moving from the discussion of the macro-social effects to organizational-level effects. The contemporary research is giving an excessive importance on the business case for CSR. This study recommends that the researchers and academics should strive to develop a concrete definition of CSR. Again, more research should be conducted to develop the conceptual models and mechanisms that will better explain CSR and its related dimensions. By presenting a historical scenario along with the research trends and current practices, this research may give the readers a vivid picture on CSR.*

1. Introduction

1.1 Background

Porter & Kramer (2006) stated that “Successful corporations need a healthy society (and) at the same time a healthy society needs successful companies”. Actually the mutual interdependence of a business and the society has created the notion of CSR. Over the last decades, the notion of Corporate Social Responsibility (CSR) has continued to grow in its concepts and importance. Thus, it has become a subject of significant debates, research, theory building, and practical applications.

Although CSR has become an important issue for today’s companies, it is not free from criticism. A long debate took place on explaining and defining the CSR concept. Claydon (2011) rightly stated that during the last century the concept of CSR “has experienced a period of constant defining and modelling, re-defining, and re-modelling”. The concept of CSR has been developed and refined over the

* Assistant Professor, Department of Management Studies, University of Barisal, Barisal-8200, Bangladesh

years. Since the 1950s, CSR and its related terms have been conceptualized and explained in different areas like corporate social responsiveness, corporate social responses, corporate social performance, corporate citizenship, and corporate philanthropy (Carroll, 1979). Lot of debates and discussions are going on regarding the concepts and theories of CSR. Levitt (1958) published an article entitled '*The Dangers of Social Responsibility*' in Harvard Business Review. In this article he stated that 'government's job is not business, and business's job is not government'.

One important point to notice is that CSR has been changing from altruistic base to strategic or instrumental base for achieving sustainable development (Lee, 2008). It has gained an institutional status for regulators due to its linkage with compliance to law and ethical practices. Although CSR has acquired different meanings over time, it has combined some features or characteristics.

These characteristics make it unique in representing a set of obligations, responsibilities, stakeholder rights, and all forms of philanthropic activities (Moon, 2002). The term CSR has been transforming from vague to an indefensible component. As a result, business firms are now recognizing 'CSR' as a strategic component in achieving organizational objectives.

Given that there is an increasing debate among the scholars regarding its concepts and trends in CSR research and practices, this article critically reviews the historical developments of CSR concepts, research trends, current practices, and research agenda of CSR.

1.2 Rationale and Implications

Since the last three decades, CSR has been receiving overwhelming attentions from academia (Gray et al., 1995). Nevertheless, there is an increasing change in theoretical developments and research trends in this field (Deegan and Gordon, 1996). According to Williams et al. (2006), the current state of theory and analysis of CSR is embryonic and accordingly there exists no general agreement on a definition for CSR. Garriga and Melé (2004) stated that CSR landscape of theories and different approaches are complex, unclear and also controversial. Given these debates and increasing importance of CSR, we need research papers covering the critical discussion of these issues. Unfortunately, very few studies are available in this regard. Again, although numerous empirical studies are available in CSR fields, there is a lack of comprehensive literature review on the conceptual evolution of CSR and its related concepts, research trends, and practices. This study critically reviews the concepts, research trends, and CSR practices in developing economies along with an analysis of research agenda.

This research has several implications for researchers, academics, and managers. First, since this is a comprehensive review paper, it will help the academics and researchers get a sound understanding of different aspects of CSR. Second, this paper is supposed to provide a concrete scenario of conceptual evolution of CSR and its related concepts. It will help the researchers understand the basic underlying themes and historical movement of CSR. Third, this paper serves as a set of guidelines for managers and practitioners. Fourth, since the paper explores the current debates and developments, it will contribute to the existing field of research. Fifth, it serves as a study manual for the academics. Sixth, the discussion and findings of this study are supposed to help the business firms and governments in case of policy adoption. Last but not the least, the paper identifies the areas of research gap. So, it will open the door for future research.

1.3 Structure

As noted earlier, the basic objective of this study is to critically review the historical developments of CSR concepts, research trends, and current practices. Accordingly, this is mainly a review paper by nature. In addition to an account of background and justification of the study, the remainder of the paper is organized in some logical sections.

First, a brief methodology of this study is presented in section 1.4. In this section, we have provided a brief account of the total review process. In the second section, we have reviewed the historical developments of CSR and its related concepts. In section 3, we have reviewed the trends in CSR research. Section four consists of a brief account of CSR practices in developing economies. Finally, we have identified and analyzed the research agenda in section 5.

1.4 Methodology

An elaborative and organized methodological section is the prime part of a research paper. This is also true in the case of a review paper. Literature review is critically important as it enables to structure research and to build a reliable knowledge base in the respective field (Tranfield et al., 2003). We decided to conduct a comprehensive review rather than meta-analysis as meta-analytic techniques have been criticized for their failure to consider heterogeneity in both subjects and methods, and have also been accused of over-generalizing results and over-emphasizing quantitative comparisons of substantively different literatures (Slavin, 1986). Since CSR is a relative term, it has wide variety of definitions and forms. Therefore, meta-analysis is not suitable option for this review paper.

In order to achieve the stated review objective, a systematic review of literature was conducted by using an archival method. By conducting a comprehensive narrative review rather than a meta-analysis, we are able to examine the different

ways in which the concepts, theories, research trends, existing practices, and research agenda of CSR are conceptualized and measured in the literature, and explore the theory underpinning the results. This is critically important when the field of research is relatively vast and complex.

