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Contents

CSR Practices in Private Sector Banking in Bangladesh: A Case Study on National Bank Limited

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ABSTRACT

CSR or Corporate Social Responsibility is a process to embrace responsibility for the company's actions and encourage a positive impact through its activities on the society. Because of global competitiveness and demand, the CSR practices are being implemented in Bangladesh. Banking sectors are holding the foremost position in this connection. The CSR expenditure of all banks in Bangladesh has been increased 7.5 times in last five years. The common CSR activities performed by National Bank Limited mainly include disaster relief distribution, financing in educational sector, financing in public health sectors, sponsoring in sports and arts & cultural activities etc. Comparing to various sectors it is found that NBL has major contribution in Public health sector which almost covers 33% of its total contribution. After that it contributed significantly in the area of Natural disaster (22%) and Education (12%). While in case Sports (5%) and Arts & Culture (1%), the NBL contributed a very less amount comparing to all other sectors. The analysis clarified that the participation in different areas of CSR activities of National Bank Ltd. is limited but praiseworthy.

Keyword: Corporate Social Responsibility, Social Performance, Sustainable Responsible Business.

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INTRODUCTION

"Everybody talks about society, but nobody does anything about it". This very proverb has lost its cogency today. Organizations' CSR approach has eradicated this making them social responsible one evolving from profit maximizing characteristics. To address the social problems or the problems of the stakeholders, the business community evolved a new approach in their business strategies named "Corporate Social Responsibilities (CSR)". By definition, *CSR is a process with the aim to embrace responsibility for the company's actions and encourage a positive impact through its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere who may also be considered as stakeholders*.[1] CSR is also called Corporate Conscience, Corporate Citizenship, Social Performance, or Sustainable Responsible Business/Responsible Business.[2] Among all the sectors banking sector is holding the leading position in discharging Corporate Social

Responsibilities (CSR) in the country and the CSR practices by banks have become an integral part of their business in recent years. Bangladesh is a developing country. Because of global competitiveness and demand, the CSR practices and standards are being implemented in Bangladesh.[3] The CSR expenditure of all banks in Bangladesh has been increased 7.5 times in last five years. All the banks have spent Tk 410 million under CSR activities in 2008 while the amount surged to Tk 3.05 billion in 2012.[4] The highest expenditure in this connection is in the healthcare sector, followed by disaster, relief and education. Health sector expenditure comprised financial contributions to hospitals, clinics and other facilities, run by external organizations. But comparing internationally Bangladesh is still lagging behind in term of this practice. There are challenges to implement CSR properly in Bangladesh. Currently in this country, this is a matter of self interest for the corporate sector. A study of CSR in commercial Banks of Bangladesh provides a bird's eye view of how CSR engagements are being structured and whether CSR initiatives are home grown within organizations or being partnered with other specialized entities.

Objectives of the Study

The study is aimed to fulfill the following specific objectives-

- To get an overview of CSR (Corporate Social Responsibility).
- To key out the CSR activities performed by National Bank Limited (NBL).
- To critically synchronize the result of the performance after practicing CSR by NBL.
- To become familiar with bank's CSR activities.

Methodology of the Study

To make the study more meaningful and presentable, two sources (*viz.* primary and secondary sources) of data were used widely. To collect primary data face to face communication with responsible officials of the bank was done. For secondary data collection, Bank's annual reports, exiting files and documents, statements, brochures, manuals and publications of the Bank were collected and analyzed. An intensive study on the relevant field was conducted through browsing internet and searching in library.

Justification of the Study

There are lot of reason and rationale behind the study. Now-days the business world is greatly influenced by their Corporate Social Responsibilities (CSR). Corporate Social Responsibility stands for business contribution to sustainable development and covers companies' active participation in different fields like- human rights, human resources, relations with clients, suppliers, and other stakeholders, corporate governance, environment and contribution to community and society. It ensures trade-off between economic and social goals of the efficient utilization of scarce resources. It is also a modern marketing concept. Where the banking sector holds a leading position in discharging Corporate Social Responsibility (CSR) in the country and the CSR practices by banks have become an integral part of their business in recent years, it becomes very important to study about Corporate Social Responsibility (CSR) of different company, bank, and financial institution. In this regard as a renowned private bank of Bangladesh the study of Corporate Social Responsibility (CSR) of NBL is very important. The justification behind this study is to gain knowledge about Corporate Social Responsibilities of NBL.

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LIMITATIONS OF THE STUDY

- It was not possible to study all the relevant literatures.
- Limited time frame was the major constraint to carry out the research smoothly.
- Bank officials were not willing to provide their internal data.

REVIEW OF LITERATURE

Many researchers have worked on CSR practices in private sectors. Those literatures were reviewed before making this research. Some of the remarkable literatures are presented here-

Khan *et al.* (2009) worked to examine corporate social responsibility (CSR) reporting by banks in the developing economy of Bangladesh. They collected two types of data. First the annual reports of 20 selected banking companies, which are listed in Dhaka Stock Exchange (DSE). And a questionnaire was also used to investigate the level of users' understanding and their perception of CSR reporting. The principal findings they have reported are twofold: first, the study shows that the selected banking companies did some (albeit little) CSR reporting on a voluntary basis. Second, the user groups are in favor of CSR reporting, and would like to see more disclosure.[5]

Alam *et. al.* (2010) in a paper entitled "Corporate Social Responsibility of Multi National Corporations in Bangladesh: A Case study on Grameenphone" pointed out that CSR is still an evolving concept that enables corporate executives to create and apply self-determined policies to best meet the needs and demands of its stakeholders. The peculiar nature of CSR practices makes their cross-border management difficult. Achieving consistent CSR practices across global operations involves not only the transfer of the CSR practice, but also the transfer of its underlying value and meaning.[6]

Rahman *et al.* (2010) reported the findings of a qualitative study on perceptions of CSR by Islami Bank Bangladesh Limited in the healthcare sector of a heterogeneous group of stakeholders. Their findings reveal the perception of stakeholders towards the social contribution of Islami Bank Central Hospital (IBCH), an Institution for CSR in healthcare by IBBL. According to their report, the stakeholders believe that this hospital is significantly contributing to the society through its support in the healthcare sector. The hospital is proactive in providing healthcare support to the community through its highly standard human resources, world class medical equipment, outstanding management team and superb customer care support.[7]

Azim *et al.* (2011) in an article named "Corporate Social Disclosure in Bangladesh: A Study of the Financial Sector" stated that, Corporate social disclosure is essential to generate a favorable investment climate and to attract foreign investment, especially in developing countries. In their study, they conducted content analysis of corporate social reporting by listed finance companies in Bangladesh. After analysis they reported that- "Analysis of annual reports published in 2007-2008 revealed that 41% of listed finance sector companies made some kind of CSR disclosure. However, three quarters of all disclosures are generalized qualitative statements without any attempt at quantification. More than half the disclosures are located in the director's report, and the average length of disclosures amounted to less than half a page." They also noted that- "A well-functioning finance sector in any country can contribute directly to a healthy economy. This sector plays an important role in a country's economic development."[8]

Islam (2012) reported through his paper an insight into the practice and experience of social commitment and empirically examines the impact of corporate social responsibility (CSR)

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on Corporate Financial performance (CFP) of the banking companies. He has carried out a detailed questionnaire survey to know the perceptions of CSR under the heading of ten perceptions. His study revealed that most of the companies strongly support in favor of "Ethical Conduct in Business". Beside this, majority of the social and professional groups strongly support in favor of "Prevention from environmental pollution". It considers key issues of CSR strategy options, considerations and factors denoting the CSR strategy and success. Finally his study opines focusing on environmentally friendly business that issues to financial performance.[9]

The review of literature shows that very limited works on CSR have been carried out by some researchers, which does not represent the whole scenario of CSR in corporate world. In Bangladesh there are numerous famous corporate organizations on which it needs to carry separate researches in regarding CSR. This research deals with the CSR activities of National Bank Limited (NBL).