We emphasized the current knowledge including substantive findings, as well as theoretical and methodological contributions to the fields of CSR. In preparing this review paper, we focused on a number of relevant research topics including the great advocates and researchers working in the fields of CSR, trends in CSR research along with supportive studies, recent major advances and discoveries, significant gaps in the research, current debates, and ideas of where research might go next.

We selected the papers for the review on the basis of relevance, reliability, and credibility. As a part of our review policy, we gave emphasize on the articles published in world's leading journals like Harvard Business Review, Academy of Management Journal, Academy of Management Review, California Management Review, and so on. Thus, it is expected to increase the reliability and credibility of the study. However, we also focused on the articles published in emerging journals. But special consideration was taken in selecting the journals. A major portion of the journals were selected based on the citation index. We focused on the world's large and reputed databases in searching and selecting the papers for review. Some of the databases are Web of Science (ISI/Thompson Reuters), Scopus, Wiley Online Library, EBSCOhost, Cabell's, DOAJ, PsycInfo, Gale, Google Scholar, ResearchGate, Academia, and most importantly SSCI.

We followed six- steps methodological approach in conducting this study. First, we selected the topic and decided the areas of this literature review. Second, we decided the searchable databases and the journals for our review. Third, we collected the research papers using searchable databases.

Fourth, we applied exclusion criteria to confine our intention to CSR fields only. Fifth, we critically analyzed the relevant research papers. Finally, we structured and presented the review findings in a concrete manner.

The key search terms used in conducting the study include CSR, history of CSR, CSR research trends, CSR concepts, theories of CSR, current debates on CSR, CSR research dilemma, CSR advocates, CSR in developing economies, drivers of CSR, and so on.

2. A Note on Conceptual Evolution of CSR

The term 'CSR' passed a long way of transition. It is quite difficult to trace the root period of CSR development. However, the majority of the scholars agreed

that the root of CSR extends from before World War II. For example, Spector (2008) stated that the roots of the current CSR movement can be traced between 1945–1960. Hamidu et al. (2015) presented a comparative picture regarding how the definition of CSR was modified since 1950s. See table 1. In this section of the paper, we briefly discuss the historical developments of CSR concepts ranging basically from 1950. Hay and Gray (1974) termed the period between 1920s and 1930s as the ‘trustee ship management’ phase resulting a change both in society and business. According to Eberstadt (1973), the period between 1930s and 1950 is the ‘corporate period’. In this period, the corporation began to be considered as institutions that have social obligations to fulfill.

Table 1. Dimensions of CSR Definitions

| Period & Focus Area | Summary of Dimensions |
|---|--|
| 1950’s – 1960’s <ul style="list-style-type: none"> • Religious & Humane philosophies • Community development • Unregulated philanthropy • Poverty alleviation • Obligation to the society | <ul style="list-style-type: none"> • Philanthropy |
| 1970’s – 1980’s <ul style="list-style-type: none"> • Extension of CSR commitments • CSR as symbol of Corporate citizenship • Stakeholder relationship management • Corporate reputation • Socio-economic priorities • Bridging governance gap • Stakeholders rights • Legal & Ethical responsibilities | <ul style="list-style-type: none"> • Regulated CSR |
| 1990’s – 21st Century <ul style="list-style-type: none"> • Competitive strategy • Environmental protection • Sustainability • Internationalisation of CSR standards • Transparency & accountability | <ul style="list-style-type: none"> • Instrumental/Strategic CSR |

Source: Hamidu et al. (2015)

Actually, the term ‘Corporate Social Responsibility’ came into light when Bowen (1953) published his landmark book *Social Responsibilities of the Businessman*. This book is considered as the beginning work of the modern period of literature on CSR. Bowen (1953) explained the concept of ‘social responsibility’ and concluded that a businessman should adopt those policies that do not go beyond the interest of the society. However, the decade of the 1950s was more about ‘talking’ rather than ‘action’ with respect to CSR. Carroll (2006) stated that this period was about changing attitudes and learning among the business executives to get comfortable with CSR talk.

In the 1960s, there is a substantial growth in CSR literature. A notable contributor in the 1960s is the Clarence C. Walton. He addressed many aspects of CSR in his book *Corporate Social Responsibilities* (1967). The basic characteristics of this period are the noticeable manifestation of CSR. For example, Muirhead (1999) characterized the period from the mid-1950s to mid-1980s as a period of ‘growth and expansion’ of corporate contributions. In 1971, Harold Johnson published a book in which he explored the different frameworks and issues of business practices. He tried to explore the impact of different social issues on managerial decisions.

George Steiner’s contribution to CSR literature in 1970s is praiseworthy and notable. In 1971, he published a book entitled *Business and Society*. According to Steiner (1971), there is no doubt that a business firm is a profit-centered institution, but it should also help a society achieve its basic goals. In the 1970s, we see an increasing reference made to corporate social responsiveness (Ackerman, 1973; Ackerman and Baner, 1976), corporate social performance (CSP), as well as corporate social responsibility (CSR).

In the 1980s, there was an increasing focus on developing new or refined definitions of CSR. Most probably John (1980) is the first scholar who came up with the concept of corporate social responsibility. Earlier scholars actually used the term ‘social responsibility’ in general. So, credit can be given to Jones (1980) for adding the word ‘corporate’ to social responsibility. Although it is difficult to identify the core CSR issues in the 1980s, a ‘social responsibility agenda for the 1980s’ was set forth by William C. Frederick (2006).

In the 1990s, we see very few unique contributions to the concept of CSR. The pivotal themes and concepts that continued to grow and take center of debates included (CSP), stakeholder theory, business ethics, sustainability, and corporate citizenship. The *Academy of Management Journal* published a special issue on the subject of ‘stakeholders, social responsibility, and performance’ in 1999. Muirhead (1999) stated this period of corporate contributions as ‘diversification and globalization’.

In the 2000s, we see a trend of empirical research in addition to theoretical contributions to the concept and meaning of CSR. The major topics that are being researched and getting importance of debates in the 2000s are the stakeholder theory, business ethics, sustainability, and corporate citizenship. According to Carroll (2008), time will need to pass before broad generalizations can accurately be made concerning the early 2000s. In the early 2000s, we have seen a dominance of both theoretical and empirical research on CSR. The interesting finding is that most of the empirical studies attempted to examine the relationship between CSR and CSP.

Accordingly, it is clear that although CSR is definitely a global phenomenon, there are important intra-regional variations in practice. Now the question is: what is the future for CSR around the world? The most optimistic and acceptable answer is given by Steven D. Lydenberg in his book *Corporations and the Public Interest: Guiding the Invisible Hand*. He said that the world will see a long-term reevaluation of the role of corporations in society.

3. Trends in CSR Research

In the section 2, we explored how the CSR and its related concepts refined and flourished over a period of time. Then we summarized the features and core CSR concepts along with the pivotal works and advocates. In this section, we attempt to explore the trend of research in CSR and its related fields. For the implication and convenient discussion, the following discussion of this section is organized into three different sub-sections. At first, we focus on the theoretical research along with the key findings. Then we focus on the empirical research. Finally, we conclude this section by crafting a scenario of contemporary studies on CSR (from 2000 to till-to-date).

3.1 Theoretical Research in CSR

Since the 1950s, a notable number of theories have been developed on the CSR. For example, Milton Friedman (1970) came up a theory in 1970 what he termed as ‘the agency theory. The basic theme of this theory is that CSR generally creates conflict among the different interest groups. CSR programs are basically the resources wastage programs and these programs cannot bring better results. This theory greatly criticizes CSR as the managers use CSR for their personal benefits.

R. Edward Freeman (1984) explained the view of managers’ support of CSR succinctly what he termed as stakeholder theory. According to this theory, a manager generally satisfies a variety of stakeholders who can affect the firm’s outcomes. They emphasized the moral and ethical dimensions of CSR along with the firm’s interest for engaging in such activity. Jones (1980) explained the applicability of institutional and classical economic theories in CSR practices.

According to Jones (1989), we can apply the institutional approaches to explain the nature and extent of CSR. In 1991, Donaldson and Davis (1991) presented a theory where they stated that a manager should do the right thing. He or she should not concern about the effect of these 'right doing' decisions. This theory is termed as stewardship theory. This theory introduced huge debates and also drew substantial criticisms. We have seen an attempt to explain the applicability of strategic leadership theory in CSR practices. Waldman et al. (2006) launched this argument. According to Waldman et al. (2006), a business firm should consider CSR as an important strategic element.

Scherer and Palazzo proposed a new approach based on Jürgen Habermas's theory of democracy (2007). They stated that there is a trend of a business firm's role in a society. A business firm can exert political influence in a society. Reynolds and Yuthas (2008) studied the relationship between moral discourse and corporate social responsibility reporting. Bartlett and Devin (2011) conducted another major theoretical research in 2011. They provided a relationship framework between CSR and manager's communication.

Bartlett and Devin explained the relationship between management's communication and corporate social responsibility (2011). Crane and Glozer (2016) conducted a study on corporate social responsibility communication and identified the associated themes, opportunities and challenges. As we see, the concept of CSR started with the agency theory and is passing through the domain of strategic leadership theory. Unfortunately there is no consensus on the definition of CSR. CSR has been used as a synonym of business ethics and a tool of environmental policy in most of the papers. CSR has also been mixed up with corporate social performance and corporate citizenship. As a result, we have not found a unique model or theory of CSR till now. It makes us confused to compare the results across studies. The academics and researchers look forward to having an agreed-upon definition of CSR.

3.2 Empirical Research in CSR

Like theoretical papers, we see that there are a significant number of empirical studies conducted on CSR since 1950s. Although the number is less compared to the theoretical papers, the empirical papers have strong influence on the justification of the proposed theories. One interesting point is that the empirical research continued to start since 1990s. This is basically due to the lack of theoretical consensus among the advocates of CSR. McGuire et al. (1988) conducted a study examining the relationship between corporate social responsibility and firm financial performance. This first notable empirical study was conducted by Abowd et al. in 1990. They studied the dimensions of human resource decisions under the umbrella of CSR. Hillman and Keim (2001) studied

the impact of some social issues on stockholders' wealth. The result is the positive correlation between CSR and shareholders' wealth creation. Russo and Fouts (1997) conducted a study on environmental performance using regression analysis and found that there is a positive relation between environmental performance and financial performance.