Results and Discussion

National Bank Limited (NBL) is the pioneer in the private sector banking of Bangladesh. Since inception, the bank is witting in complying with CSR. It has remained associated with the development of education and health care, and has sponsored sporting and cultural activities. During natural disasters like floods, cyclones, landslides, the bank always extends its hands to mitigate the sufferings of victims. Through establishing National Bank Foundation in 1989, it remains involved with social welfare activities. The foundation runs the NBL Public School & College at Moghbazar. Besides it is awarding scholarship to the meritorious children of the employees and extending financial supports for their education. This research pointed out the Bank's contribution in different fields of CSR which have shown an upward trend as the expenditure has been increasing consistently over the last five years.

Sector wise CSR Expenditure

Disaster Relief: National Bank Limited always stands besides the people affected by disaster like cyclone, flood, tornado, landslide, river erosion, devastating fire etc. It provides supports to the affected people for their rehabilitation. In 2007 the expenditure against this sector was 12.77 million which was increased upto 16.73 million in 2011 with a growth rate of 15.06% than the previous year (Table.1). Its supports include food, medicine, water purifying tablets, blankets etc.

Education: Education is the pre-requisite for the overall development of a country. National Bank Limited has always given priority to the educational sector. Table.1 represents the expenditure of the Bank against this sector from the year 2007 to 2011.

Health: Health is one of the prime parameters to achieve Millennium Development Goal (MDG) of the country. Due to rapid growth of population, needs in health sector are increasing day by day. National Bank Limited has identified health care as a priority sector and helps creating better health care facilities at a cheaper cost for deprived population. In this connection National Bank Limited has extended BDT 96.13 million in 5 years which is the highest expenditure (33%) among all sectors (Table.1, Fig.1).

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Table.1: Sector wise CSR expenditure of NBL from the year 2007-2011.

Sector	Years (BDT in million)					Total (million)
	2007	2008	2009	2010	2011	
Disaster Relief	12.77	7.17	12.92	14.54	16.73	64.13
Education	1.43	3.62	9.74	10.58	9.78	35.15
Heath	6.86	14.22	24.55	25.58	24.92	96.13
Sports	0.27	4.98	2.62	2.13	3.64	13.64
Arts & Culture	0.0	0.24	0.52	0.45	0.65	1.86
Others	1.31	16.79	17.69	18.32	22.38	76.49
Total (million)	**22.64**	**47.02**	**68.04**	**71.60**	**78.10**	**287.40**

Sports: The contribution in sports in the form of sponsorship was BDT 13.64 million in five years (Table.1, Fig.1). But the expenditure (3.64 million) in 2011 was 13 times more than the year 2007 (0.27 million). It had a growth rate in 2011 of 70.89% than the previous year.
Arts and Culture: This is the least contributed sector than all others (1%) and the total contribution in this sector in five years was BDT 1.86 million (Table.1, Fig.1). In 2011 the expenditure was BDT 0.65 million with a growth of 44% than the previous year.

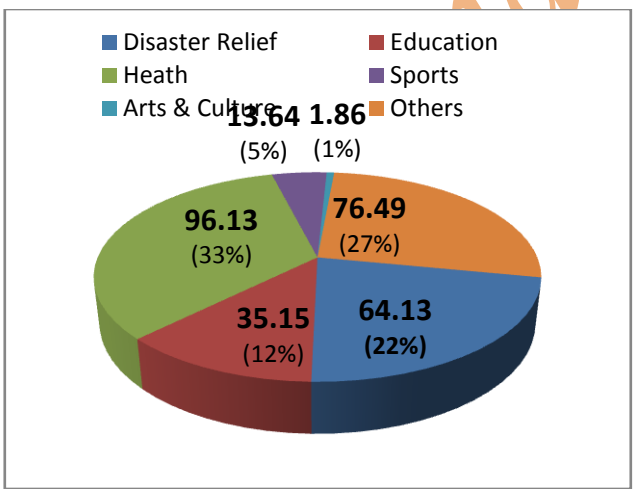

Fig.1. Sector wise total CSR expenditure (in million) from 2007 to 2011.

Other sectors: National Bank Limited spreads hands in many other sectors along with expending in Disaster relief, Education, Health, Sports, Arts & culture sectors. It contributes in fair, festivals and other gatherings organized by different private or public sectors. In this sector the total expenditure was BDT 76.49 million in 5 years (Table.1). Contribution in this sector had an upward trend. In 2011 the expenditure was BDT 22.38 million with a growth rate of 22.16% than the previous year.

OVERALL CSR EXPENDITURE

The total contribution of National Bank Limited in CSR activities from year 2007-2011 has been presented through Fig.2. In 2007, the NBL expend BDT 22.64 million in different areas

of CSR which has been reached upto BDT 78.10 million in 2011 with a growth rate of 9.07% than the previous year. The Fig. 2 represents an upward trend in expending against CSR.

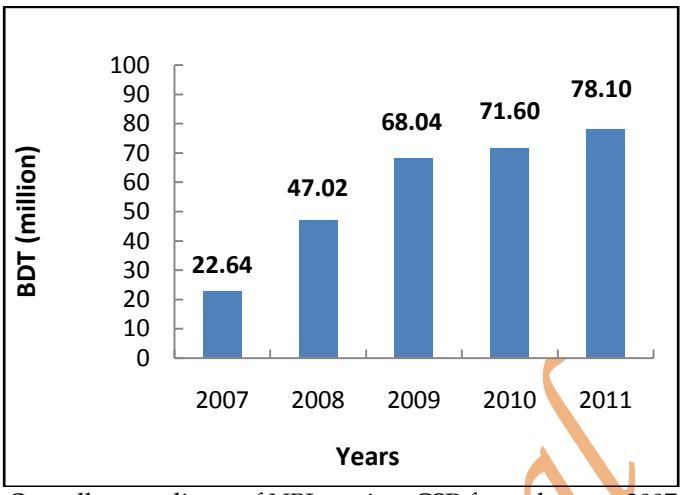

Fig.2. Overall expenditure of NBL against CSR from the year 2007-2011.

MAJOR FINDINGS

Banking sector being a vital sector of Bangladesh continues to contribute to a great extent in the economy of Bangladesh. This is true that banks are paying more to their CSR activities but not so much as their earnings increases. But recent trends of engagement in CSR practice indicate that banks are gradually organizing these involvements in more structured CSR initiative format. According to Alam *et al.* (2010), common CSR practices in Bangladesh by different organization are centered mainly on poverty alleviation, healthcare, education, charity activities, cultural enrichment, youth development, women empowerment, patronizing sports and music etc.[6] From the above data analysis, it is found that common CSR activities performed by National Bank Limited mainly include disaster relief distribution, financing in educational sector, financing in public health sectors, sponsoring in sports and arts & cultural activities etc. Comparing to various sectors we have found that NBL has major contribution in Public health sector which almost covers 33% of its total contribution. After that it also contributed significantly in the area of Natural disaster (22%) and Education (12%). While in case Sports (5%) and Arts & Culture (1%), the NBL contributed a very less amount comparing to all other sectors. The analysis clarified that the participation in different areas of CSR activities of National Bank Ltd. is limited but praiseworthy.

SUGGESTION

- As a corporate citizen the bank should accelerate its CSR fund for wellbeing of the society.
- The Bank can diversify its CSR activities in various fields.
- Being a responsible part of the society the Bank should spread out its CSR activities into sustainable development.

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CONCLUSION

The banking sector of Bangladesh has a long history in involving in benevolent activities like donations to different charitable organizations, to poor people and religious institutions, in city beautification and patronizing art and culture, etc. Recent trends indicate that banks are gradually organizing their involvements in more structured CSR. Most corporate organizations are now practicing CSR to enlarge their business or to promote organizational image and recognition. Awareness and sense of necessity for practicing CSR is becoming more and more pronounced as the country has to adapt itself to the process of globalization. But we are yet go a long way. To implement CSR properly in Bangladesh we have to face the challenge. We have to overcome the lack of Good Governance, absence of strong labor unions or consumer rights groups, and inability of the business community. All the financial institutions and banks have to come forward as NBL for ensuring good practice of CSR in our country.

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Working Capital Management and Its Impact on Profitability of Fuel & Power Industry in Bangladesh

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ABSTRACT

Working capital management plays a vital role in financial decision making process as it is a part of investment in assets and the liquidity position as well as the profitability of the corporation irrespective of its nature. The main objective of this research is studying the impact of working capital management on company profitability in the context of fuel and power industry in Bangladesh. For this purpose the researchers have tried to investigate the relationship among the components of working capital management and then analyzed the impact of these components on the profitability of a sample of eight fuel and power companies listed in the Dhaka Stock Exchange for a period of seven years ranging from 2005 to 2011. The data were analysed by using descriptive statistics followed by the Pearson's correlation analysis to see the association between Net Operating Profitability and all the components of Working Capital Management and the impact of working capital management on company performance of the firms is tested by panel data analysis. The result shows that Average Collection Period and Cash Conversion Cycle have a negative impact on the profitability of the firms. On the other hand, Inventory Turnover in Days and Average Payment Periods have a positive impact on profitability. Moreover, current asset to total asset ratio and firm size have a significant effect on the firm's profitability. The study also concludes that the fuel and power companies in Bangladesh are following conservative working capital management policy and the firms are needed to concentrate and improve their collection and payment policy. Furthermore, efficient management and financing of working capital can increase the operating profitability of the fuel and power companies in Bangladesh.

Keywords: Working Capital Management, Cash Conversion Cycle, Net Operating Profit, Fuel and Power Industry, Fixed Effect Model.

1. INTRODUCTION

Working capital management is the management of the firm's short-term assets and liabilities, individually and aggregate. Of all the functional area of business financial decision making, the one that occupies the largest amount of the time and effort for practicing financial managers is the management of current assets and liabilities. Credit

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management, cash management, inventory management, and accounts payable management are all part of the management of working capital (**Scherr C. Fredrick, 1998).**
The maintenance of cash at a desirable level for the purpose of setting liabilities on maturity and using opportunities that are indicative of the flexibility of the economic entity, moreover the availability of material needed for production in order to enable the entity to provide the needs of its customers is indicative of the importance of working capital. Any decision made by the managers of the entity in this context can significantly affect return of the entity stock which shall transform company value and ultimately increase shareholders wealth (**Michalski, 2005).**
Working capital is the total of the amounts invested in current assets of the company. Net working capital results from the deduction of current liabilities from current assets; working capital management consists of determining the volume and composition of sources and uses of working capital is such a way that would increase the wealth of stockholders. Working capital management is the management of current assets and current such that would result in the most desirable level of working capital and maximize company profitability. Inadequate working capital leads the company to bankruptcy. On the other hand, too much working capital results in wasting cash and ultimately the decrease in profitability (**Chakraborty, 2008**).
Working capital management indicates how much a company shall continue its existence if operations are aborted. Moreover, it gives indications of the time period elapsed between the points of inventory purchase to the point of collection of sales amounts. Retention of inventories at a desirable level and setting credit policies by providers of materials and granting credit to customers significantly affects company profitability. Companies focusing on cash management, are larger but younger, and face less cash sales, seasonal activities and cash flow problems. Companies focusing more on inventory management are smaller and younger and have more outsourcing and longer production cycles. Companies focusing on credit management methods have less profitability and are interested in growth; moreover they benefit from less credit purchase and cash sales. Suggestion for growth, companies should use credit policies for customers and invest more in inventories (**Lazaridis and Tryfonodis, 2006).**
The management of working capital has traditionally been neglected in academic programs and in academic research. For the purpose to check the practical application of the theory, an attempt to study the working capital practice in Bangladesh has been made. Therefore the current study focused on evaluating the impact of working capital management and the performance, in terms of profitability, of fuel and power industry in Bangladesh, based on the firms listed on Dhaka Stock Exchange (DSE) and to identify important variables that are influencing working capital management efficiency. This study may enlighten the different ways and techniques of working capital management to develop the sound financial base of the company.
The next section presents the literature review. Methodology, data and variable issues are discussed in section three whereas section four presents the empirical results. Section five concludes the finding of the study.

2. Literature Review

Most of the empirical studies support the traditional belief about working capital and profitability that reducing working capital investment would positively affect the profitability of firm (aggressive policy) by reducing proportion of current assets in total

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assets. **Deloof** (2003) analyzed a sample of Belgian firms, and **Wang** (2002) analyzed a sample of Japanese and Taiwanese firms, emphasized that the way the working capital is managed has a significant impact on the profitability of firms and increase in profitability by reducing number of day's accounts receivable and reducing inventories. A shorter cash conversion cycle and net trade cycle is related to better performance of firms. Furthermore, efficient working capital management is very important to create value for the shareholders.

Shin Soenen (1998) analyzed a sample of US firms also reported similar findings but have used Net Trading Cycle (NTC) as comprehensive measure of working capital management and found significant negative relationship between NTC and profitability. **Jose**, etal. (1996) performed an industry wise analysis and measured the ongoing liquidity by cash conversion cycle. Controlling industry and size differences they have concluded that more aggressive liquidity management is associated with higher profitability for several industries. However, divergent to traditional belief, more investment in working capital (conservative policy) might also increase profitability.

In another study, Czyzewski and **Hicks** (1992) concluded that firms with the highest return on assets hold higher cash balances but they did not consider liquidity management beyond static cash and assets ratio.

Afza and Nazir (2008) studied the factors determining the working capital requirements for a large sample of 204 firms in sixteen manufacturing sub sectors during 1998-2006. Another study by **Afza** and **Nazir** (2007) investigate the relationship between aggressive and conservative working capital policies for a large sample of 205 firms in 17 sectors listed on Karachi Stock Exchange during 1998-2005. They found a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies. **Raheman** and **Nasr** (2007) studied the relationship between working capital management and corporate profitability for 94 firms listed on Karachi Stock Exchange using static measure of liquidity and ongoing operating measure of working International Research Journal of Finance and Economics – issue 47 (2010) 154 capital management during 1999-2004. The findings of study suggested that there exist a negative relation between working capital management measures and profitability. **Shah** and **Sana** (2006) used a very small sample of 7 oil and gas sector firms to investigate this relationship for period 2001-2005. The result suggested that managers can generate positive return for the shareholders by effectively managing working capital.

Lazardidis and **Tryfinidis** (2006) have investigated the relationship between profitability and working capital management in the Stock Exchange Market of Athens throughout 2001-2004. Results indicate that a significant relationship exists between gross operational profit and the cash transactions cycle. Moreover manager can generate a good profit for the company using the right management techniques for the cash transformation cycle and its components.