As the time passed, researchers started to conduct empirical research on other dimensions like environmental performance, layoff programs, human resource decisions, and so on. Another notable point is that earlier studies used event study or regression analysis as basic research design. These studies basically investigated the answer to the question: What is the impact on the firm's profitability if CSR are adopted? The studies showed varying outcomes. There are some researchers who criticized the event study methodology. For example, McWilliams and Siegel (1997) questioned the use of the event study methodology to measure the outcomes of CSR. However, despite the criticism regarding the adequacy and accuracy of the above theoretical and empirical studies, these studies provide us a foundation for understanding the different aspects of CSR.

3.3 Contemporary Studies on CSR (From 2000 to till-to-date)

Since the concept of CSR is being explored till now, we are keenly interested to know regarding the latest works on CSR, especially in the 21st century. We summarize the most popular and widely cited articles in Table2. In this table, we only present the papers published in world's leading journals from 2000 to till-to-date.

Table 2: A list of Selected Contemporary Studies on CSR
 (from 2000 to till-to-date)

| Author(s) & Year | Nature | Methods | Findings |
|---------------------------------|-------------|---|--|
| Adams, C. (2002) | Empirical | Interviews conducted with seven large MNCs in UK and Germany. | Identification of internal contextual factors that affects the nature and extent of CSR reporting along with a more inclusive model of corporate social reporting. |
| Garriga, E. and Melé, D. (2004) | Theoretical | Literature Review | Each CSR theory presents four dimensions (profits, political performance, social demands and ethical values). There is a need for a new theory of CSR which should integrate these four dimensions. |
| Coupland, C. (2006) | Empirical | An analysis of web-based financial and | Organizations are beginning to increase attention to social and |

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| Author(s) & Year | Nature | Methods | Findings |
|---|-------------|---|---|
| | | CSR reports using a discourse/textual analytic approach | environmental issues. |
| Barnett, M. L. (2007). | Theoretical | Using a set of propositions | Developing a construct of stakeholder influence capacity that helps explain why the effects of corporate social responsibility on corporate financial performance vary across firms and time. |
| Campbell, J. L. (2007) | Theoretical | Using a set of propositions | Proposing an institutional theory of CSR. This theory states the circumstances under which corporations are likely to behave in socially responsible ways. |
| Cooper, S. M. and Owen, D. L. (2007). | Theoretical | Critical Review | There is a relationship between degree of institutional reform and enhanced corporate accountability |
| Scherer, A. G. and Palazzo, G. (2007). | Theoretical | Literature Review | Propose a new approach to define the new role of the business firm as a political actor in a globalizing society. |
| Basu, K. and Palazzo, G. (2008) | Theoretical | A process model of organizational sense making. | Identification of a set of cognitive, linguistic, and conative dimensions that guide CSR-related activities |
| Bebbington, J., Larrinaga, C. and Moneva, J. M. (2008). | Theoretical | Using an image restoration framework | The concept of reputation risk management is useful in understanding of CSR reporting practice. |
| Bhattacharya, C. B., Sen, S. and Korschun, D. (2008) | Empirical | Survey | There is a relationship between corporate social responsibility and talent recruitment. |
| Hess, D. (2008) | Theoretical | Using propositions | Introducing “democratic experimentalism”- a form of New Governance regulation. |
| Lee, M.-D. P. (2008). | Theoretical | Literature Review | They study found that there is excessive focus on the business case for CSR. |
| Matten, D. and Moon, J. (2008) | Theoretical | Applying two schools of thought in institutional theory | Discussed how and why corporate social responsibility (CSR) differs among countries and how and why it changes. |

| Author(s) & Year | Nature | Methods | Findings |
|--|---|---|--|
| O'Riordon, L. and Fairbrass, J. (2008). | Theoretical | Literature Review | Proposing a new analytical model for CSR decision making. |
| Fieseler, C., Fleck, M. and Meckel, M. (2010) | Empirical | Using a social network analysis | Stakeholder involvement via sustainability blogs is a valuable new practice for CSR communications and stakeholder engagement. |
| Archel, P., Husillos, J. and Spence, C. (2011) | Empirical | Interviews and document analysis | Stakeholder consultation processes create problematic functions. |
| Brønn, P. S. (2011) | Empirical | Survey | There is a positive relationship between marketing and CSR. |
| Haack, P., Schoeneborn, D. and Wickert, C. (2012) | Empirical | Using Equator Principles standard | Identification of the type and temporal development of language in the process of CR standardization. |
| Lanis, R. and Richardson, G. (2012) | Empirical | Choice-based sample of 40 corporations. Using content analysis techniques | There is a positive and statistically significant association between corporate tax aggressiveness and CSR disclosure. |
| Vallentin, S. and Murillo, D. (2012) | Theoretical | Using propositions | There is a relationship between Governmentality and CSR politics |
| Christensen, L. T., Morsing, M. and Thyssen, O. (2013) | Theoretical | Using a set of propositions | Inspirational CSR talk may be an important resource for social change. |
| Gallardo-Vázquez, D., and Sánchez-Hernández, M.I. (2014) | Empirical | Structural equation methodology based on partial least squares path modelling | There is a positive and significant effect of social responsibility orientation of firms on competitive success. |
| Will, G. M., and Hielscher, S. (2014) | Both a conceptual and an empirical approach | Drawing on the concept of ordonomics | Revealing critical insights into the micro-level analysis of the CSP-CFP link. |
| Lin, S. C., Chang, Y. R., and Dang, T.V. (2015) | Empirical | Using KLD or Kinder Lydenberg Dommini rating system on 500 | Intellectual capital affects the relationship between CSR and financial performance. Again, industry type moderates the direct |