Summers and **Wilson** (2000) report that in the UK corporate sector more that 80% of daily business transactions are on credit terms. **Cote** and **Latham** (1999) argued the management of receivables, inventory and accounts payable have tremendous impact on cash flows, which in turn affect the profitability of firms.

Lack of empirical evidence on the working capital management and its impact on the firm performance in case of fuel and power sector of Bangladesh is main motivating force to study the subject in more detail. Existing literature with reference to Bangladesh on the comparison of different working capital measures on sectoral basis lacks the empirical evidence and regression analysis is undertaken for a relatively small sample with reference

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to other manufacturing firms in Bangladesh. Therefore, the present study is an attempt to fill thesis gap and estimate the relationship between working capital management and firm performance for a good sample of eight fuel and power firms out of fourteen, listed on Dhaka Stock Exchange for a period of seven years.

3. METHODOLOGY

For conducting the study on working capital management and its impact on profitability of fuel & power industry in Bangladesh, the population included all the fuel and power companies operating in Bangladesh. At present there are fifteen fuel and power companies listed in DSE and among them eight companies (Linde BD Ltd.; Bangladesh Welding Electrodes Ltd.; Summit Power Ltd.; DESCO Ltd.' Power Grid Ltd.; Jamuna Oil Company Ltd.; Meghna Petroleum Ltd.; Titas Gas Distribution Ltd.) have been selected for the purpose of the study and rest of the seven companies (Padma Oil Company Ltd.; Eastern Lubricant Ltd.; Khulna Power Company Ltd.; Barakatullah Electro Dynamics Ltd.; MJL Bangladesh Ltd.; GBB Power Ltd., and Summit Purbanchol Power Company Ltd.) were excluded due to lack of complete information for analysis.

The study is based on secondary data and the data were collected from the published annual reports of the mentioned firms, various documents, articles, case studies, books, internet etc. The data for the year 2005-2011 has been taken into consideration and the selections of firms and the periods have been determined on the basis of two crucial components- enlistment year in DSE on or before 2005 and the availability of the required data of the firms.

The data were analysed by using descriptive statistics followed by the Perason's correlation analysis to see the association between Net Operating Profitability and all the components of working capital management. The impact of working capital management on company performance of fuel and power industry is tested by panel data analysis. A classical test for the panel data is one of the random effect models versus fixed effect model. In a random effect model it is assumed that there is a single common intercept and it varies from firm to firm in a random manner. In fixed effect model, it assumes firm specific intercept and capture effects of those variables which are specific to each firm and constant over time. Regression coefficients were estimated by both fixed and random effects to determine which of these two models is appropriate. Using Hausman test, the decision has been taken to use fixed effect model.

Model Specification: Researchers develop an empirical framework, first used by Deloof (2003) and subsequently work of Padachi (2006). The regression equation used in the research is –

$$NOP_{it} = ß_0 + ß_1 (WCM_{it}) + ß_2 (GWCTR_{it}) + ß_3 (CATAR_{it}) + ß_4 (CLTAR_{it}) + ß_5 (FDR_{it}) + ß_6 (LOS_{it}) + ß_7 (SG_{it}) + ß_8 (CR_{it}) + \eta_i + \lambda_t + \varepsilon_{it}$$

Where, NOP is Net Operating Profit is used as a measure of firm's performance. WCM is working capital management, the key variable used as a vector of average collection period (ACP), inventory turnover in days (ITID), average payment period (APP) and cash conversion cycle (CCC) of the firm. It is expected that WCM has the negative relationship with the corporate profitability. If we reduce number of days in receivables (ACP), inventory turnover in days (ITID) and cash conversion cycle (CCC) it will enhance the corporate profitability. Furthermore, average payment period is directly associated with

profitability. Among other variables GWCTR is the gross working capital turnover ratio which is expected to have positive relationship with profitability, CATAR is the current assets to total assets ratio and CLTAR is the current liabilities to total assets ratio are used analyze the liquidity and financing policy of working capital management. Financial debt ratio (FDR) representing the leverage position of the firm is expected to have negative relationship and natural logarithm of sales (LOS) representing size of the firm has the positive relationship with corporate profitability. SG is sales growth which represents the investment growth opportunities and CR is current ratio measures the liquidity of firm. η_t measures the specific characteristics of each firm called unobservable heterogeneity, whereas λ_t is a parameter for time dummy variables which is equal for all firms in each year but changes over time and ε is the error term.

Definition of Variables

A variety of variables related to working capital management that might potentially be associated or 'responsible' for the profitability of manufacturing firms can be found in the literature. In this study, the choice of explanatory variables is based on alternative theories related to working capital management and profitability and additional variables that were studied in reported empirical work. The variables used in this study are based on the line as applied in previous researches regarding the relationship between working capital management and profitability.

Net Operating Profitability (NOP) which us a measure of profitability of the firm is used as dependent variable. It is defined as operating income plus depreciation and amortization and divided by total assets. Number of days account receivable (ACP) has been as proxy for the collection policy is an independent variable. It is calculated as (accounts receivable x 365)/sales. Number of days inventories (ITID) has been used as proxy for the inventory policy is an independent variable. It is calculated as (inventories x 365)/ cost of goods sold. Number of days accounts payable (APP) has been used as proxy for the payment policy is an independent variable. It is calculated as (accounts payable x 365)/cost of goods sold. The cash conversion cycle (CCC) has been used as a comprehensive measure of working capital management is another independent variable. It is calculated as (number of days accounts receivables + number of days inventory – number of days accounts payable). Current Ratio (CR) which is a traditional measure of liquidity is calculated by dividing current assets by current liabilities. Various studies have utilized the control variables along with the main variables of working capital in order to have an opposite analysis of working capital management on the firm's profitability (**Deloof, 2003; Lazaridis and Tryfonidis, 2006**). The logarithm of sales used to measure size of firms is a control variable. In addition, financial debt ratio (FDR) used as proxy for leverage, calculated by dividing total financial debt by total assets.

All the above variables have relationships that ultimately affect working capital management. It is expected that there is a negative relationship between net operation profitability on the one hand and the measures of working capital management (number of days' accounts receivable, inventories and account payable and cash conversion cycle) on the other hand. This is consistent with the view that the time lag between expenditure for the purchases of raw materials and the collection of sales of finished goods can be too long, and that decreasing this time lag increases profitability.

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Table 1: List of Variables, Abbreviation and Measurement

Variable	Abbreviation	Measurement
Net Operating Profitability	NOP	Earning Before Interest and Tax/Total Assets
Average Collection Period	ACP	Accounts Receivables/Net sales*365
Average Payment Period	APP	Accounts Payable/Purchases*365
Inventory Turnover in Days	ITID	Inventory/Cost of Goods Sold*365
Cash Conversion Cycle	CCC	ACP+ITID-APP
Current Ratio	CR	Current Assets/Current Liabilities
Current Assets to Total Assets Ratio	CATAR	Current Assets/Total Assets
Current Liabilities to Total Assets Ratio	CLTAR	Current Liabilities/ Total Assets
Gross Working Capita Turnover Ratio	GWCTR	Net Sales/Current Assets
Financial Debt Ratio	FDR	Total Financial Debt/Total Assets
Size of Firm using Log of sales	LOS	Natural Logarithm of Sales
Sales Growth	SG	(Current year N. sales-Last year N. sales)/ Last year N. sales

4. Findings

The results of different measures of working capital management and its impact on corporate profitability including average collection period, inventory turnover in days, average payment period, cash conversion cycle, current ratio, current assets to total assets, current liabilities to total assets, financial debt to total assets, sales growth and other explanatory variables for manufacturing sector are presented in the following section. First, the descriptive analysis is presented followed by the Perason's correlation analysis to see the association between Net Operating Profitability and all independent variables. Panel data analysis with fixed effect model is also used in order to see the impact of working capital management on corporate overall performance of fuel and power industry of Bangladesh.

4.1 Descriptive Statistics

The mean, minimum and maximum values with standard deviation of different variables in the model during the period 2005 to 2011 are presented in the table 2. The selected sector has on an average 127 days of cash conversion cycle, inventory turns in 103 days, collection period of 90 days and payment period of 66 days with standard deviation of 151, 62 and 66 days respectively. On an average company holds more the 50% of total assets as current form and 36%of current liabilities against total assets. The sector's average sales growth is 20% with 22% of standard deviation. Assets finance with debt has small average of 22%. Net profit margin based of which performance is measured, has average growth rate of 11% with a standard deviation of 0.07.

Table 2: Descriptive Statistics of Variables of Fuel and Power Sector

Variables	Mean	Std. Deviation	Minimum	Maximum
ACP (in days)	90	62	9	258
APP (in days)	66	66	1	312
ITID (in days)	103	88	8	373
CCC (in days)	127	151	-142	542
CATAR (Ratio)	.51	.31	.10	.98
CLTAR (Ratio)	.36	.33	.03	.98
CR (Ratio)	2.3	1.60	.40	9.70
GWCTR (Ratio)	1.7	2.43	.05	14.48
FDR (Ratio)	.22	.25	.00	.74

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LOS (ln)	21.3	3.21	14.26	25.48
SG	.20	.22	-.34	.96
NOP	.11	.074	.02	.34

The sample companies are belongs to same sector- fuel and power and sharing has same characteristics, still has high standard deviation in almost all the variables.

4.2 Correlation Analysis

Correlation matrix of all variables included in the analysis is presented in table 3 which is calculated based on data of 56 observations. The table shows that Operating Profitability is negatively associated with measures of working capital management (Inventory Turnover in days, Average Collection Period, Average Payment Period, Cash Conversion Cycle, Current Asset to Total Asset Ratio, Current Liabilities to Total Asset Ratio, Gross Working capital Turnover Ratio, Financial Debt Ratio and Natural Logarithm of Sales) and NOP is positively associated with Current Ratio and sales growth. The correlation coefficients for ACP, CR, CLTAR, FDR and LOS are significant.

Table 3: Pearson Correlation Coefficient between variables of 8 firms (56 observations)

		NOP	ITID	ACP	APP	CCC	CR	CATAR	CLTAR	GWCTR	FDR	LOS	SG
NOP	Pearson Correlation Sig. (2-tailed)	1											
ITID	Pearson Correlation Sig. (2-tailed)	-.218 .106	1										
ACP	Pearson Correlation Sig. (2-tailed)	-.319 (*) .016	.439 (**) .001	1									
APP	Pearson Correlation Sig. (2-tailed)	-.008 .953	-.341 (*) .010	.253 .060	1								
CCC	Pearson Correlation Sig. (2-tailed)	-.257 .056	.915 (**) .000	.559 (**) .000	-.533 (**) .000	1							
CR	Pearson Correlation Sig. (2-tailed)	.277 (*) .039	.229 .089	-.171 .207	-.197 .145	.148 .277	1						
CATAR	Pearson Correlation Sig. (2-tailed)	-.153 .261	-.382 (**) .004	-.029 .835	.209 .121	-.329 (*) .013	-.221 .101	1					
CLTAR	Pearson Correlation Sig. (2-tailed)	-.276 (*) .040	-.437 (**) .001	.074 .586	.329 (*) .013	-.369 (**) .005	-.536 (**) .000	.851 (**) .000	1				
GWCTR	Pearson Correlation Sig. (2-tailed)	-.087 .525	-.429 (**) .001	-.444 (**) .001	-.084 .540	-.398 (**) .002	-.225 .096	.425 (**) .001	.459 (**) .000	1			
FDR	Pearson Correlation Sig. (2-tailed)	-.282 (*) .035	.398 (**) .002	.134 .325	.033 .807	.275 (*) .040	.136 .317	-.716 (**) .000	-.613 (**) .000	-.402 (**) .002	1		
LOS	Pearson Correlation Sig. (2-tailed)	-.428 (**) .001	-.403 (**) .002	.012 .931	.319 (*) .017	-.371 (**) .005	-.385 (**) .003	.246 .068	.414 (**) .002	.311 (*) .019	.026 .847	1	

SG	Pearson Correlation	.069	.097	.256	.071	.132	-.224	.041	.114	-.152	-.010	-.124	1
	Sig. (2-tailed)	.613	.475	.056	.605	.332	.098	.762	.403	.263	.941	.364	

* Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Data reflects high correlations between different measures of working capital management. The correlation between Cash Conversion Cycle (CCC) and ITID is (0.915), CCC and ACP is (0.559), CCC and APP is (-0.533), CLTAR and CR is (-0.536), CLTAR and CATAR is (0.851), FDR and CATAR is (-0.716), and (-0.613) between FDR and CLTAR. This has been taken into consideration in the regression analysis to avoid multi-colinearity problem.

4.3 Empirical Models

Impact of working capital management on corporate performance of the fuel and power industry in Bangladesh is estimated using panel data analysis and is exhibited in table 4.
In model 1 to 4, individual components of Cash Conversion Cycle (CCC), Average Collection Period (ACP), Inventory Turnover in days (ITID), and Average Payment Period (APP) are included with other variables. The other variables include Gross Working capital Turnover Ratio (GWCTR), Current Asset to Total Asset Ratio (CATAR), Current Liabilities to Total Asset Ratio (CLTAR), Financial Debt Ratio (FDR), Natural Logarithm of Sales (LOS), Sales Growth (SG) and Current Ratio (CR).

Table 4: Impact of Working Capital Management on Corporate Performance of Fuel and Power Industry (2005 – 2011)

Dependent Variable	**Net Operating Profitability**			
Regression Model	**Fixed Effect Model**			
Models	**1** **ACP**	**2** **ITID**	**3** **APP**	**4** **CCC**
Constant	-1.16834 (0.008)	-1.337089 (0.001)	-1.220794 (0.002)	-1.192134 (0.002)
SG	.0123852 (0.703)	.0070122 (0.805)	.0070777 (0.805)	.0156757 (0.581)
LOS	.0537444 (0.008)	.0617917 (0.001)	.0557446 (0.003)	.0550549 (0.003)
FDR	.0107127 (0.887)	.022513 (0.737)	.0042069 (0.951)	-.0115397 (0.866)
GWCTR	.0007106 (0.843)	.0009056 (0.792)	.0016096 (0.648)	.0010428 (0.760)
CLTAR	-.0110791 (0.845)	-.0090115 (0.870)	-.0051851 (0.926)	-.0078897 (0.885)
CATAR	.298548 (0.011)	.3153669 (0.006)	.298539 (0.009)	.3247473 (0.005)
CR	-.0052854 (0.309)	-.0062403 (0.221)	-.0060816 (0.236)	-.0073573 (0.156)
ACP	-.0000286 (0.842)	-	-	-
ITID	-	-.000138 (0.190)	-	-

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APP	-		.0001187 (0.265)	-
CCC	-		-	-.00025 (0.000)
R-Square	0.8652	0.8708	0.8692	0.8733
Adjusted R-Square	0.8147	0.8224	0.8202	0.8258
F statistics	14.55	12.78	14.30	10.56
Prob(F statistics)	0.0000	0.0000	0.0000	0.0000
Hausman Test	0.0000	0.0000	0.0000	0.0000

The *P-values* are shown in parentheses

In ACP model, Net Operating Profitability is regressed on the Average Collection Period as a measure of collection policy. The coefficient of Average Collection Period is negative but insignificant by using firm specific intercept in the fixed effect model. The coefficients of CATAR and LOS are highly significant while the coefficients of the other variables included in the model are highly insignificant.