Corporate Social Responsibility: History, Research Trends and Practices

| Author(s) & Year | Nature | Methods | Findings |
|--|-------------|--|---|
| | | largest companies in the American stock market | influence of CSR on financial performance. |
| Huang, H., and Zhao, Z. (2016). | Empirical | Content analysis | Political connection has positive influence on private companies' CSR. |
| Chatterjee, B., and Mitra, N. (2017). | Theoretical | Model proposal | Introducing the 'Chatterjee Model' that urges that CSR should contribute to the national agenda of a country. |
| Del Baldo, M., and Baldarelli, G. M. (2017). | Theoretical | Review Article | There is coherence among mission, governance and accountability and it is a key driver for effective business model. Sustainable business models derive from sustainable leadership models which include transformational, ethical-based and values-virtues-driven leadership. |

Source: Compiled by the Author

The key findings regarding trends in CSR Research show that CSR is a complex and multidimensional concept. The continuous debates and increasing research from different angles have made this field controversial (Garriga and Melé, 2004). Based on the analysis of the above sections, we can draw some conclusions regarding the trends of CSR research. *First*, there is an overall trend of research moving from theoretical to empirical studies. *Second*, both the empirical and theoretical research is going on simultaneously. *Third*, there is an increasing interest among the academics and researchers regarding the theoretical developments of CSR concepts. *Fourth*, the dimensions of empirical research are increasing. *Fifth*, earlier it was thought that CSR is a western concept and prevail only in developed countries. However, the scenario has been changed. CSR is now taking place at regional level (e.g. Huang and Zhao, 2016). Sixth, we see that CSR research is now taking place at organizational functional level like marketing, finance, accounting and so on (Brønn, 2011). Last but not the least; we see that different new dimensions are now considered as the wings of CSR like environmental sustainability, green management and so on. In fact, still the business and academics world have a lot to see regarding the boundary and nature of CSR.

4. CSR Practices in Emerging Economies

As stated earlier, the root of CSR emerged in 1950s in the United States. The extensive literature review suggests it. Although CSR largely prevailed in the developed countries for a long time, mainly the usage of the concepts of CSR remained in the US. Later it gradually entered the European Community, especially in the 1980s. Now the term CSR is not confined to the library and debates in the developed countries. This is basically a global phenomenon. According to Moon (2002), CSR is an equally contested concept. The challenges for CSR practices are basically characterized by the Millennium Development Goals (MDGs) in the developing countries. As the CSR and its related concepts are more or less established in the literatures of advanced countries, researchers and editors of the journals are now focusing on the CSR practices in developing economies like Bangladesh. Basically, the research world is keenly interested to know how the business firms in developing countries make a contribution to improving the governance, socio-economic, industrial relations and environmental conditions. There are a number of reasons to have special focus on the CSR practices in the developing economies.

First, a developing country is characterized by the rapid economic growth. Thus, it has the high potential markets to attract the new business firms. Second, Social and environmental crisis are acutely felt in the developing countries. Third, investment, globalization, and economic growth have high impact on developing economies. Finally, a developing country presents a distinctive set of CSR practices that are quite different from those of a developed country.

If we look into the CSR literature of developing countries, we can easily trace the current practices of CSR. There is a clear difference between the theoretical and empirical research in the developing countries. Most of the research papers are basically dealt with the theoretical aspects of CSR. A study showed that more than 80% of CSR literature is dominated by the quantitative methods in the developing countries like USA and UK. On the other hand, the maximum CSR literature in developing countries is qualitative. It implies that CSR is at the infant stage at the developing economies.

The CSR concepts and practices in a developing economy differs with a developed economy in terms of nature, affecting factors, political decision, role of interest groups, environmental concern and so on. Majumdar (2016) presented an overall scenario of CSR practices in developing economies. See Table 3.

Table 3: Emerging Economies, CSR Issues and Perceived Determinants Affecting CSR Practices

| Emerging Economies | CSR issues | Determining factors affecting standard application | Supporting Studies |
|--------------------|--|--|--|
| Bangladesh | Disaster management Philanthropic engagement | Regulatory regime Level of economic development Corruption Weak socio-political environment | Belal ,2001; Christopher, 2006; Sayeed, 2007; The Daily Star, 2008a; Chevron, 2008 |
| Brazil | AIDs medication and control | Government initiative Incentive to corporations Regulatory regime | Bennett et al., 2007 |
| China | Environmental pollution; Mostly philanthropic engagement, such as community involvement, children welfare, education support and disaster management; also has environmental protection program | Government-business relationship Lack of government supervision Market orientation | Ngai, 2005; Luo, 2006; Qu, 2007; Darabaris, 2008; Wal-Mart, 2009 |
| Ghana | No regular CSR disclosure | Macro-economic planning Management initiatives | Tsamenyi et al., 2007 |
| India | Philanthropic engagement | NGOs Lack of integration of CSR in core business strategy | Trotter et al., 1989; Arora & Puranik, 2004; Hopkins ,2007; Benigni et al. 2007; Rampal & Bawa, 2008; Dow, 2009 |
| Lebanon | Philanthropic engagement | Institutions, such as government Country-specific CSR policy | Jamali, 2007 |
| Malaysia | Environmental and philanthropic engagement, such as wildlife conservation and awareness programs | Determining factors affecting standard application | Zulkifli & Amran, 2006; Frynas, 2006; BP, 2009 |
| Nicaragua | Work place discrimination Equal opportunity | Religion Lack of awareness | Prieto-Carro'n et al., 2006 |
| Nigeria | No mentionable CSR issues | Country specific CSR issues | ITE, 2004 |