From the ACP *model* it is exposed that, the current asset to total asset shows a significant positive relationship with the profitability which means the firms of the fuel and power industries in general following the conservative policy of working capital management. In the regression model the natural logarithm of sales is used for size as this log transformation reduces the hetroskedasticity influences outliers in the regression model. Size is positively related to profitability and is highly significant which implies that larger size seems to favour the generation of profitability therefore larger firms are more profitable.

Although the Gross Working Capital Turnover Ratio, Financial Debt Ratio, and Sales Growth show a positive impact on Net Operating Profitability but their impact is not significant. This implies that these variables of the working capital management have little effect on the net operating profitability of the fuel and power industry in Bangladesh. But positive sign does make economic sense because the net operating profit can be increased if the firms are able to increase the working capital turnover & increase the sales growth opportunities. On the other hand, current liabilities to total asset ratio is showing a negative impact on profitability but its impact is also insignificant. . This implies that the firms in the fuel and power sector in general follow the conservative policy of financing working capital. The current ratio which is a theoretical measure of liquidity has no significant impact on profitability in case of the fuel and power companies in Bangladesh.

In ITID model, the researchers have the same set of independent variables as in ACP model, except for the substitution of average collection period (ACP) with inventory turnover in days (ITID). ITID has negative impact on net operating profitability. This implies that profitability can be improved by reducing inventory turnover in days or keeping inventory for lesser time can improve profitability of the firm. Although most of the studies found a significant negative impact of inventory turnover in days on the profitability of the firms but the impact is not significant in the fuel and power companies of Bangladesh.

In the APP model, inventory turnover in days (ITID) is replaced with average payment period (APP). The coefficient of average payment period is positive which implies that lengthening the payment period increase profitability. This result is not significant but positive sign does make economic sense because longer a firm take time to make payments to credit suppliers, the higher level of working capital it reserves and use to improve profitability.

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In the CCC model, Cash Conversion Cycle is included with other variables. This model provides strong evidence of negative relationship between cash conversion cycle and corporate profitability where the coefficient is negative and highly significant. It is consistent with the view that decreasing the cash conversion cycle will generate more profits for the company. It also implies that firms can create value for their shareholders by keeping the cash conversion cycle to minimum.

The results of all regression models suggest that managers can increase the net operating profitability by increasing the gross working capital turnover ratio, current asset to total asset ratio, sales growth, average payment period, and size of the firm. On the other hand, it decreases with the increase in inventory turnover in days, cash conversion cycle, current liabilities to total asset, and average collection period. The adjusted R-Square is about 82% in all five fixed effect model and F-statistics is significant.

The researchers have also estimated these models using ordinary least square method (OLS). The results of these models using OLS can be seen in Appendix-1. The major difference between using fixed effect model and ordinary least square method is for the Average Collection Period, Average Payment Period, and Inventory Turnover in Days. The coefficient of ACP which was negative & significant in OLS at 0.001 levels loses its significance in case of fixed effect model. This implies that, while using fixed effect model, the firms are not efficient in their collection policy. The coefficient of Inventory Turnover in Days also loses its significance in FEM which implies that fuel and power companies of Bangladesh are not efficient in inventory turnover. The firms can improve profitability by reducing the inventory turnover in days. The result of the Average Payment Period which was significant in OLS at 0.004 level also loses its significance in FEM. This might be possible because there are number of firms and differences in the firms might cause this change in significance of the variables.

5. Conclusion

Working capital management is important part in firm financial management decision. The ability of the firm to continuously operate in longer period depends on how they deal with investment in working capital management. The optimal of working capital management could be achieved by firms that manage the trade-off between profitability and liquidity. In this study, the researchers found a strong negative relationship between the measurement of working capital management including the number of day's accounts receivable, inventory turnover in days and cash conversion cycle and current ratio with corporate profitability. The finding indicates that the period of collection of accounts receivables lower the profitability of the firm. The negative relationship between corporate profitability and cash conversion cycle shows that longer the cash conversion cycle is, lower the profitability. Previous studies regarding the average days of accounts payable reported negative correlation of this variable and the profitability of the firm. But, this study found positive significant relationship between these variables. Furthermore, the researchers found significant positive relationship between frim size and its net operating profit ratio. The conclusions are in confirmation with **Deloof (2003), Eljelly (2004), and Shin and Soenan (1998)** who found a strong negative relationship between the measurement of working capital management including the average collection period, inventory turnover in days and cash conversion cycle with corporate profitability. Thus the findings of this paper suggest that managers can create value for their shareholders by reducing the number of days for accounts receivables. In addition, the negative relationship between accounts receivables

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and firm's profitability suggest that less profitable firms will pursue a decrease of their accounts receivables in an attempt to reduce their cash gap in the cash conversion cycle. The positive relationship between accounts payable and profitability is consistent with the view that less profitability firms wait longer to pay their bills. So, it can be concluded that profitability can be enhanced if firms manage their working capital in a more efficient way.

Finally, as a caveat, the results of this research should be interpreted with great caution since this study exclusively depends on the published financial data and does not cover the total industry. It is suggested that further researches may be conducted on the same topic with different industries extending the years of the sample and each components of working capital should separately focus on its role in company, industry and the economy. This effort will lead to the formation of a similar type of theory.

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Appendix:

Table: Impact of Working Capital Management on Corporate Performance of Fuel and Power Industry (2005 – 2011)

Dependent variable:	**Net operating profitability**			
Regression Model:	**OLS**			
Models	**1** **ACP**	**2** **ITID**	**3** **APP**	**4** **CCC**
Constant	.3119279 (0.000)	-.3857763 (0.000)	.3072341 (0.000)	.3883618 (0.000)
SG	.05287 (0.156)	.0457551 (0.185)	.039545 (0.272)	.0511805 (0.112)
LOS	-.0027167 (0.365)	-.0064496 (0.033)	-.0044435 (0.139)	-.0061456 (0.025)
FDR	-.2143822 (0.000)	-.1768946 (0.000)	-.2509624 (0.000)	-.2027417 (0.000)
GWCTR	-.0056193 (0.193)	-.0025238 (0.476)	.0030346 (0.423)	-.0033012 (0.319)
CLTAR	-.0530437 (0.400)	-.0941837 (0.108)	-.134204 (0.037)	-.1027313 (0.061)
CATAR	-.0877822 (0.146)	-.067334 (0.232)	-.075407 (0.200)	-.0736087 (0.160)
CR	.0028826 (0.671)	.0037578 (0.554)	.0022256 (0.738)	.0018947 (0.748)
ACP	-.0003889 (0.001)	-	-	-
ITID	-	-.000381 (0.000)	-	-
APP	-	-	.0003982 (0.004)	-
CCC	-	-	-	-.00025 (0.000)
R-Square Adjusted R-Suared F statistics Prob(F-statistics)	0.5220 0.4406 6.410 0.0000	0.5819 0.5107 8.18 0.0000	0.5421 0.4642 6.96 0.0000	.6392 .5778 10.41 0.0000

The *P-values* are shown in parentheses

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Performance Evaluation of Selected Tannery Companies Enlisted in Dhaka Stock Exchange

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ABSTRACT

Being a developing country Bangladesh has always been considered as having two natural comparative advantages over its competitors: the domestic livestock population and the low cost available labor that can help transform this raw material into products suitable for export. The industry employs about 100,000 people directly, producing fine quality crust & finished leather for export as well as for home consumption. In this paper I have tried to analyze the development and growth of Selected Tannery Companies Enlisted in Dhaka Stock Exchange. It is observed that all the selected companies are able to experience a stable growth of Total Sales, Total Assets, Net Income during the period of 2007-2011. Sixteen trend equations have been tested for different activities of the Selected Tannery Companies. Among them the trend value of Fixed Assets, Retained Earnings, Price Earning (P/E) Ratio and Asset to Equity Ratio are positive in case of all the selected Tannery Companies. Square of correlation coefficient (r^2) has also been tested for all trend equations. The r^2 of Total Assets, Total Sales, Inventory Turnover Ratio, Net Income and Export Sales is more than 0.5, which indicates the prospect of selected Tannery Companies in Bangladesh is very bright.