| | | | |
|--------------|---|---|--|
| Peru | Environment | Macro-economic planning Management initiatives | Gibbons et al., 2007 |
| Singapore | Philanthropic engagement | NGOs | Purushothaman et al., 2000; Ramasamy & Ting, 2004; Unilever, 2009 |
| South Africa | Adult education | Employee education Lack of awareness Corporation's size | Arumugam et al., 2007 |
| Sri Lanka | Philanthropic engagement | Government-business relationship | Kumar et al., 2004 |
| Thailand | Labour standards | Country specific CSR policy | Boris et al., 2007 |
| Vietnam | Labour standards Discrimination Philanthropic engagement, such as scholarship, traffic safety and education | Government policy Government dependency on corporations' practices | Farrel et al., 2007; Russo, 2008; Tencati et al., 2008; Toyota Vietnam, 2009 |

Source: Majumdar, A. N. (2016)

If we look at the contents of table 3, we see that even developing countries are in different position of CSR practices in comparison with each other. Most of the research on developing countries are generalized and confined to national level only. Very few studies are available at the regional level like European Community. For example, Pedersen and Huniche (2006) explained the nature of CSR practices in developing economies in their book *Corporate Citizenship in Developing Countries*. Very few studies are available focusing on the CSR practices at sector –levels. Although we stated that CSR is a global phenomenon, very little empirical research is found on the nature and extent of CSR in developing countries. Despite these critiques, there is an increasing interest among the scholars, academics and researchers regarding the CSR practices in developing economics.

5. Research Gap

As discussed throughout the paper, the term ‘Corporate Social Responsibility’ is a multidimensional concept. There is no agreed-upon definition of CSR till now. Again the there is trend of moving from theoretical to empirical research at large scale. However, the findings of these studies are questionable because there is no uniform model of CSR. So, the first research gap that has to be filled up is the development of well-accepted definition of CSR. Having a good definition of

CSR, with a common terminology, is critical in modeling research framework (McWilliams, 2006).

Kalyar et al. (2013) stated that the interested researchers should examine the extent to which corporate governance structures influences top level executives in determining and developing strategies related to CSR. Another important topic may be examining the relationship between leadership style and CSR activity. Researchers in CSR may examine the ‘social’ side of the equation. We see a vast amount research conducted from the corporations perspectives. Another interesting area of research may be ‘how do CSR activities affect the strategic decisions?’ For example, McWilliams and Siegel (2001) stated that CSR activities should be included in strategy formulation. One should justify this statement. The interested researchers and academics should go for a thorough review of the CSR literature first. Then they will be able to identify the appropriate areas of their research depending on the circumstances.

6. Conclusion

The growing interest among the academics and the increasing pressure from social groups have made the term ‘corporate social responsibility’ unique and popular. The ever-changing nature of this term has made the researchers confused. Still there is no agreed-upon definition of CSR.

This creates problems for the researchers in defining the research objectives and comparing the quality of research works. Scholars and academics explored the CSR concepts and theories derived from various perspectives such as social obligation, marketing, stakeholder-relation, integrated strategy, and leadership themes. However, decades of debate and discussion on corporate social responsibility (CSR) have resulted in a substantial body of literature. Thus, the existing literature of CSR offers a number of philosophies having a consensus about the fundamental idea that business corporations have an obligation to work for social betterment. There are real and relevant differences among their theoretical assumptions. There is a notable trend of research in CSR research. Researchers and academics are now giving more concentration on the examination of effects of CSR and its related dimensions on the firm’s level performance. Nonetheless, an increasing numbers of researchers are still working on the theoretical frameworks of CSR. There is a scope for more theoretical as well as empirical research on CSR. In fact, CSR is at the infant stage of research and a fertile ground for theory development.

References

- Ackerman, R. W., 1973 How Companies Respond to Social Demand's. *Harvard Business Review*, 51(4), 88–98.
- Adams, C., 2002 Internal Organizational Factors Influencing Corporate Social and Ethical Reporting: Beyond Current Theorizing. *Accounting, Auditing and Accountability*, Vol-15, PP 223–50.
- Archel, Husillos and Spence, 2011 The Institutionalization of Unaccountability: Loading the Dice of Corporate Social Responsibility Discourse. *Accounting, Organizations and Society*, Vol-36, PP 327–43
- Bartlett and Devin , 2011 Management, Communication and Corporate Social Responsibility. In Ø. Ihlen, J.L. Bartlett and S. May (eds) *The Handbook of Communication and Corporate Social Responsibility*, Chichester: Wiley Blackwel
- Basu, and Palazzo, 2008 Corporate Social Responsibility: A Process Model of Sense Making. *Academy of Management Review*, Vol-33, PP 122–36
- Bebbington, Larrinaga and Moneva, 2008 Corporate Social Reporting and Reputation Risk Management. *Accounting, Auditing and Accountability*, Vol-21, PP 337–61
- Bhattacharya, Sen and Korschun, 2008 Using Corporate Social Responsibility to Win the War for Talent. *MIT Sloan Management Review*, Vol-49, PP 37–44
- Bowen, H., 1953 *Social Responsibilities of the Businessman*, New York: Harper
- Brønn, P. S., 2011 Marketing and Corporate Social Responsibility. In *The Handbook of Communication and Corporate Social Responsibility*, Oxford: Wiley-Blackwell
- Campbell, J. L., 2007 Why Would Corporations Behave in Socially Responsible Ways? An Institutional Theory of Corporate Social Responsibility. *Academy of Management Review*, Vol-32, PP 946–67
- Carroll, A. B., 2006 Corporate Social Responsibility: A Historical Perspective, In Epstein, M. J. and Hanson, K.O. (eds.) *The Accountable Corporation: Corporate Social Responsibility*, Westport Connecticut: Praeger
- Carroll, A. B., 2008 A History of Corporate Social Responsibility: Concepts and Practices in in A. Crane et al. (eds.), *The Oxford Handbook of Corporate Social Responsibility*, New York : Oxford University Press
- Carroll, B. A., 1979 A Three-Dimensional Conceptual Model of Corporate Social Performance. *Academy of Management Review*, Voll-4, PP 497–505