Keywords: Tannery Industry, Capital Structure, Export Sales, Net Income, Return on Equity.

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INTRODUCTION

INTRODUCTION

In Dhaka Stock Exchange (DSE) Leather; Leather goods & Footwear industries are classified as Tannery Industry. During Pakistan period (1947-1971), the industry was dominated by non-Bengali immigrants from India, who had the knowledge and the know-how of leather processing industry. At that time, leather processing was limited to the production of wet blue leather (semi-processed tanned leather) and the non-Bengali traders exported a large part of the produce to West Pakistan for further processing and production of leather goods. After the independence of Bangladesh, the government took over the tannery industry abandoned by the departing non-Bengali entrepreneurs but had limited success in operating them under the public sector. Export of processed leather consisted almost entirely of wet blue leather till 1980-81. After 1981, a number of policy support measures aimed at raising

the level of value addition in the industry provided incentive for new private investment in leather industry. The ban on export of wet blue leather in June 1990 led to the setting up of modern leather tanning units for the production of crust leather (tanned leather after further processing of wet blue leather) and finished leather and this was followed by new investment in leather goods industry, particularly leather footwear. (http://www.bfllfea.org/index.php/top-blocks/item/45-bfllfea-profile). Most leather and leather goods are exported to Germany, Italy, France, Spain, Russia, Brazil, Japan, China and Singapore. At present, there are about 170 tannery units in Bangladesh and they use locally available raw hides and skins. Of them 114 are large and medium units (by local standards) and are registered with the Directorate of Industries. Others are mostly of small and cottage type and are not on the register of the government. (http://www.banglapedia.org/HT/T_0047.HTM). The exporting Tannery companies are monitored by Bangladesh Finished Leather; Leather goods & Footwear Exporters' Association (BFLLFEA), which was established in 1986 which is registered with the Registrar of Joint Stock Companies & Firms and a member of the Federation of Bangladesh Chambers of Commerce & Industry (FBCCI). Tannery is the 3rd largest export earning sector representing highly dynamic and value added industry in leather and leather products besides being job oriented sector. The industry employs about 100,000 people directly, producing fine quality crust & finished leather for export as well as for home consumption. It contributes about 2% of GDP and 3% to the overall export earnings of the country and is considered to be the most significant sector which plays a viable role in revamping economic spectrum of the country (http://www.bfllfea.org/index.php/item/7-about-bfllfea). Most of the Tannery Companies are actively engaged in manufacturing and fully geared-up towards promoting export of quality crust & finished leather and leather products on modern pattern as per international demand and are playing their positive role in earning much needed foreign exchange by invigorating country's export volume. Bangladesh always been considered as having two natural comparative advantages over its competitors: the domestic livestock population and the low cost available labor that can help transform this raw material into products suitable for export. Hides and skins of Bangladesh have well reputation and good demand in world market for the fine fiber structure and good grains. The annual supply of hides and skins in the country is around 220 million square feet that consists of 63.98% cow hides, 32.74% goat skins, 1.09%, sheep skins, 2.19% buffalo hides. (http://www.bfllfea.org/index.php/top-blocks/item/45-bfllfea-profile). Tannery is known as "dirty industry" all over the world because of its environment polluting capacity. In Bangladesh the situation is not different. Tanneries at Hazaribagh in the metropolis area of Dhaka do not have effluent plants. This creates pollution and put at risk on health of localities. As a result, government has decided to shift the tanneries to a new industrial Estate Saver, at the outskirts of Dhaka City, equipped with all infrastructure facilities including modern Central Effluent Treatment Plant on an area of 200 acres of land. Additional 200 acres of land is under process of acquisition for expansion of the Estate for accommodating the prospective leather footwear and leathers industries. The development of leather and leather products sector has a high priority in terms of indigenous raw material based industry. Leather itself is one of the main inputs for the low investment, labor intensive leather products industry i.e. shoes, garments and leather goods for export market. Total Export of leather, footwear and leather goods of the Country from 2005 – 2011 are:

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Years	Products			Total (Million USD)
	Leather (Million USD)	Footwear (Million USD)	Leather Goods (Million USD)	
2005 – 2006	257.27	95.44	7.12	359.83
2006 – 2007	266.08	135.94	11.03	413.05
2007 – 2008	284.41	169.60	8.87	462.88
2008 – 2009	178.20	182.92	18.78	379.90
2009 – 2010	226.10	204.09	28.96	459.15
2010 – 2011	297.83	297.80	55.40	651.03

(http://www.bfllfea.org/index.php/top-blocks/item/44-bfllfea-overview).

REVIEW OF LITERATURE

According to Al-Shammari and Salirni (1998) profitability ratio especially return on equity (ROE) signals the earning capability of the organization. They also suggest that higher return on equity (ROE) ratio is appreciable as it is the primary indicator of bank's profitability and functional efficiency.

Selling, T. I., & Stickney, C. P. (1989) found that rate of return on assets (ROA) over time and across firms and industries can be a useful tool to understand the microeconomic and business strategy concepts. As products pass through different stages in their life cycles, ROA also differs across industries and through time.

Zhu, J. (2000) found in his study on Fortune 500 companies that the top-ranked companies by revenue do not necessarily have top-ranked performance viewed as being multidimensional. Only about 3% companies were operating on the best-practice frontier. Substantial technical and scale inefficiencies are found. Decreasing returns to scale (DRS) are uncovered among the relatively large (revenue-top-ranked) companies. The study of congestion shows that a reduction in current levels of employees, assets and equity may actually increase revenue and profit levels.

Myers (1984) stated that static trade off theory is the need to balance gains and costs of debt financing. Static trade off theory argues firms will choose the equity and debt financing to balance the costs and benefits of debt in order to achieve optimal capital structure. Optimal capital structure is to maximize the firm value. Firms issue equity when their debt is above the desired target of debt and issue debt when the debt is below the target. Hence, firms issue debt and equity proportionately to stay close to the target if they want to have external financing.

According to Abor (2005) the mixture result of Ghana firms showed significantly positive relationship between ratio of short term debt to total assets and profitability. He also stated that the ratio of total debt to total assets is positively related to profitability. However, the ratio of long term debt to total assets is negatively related to profitability which was measured by Return on Equity (ROE). Thus, methods used do have influence on capital structure studies.

Stulz (1990) stated that the debt can be the positive and negative effect on the firm value. The effect of debt on the firm value depends on the growth opportunities. Therefore, debt is positive related to the value of a low growth opportunities firm and the debt is negative related to the value of a high growth opportunities firm.

Myers and Majluf (1984) show that external capital is more costly than internal capital and firms that require more external capital relative to internal capital will have lower

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investment, all else equal, assuming firms follow the basic net present value (NPV) decision rule for capital budgeting.