Corporate Social Responsibility: History, Research Trends and Practices

- Chatterjee and Mitra, 2017 CSR Should Contribute to the National Agenda in Emerging Economies – The ‘Chatterjee Model’. *International Journal of Corporate Social Responsibility*, Vol-2, No.1, PP 1-11
- Christensen, Morsing and Thyssen, 2013 CSR as Aspirational Talk. *Organization*, Vol-20, PP 372–93
- Claydon, J., 2011 A New Direction for CSR: The Shortcomings of Previous CSR Models and The Rationale for a New Model. *Social Responsibility Journal*, Vol-7, No.3, PP 405–420
- Cooper and Owen, 2007 Corporate Social Reporting and Stakeholder Accountability: The Missing Link. *Accounting, Organizations and Society*, Vol-32, PP 649–67
- Coupland, C., 2006 Corporate Social and Environmental Responsibility in Web-Based Reports: Currency in the Banking Sector? *Critical Perspectives on Accounting*, Vol-17, PP 865–81
- Crane and Glozer, 2016 Researching Corporate Social Responsibility Communication: Themes, Opportunities and Challenges. *Journal of Management Studies*, Vol-53, PP 1223–1252
- Deegan and Gordon, 1996 A Study of the Environmental Disclosure Practices of Australian Corporations. *Accounting and Business Research*, Vol-26, No.3, PP 187-199
- Del Baldo and Baldarelli, 2017 Renewing and Improving the Business Model toward Sustainability in Theory and Practice. *International Journal of Corporate Social Responsibility*, Vol-2, No.3, PP 1-13
- Donaldson and Davis, 1991 Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns. *Australian Journal of Management*, Vol-16, PP 49–64
- Eberstadt, N. N., 1973 What History tells us about Corporate Responsibilities? Evidence from Listed private companies in China. *International Journal of Corporate Social Responsibility*, Vol-1, No. 9, PP 1-19
- Fieseler, Fleck and Meckel, 2010 Corporate Social Responsibility in the Blogosphere. *Journal of Business Ethics*, Vol-91, PP 599–614
- Freeman, R. E., 1984 *Strategic Management: A Stakeholder Approach*, Boston: Pitman
- Friedman, M., 1970 The Social Responsibility of Business is to Increase Its Profits. *New York Times Magazine*, September 13, PP 33

- Gallardo-Vázquez and Sánchez-Hernández, 2014 Measuring Corporate Social Responsibility for Competitive Success at a Regional Level. *Journal of Cleaner Production*, Vol-72, No.1, PP 14–22
- Garriga and Melé, 2004 Corporate Social Responsibility Theories: Mapping the Territory. *Journal of Business Ethics*, Vol-53, PP 51–71
- Gray, Kouhy and Lavers, 1995 Corporate Social And Environmental Reporting: A Review of the Literature and a Longitudinal Study of UK Disclosure. *Accounting, Auditing & Accountability Journal*, Vol-8, No.2, 47-77
- Haack, Schoeneborn and Wickert, 2012 Talking The Talk, Moral Entrapment, Creeping Commitment? Exploring Narrative Dynamics in Corporate Responsibility Standardization. *Organization Studies*, Vol.33, PP 815–45
- Hamidu, Haron and Amran, 2015 Corporate Social Responsibility: A Review on Definitions, Core Characteristics and Theoretical Perspectives. *Mediterranean Journal of Social Sciences*, Vol-4, No. 6, PP 83-95
- Hay and Gray, 1974 Social Responsibilities of Business Managers. *Academy of Management Journal*, Vol-17, No.1
- Hess, D. (2008). The Three Pillars of Corporate Social Reporting as New Governance Regulation: Disclosure, Dialogue, and Development. *Business Ethics Quarterly*, Vol.18, PP 447–82
- Hillman and Keim, 2001 Shareholder Value, Stakeholder Management, and And Social Issues: What’s The Bottom Line? *Strategic Management Journal*, Vol-22, PP 125–39
- Huang and Zhao, 2016 The influence of political connection on corporate social responsibility. *International Journal of Corporate Social Responsibility*, Vol-(2016), PP 1-9
- Jones, T. M.,1980 Corporate Social Responsibility Revisited, Redefined. *California Management Review*, Spring, PP 59–67
- Kalyar, Rafi and Kalyar, 2013 Factors Affecting Corporate Social Responsibility: An Empirical Study. *Systems Research and Behavioral Science*, Vol-30, No.4, PP 495–505
- Lanis and Richardson, 2012 Corporate social responsibility and tax aggressiveness: A test of legitimacy theory?. *Accounting, Auditing & Accountability Journal*, Vol. 26, PP 75–100
- Lee, M.-D. P.,2008 A review of the theories of corporate social responsibility: Its evolutionary path and the road ahead. *International Journal of Management Reviews*, Vol-10, PP 53–73

Corporate Social Responsibility: History, Research Trends and Practices

- Levitt, T.,1958 *The Dangers of Social Responsibility. Harvard Business Review, Vol-36, No.5, PP 41-50*
- Majumdar, A. N., 2016 *Corporate Social Responsibility Practices in Emerging Economies: The Case of Bangladesh, Dhaka: The University Press Limited*
- Matten and Moon, 2008 *Implicit and Explicit CSR: A Conceptual Framework for A Comparative Understanding of Corporate Social Responsibility. Academy of Management Review, Vol-33, PP 404–24*
- McGuire, Sundgren and Schneeweis, 1988 *Corporate Social Responsibility and Firm Financial Performance. Academy of Management Journal, Vol-31, No. 4, pp 854-872*
- McGuire, J. W., 1963 *Business & Society, NewYork: McGraw-Hill*
- McWilliams and Siegel, 2001 *Corporate Social Responsibility: A Theory of the Firm Perspective. Academy of Management Review, Vol-26, PP 117–27*
- McWilliams and Siegel, 1997 *Event Studies in Management Research: Theoretical And Empirical Issues. Academy of Management Journal, Vol-40, PP 626–657*
- McWilliams, Siegel and Wright, 2006 *Corporate Social Responsibility: Strategic Implications. Journal of Management Studies, Vol-43, No-1, PP 1–18*
- Friedman, M., 1970 *Ethical Theory and Business, New Jersey: Prentice Hall*
- Moon, J., 2002 *Corporate Social Responsibility: An Overview. In C. Hartley, The International Directory of Corporate Philanthropy, London and New York: Europa Publications*
- Muirhead, S. A., 1999 *Corporate Contributions: The View from 50 Years, New York: The Conference Board*
- O'Riordon, and Fairbrass, 2008 *Corporate Social Responsibility (CSR): Models and theories in stakeholder dialogue. Journal of Business Ethics, Vol-83, PP 745–58*
- Pedersen and Huniche, 2006 *Corporate Citizenship in Developing Countries, Copenhagen: Copenhagen Business School Press*
- Porter and Kramer, 2006 *Strategy and Society: The Link Between Competitive Advantage And Corporate Social Responsibility. Harvard Business Review, Vol-84, No-12, PP 78–92*

- Reynolds and Yuthas, 2008 Moral Discourse and Corporate Social Responsibility Reporting. *Journal of Business Ethics*, Vol-78, PP 47–64
- Russo and Fouts, 1997 A Resource-Based Perspective on Corporate Environmental Performance And Profitability. *Academy of Management Journal*, Vol-40, PP 534–559
- Scherer and Palazzo, 2007 Toward a Political Conception of Corporate Responsibility: Business And Society Seen from a Habermasian Perspective. *Academy of Management Review*, Vol-32, PP 1096–120
- Schwartz and Carroll., 2003 Corporate Social Responsibility: A Three-Domain Approach. *Business Ethics Quarterly*, Vol-October, PP 503–530
- Selekman, B.,1959 *A Moral Philosophy for Business*, NewYork: McGraw-Hill
- Sethi, S. P., 1975 Dimensions of Corporate Social Performance: An Analytic Framework. *California Management Review*, Vol-17, PP 58–64
- Slavin, R. E.,1986 *Using Student Team Learning*, Baltimore: John Hopkins University
- Spector, B., 2008 Business Responsibilities in a Divided World: The Cold War Roots of the Corporate Social Responsibility Movement. *Enterprise & Society*, Vol-9, PP 314–336
- Steiner, G. A., 1971 *Business and Society*, New York: Random House
- Tranfield, Denyer and Smart, 2003 Towards a Methodology for Developing Evidence Informed Management Knowledge. *British Journal of Management*, Vol-14, No-3, PP 207-222
- Vallentin and Murillo, 2012 Governmentality and the Politics of CSR. *Organization*, Vol-23, PP 1–19
- Waldman, Siegel and Javidan, 2006 Components of CEO Transformational Leadership and Corporate Social Responsibility. *Journal of Management Studies*, Vol-43, No-8, PP 1703-1725
- Will and Hielscher, 2014 How do Companies Invest in Corporate Social Responsibility? An Ordonomic Contribution for Empirical CSR Research. *Administrative Sciences*, Vol-4, PP 219-241
- Frederick, W. C., 2006 Corporation, Be Good! The Story Of Corporate Social Responsibility, Indianapolis: Dog Ear Publishing
- Williamson, Lynch-Wood and Ramsay, 2006 Drivers of Environmental Behaviour In Manufacturing. SMEs and The Implications for CSR. *Journal of Business Ethics*, Vol-67, PP 317–330

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| | |
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Contact for Further Details

Admission Coordinator, Department of Economics, Stamford University Bangladesh,
Mobile: **01780264431**. Email: farjadu2015@gmail.com

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