Welch, I. (2011) pointed out that there are two common problems in capital structure research. First, although it is not clear whether non-financial liabilities should be considered debt, they should never be considered as equity. Yet, the common financial-debt-to-asset ratio (FD/AT) measure of leverage commits this mistake. Thus, research on increases in FD/AT explains, at least in part, decreases in non-financial liabilities. Future research should avoid FD/AT altogether. He quantifies the components of the balance sheet of large publicly traded corporations and discusses the role of cash in measuring leverage ratios. Second, equity-issuing activity should not be viewed as equivalent to capital structure changes. Empirically, the correlation between the two is weak. The capital structure and capital issuing literature are distinct.

Minton et al., (1999) showed that higher cash flow volatility is associated with lower average levels of investment in capital expenditures, R&D, and advertising. This association suggests that firms do not use external capital markets to fully cover cash flow shortfalls but rather permanently forgo investment. Cash flow volatility also is associated with higher costs of using external capital. Moreover, these higher costs, as measured by some proxies, imply a greater sensitivity of investment to cash flow volatility. Thus, cash flow volatility not only increases the likelihood that a firm will need to access capital markets, it also increases the costs of doing so.

Objectives of the Study

The specific objectives of the study are as follows;

1) To present an overview of Selected Tannery Companies of Bangladesh.
2) To appraise the performance of selected Tannery Companies of Bangladesh
3) To recommend remedial measures for the development of selected Tannery Companies of Bangladesh

Scope & Methodology of the Study

The present study has been carried out to evaluate the performance of selected Tannery Companies enlisted in Dhaka Stock Exchange (DSE). At present there are only 5 Tannery Companies are enlisted in DSE and have selected 4 of them. The selected tannery companies are Bata Shoe Company (Bangladesh) Limited (BATA), Apex Adelchi Footwear Limited (ADELCHI), Apex Tannery Limited (APEXT), and Legacy Footwear Limited (LEGACY). This study has been mainly based on data from secondary sources. The relevant data and information were collected from Stock Exchanges, Annual Reports of different Tannery Companies in Bangladesh, Securities and Exchange Commission and web sites of relevant Tannery Companies of Bangladesh, etc. Relevant articles and literature in this context have also been consulted. In this article I have analyzed five years data from 2007 to 2011 of selected tannery Companies of Bangladesh. For evaluating the performance of selected Tannery Companies of Bangladesh, the data has been analyzed through the various statistical measures like growth percentage, trend equation, square of correlation coefficient, etc.

There are different types of straight line Trend Methods of Time Series Analysis. In this research paper I have used the Least Square method which is most popular and widely used. This least square method can be used either to fit a parabolic trend or a straight-line trend. The equation Yc = a + b represents the straight line trend. Where, Yc refers to the

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trend values to distinguish them from the actual Y values. 'a' is the Y intercept or the value of the Y variable when X = 0. 'b' refers to the slope of the line of the amount of change in Y variable that if associated with a change of one unit in X variable. 'X' variable in time series analysis represents time. The square of correlation coefficient (r^2) is called the multiple determinations or squared multiple correlation coefficients. The coefficient of correlation is denoted by r. The value of r lies between 0 and 1. The higher the r^2 the greater the percentage of the variation of Y explained by the regression model, that is, the better the "goodness of fit" of the regression model to the sample observations and r^2 closer to zero, the worse the fit. I have used the SPSS software to calculate the statistical out comes.

Limitation of the Study

In Bangladesh there are more than 170 registered Tannery companies. However, only 5 (Five) Tannery companies are enlisted in the DSE. I have chosen 4 (Four) companies out of those 5 (five). So, the selected number of companies is very negligible compare to the total number of companies that are in operation. This paper is completely based on the secondary information which also can be treated as limitation for this paper.

An overview of the Selected Tannery Companies Enlisted in Dhaka Stock Exchange (DSE)

Bata Shoe Company (Bangladesh) Limited (BATA)

The Bata Shoe Organization (BATA) was founded in 1894 by Czech businessman Tomas Bata. BATA is now the world's largest manufacturer and marketer of footwear operating across the globe. In Bangladesh, Bata started its operation in 1962. The company is one of the largest tax–paying corporate bodies contributing Tk. 1.2 billion (year 2009) which represents approximately 70% of tax paid by the entire footwear sector of Bangladesh. Currently Bata Shoe Company (Bangladesh) Limited operates two manufacturing facilities – one in Tongi and the other in Dhamrai. With a production capacity of 110,000 pairs of shoes daily, the company also has a modern tannery facility with an output of 5 million square feet of leather annually.

Apex Adelchi Footwear Limited (ADELCHI)

Apex Adelchi Footwear Limited (ADELCHI) is one of the leading manufacturers and exporters of leather footwear in Bangladesh. It exports to Western Europe, North America and Japan. ADELCHI pioneered the export of value added finished products export in the leather sector of Bangladesh and is also involved in the local footwear retail business with the second largest shoe retail network in the country. ADELCHI has strategic, technical and marketing alliances with Italy. ADELCHI is public listed and traded since 1993. Gallerie Apex is the local manufacturing and retail wing of ADELCHI. While ADELCHI has predominantly earned both critical and commercial fame through export of high quality leather footwear in the international arena, Gallerie Apex has sought to adeptly make use of that expertise to provide high quality, fashionable footwear to the Bangladeshi consumers.

Apex Tannery Limited (APEXT)

Apex Tannery Limited (APEXT), incorporated in July 1976, is the largest tannery in Bangladesh and one of the largest in South Asia. In 1986, the company was converted into public limited company. It is equipped with the state of the art Italian modern machinery and maintaining high quality strictness. Principal activity of the company is to produce high quality leather, by using Italian chemicals, technology, complying with world fashion standards and specifications. The company is 100% export oriented and exports to Europe,

China, South America and all major leather market of the world. It has two manufacturing facilities; one of the units is situated at Hazaribagh and the other one is situated at Shafipur of Gazipur. Apex Tannery Limited is the first leather industry in Bangladesh to achieve the ISO 9001-2000 from DAS Certification UK in Quality Management System (QMS). Moreover, Apex Tannery has also got the recognition from USA Labor Department (US DOL) for occupational safety and health, best practice, thus becoming a model of other tanneries.

Legacy Footwear Limited (LEGACY)

Legacy Footwear Ltd. is an export oriented leather shoe manufacturing unit. The production of the company has been start since 1996. The factory has grown from 20 employees to a 180 workers and is capable of producing 1000 pair of shoes daily. The factory is situated in Mouchak under Gazipur district which is a flood free area about 45km from Dhaka city. The factory is equipped with modern machineries of Italian and German origin. The company is 100% export oriented and mostly exports to Japan, however recently they have expanded their export to Italy, UK, Spain, Hong Kong and India.

Capital Structure of the selected Tannery Companies Enlisted in DSE

The Capital Structure of the selected Tannery Companies is presented in the Table: 1. among the selected Tannery companies BATA is the only company that have used above 60% of their Authorized Capital. However, the rest of companies have used only 40% of their Authorized Capital. Among all the selected companies ADELCHI and APEXT has the highest Authorized Capital i.e. BDT 500,000 (Thousands) and APEXT has the highest Paid-up Capital i.e. BDT 152,000 in 2011.

Debt Ratio of the selected Tannery Companies Enlisted in DSE

The debt measures the proportion of the total assets financed by the firm's creditors and the higher debt ratio means the greater amount of other people's money being used to generate profits. The debt ratio of the selected Tannery Companies is presented in the Table: 2. among the selected Tannery companies ADELCHI has the highest total assets, total debt and highest debt ratio i.e. BDT 7,180,041 (Thousands), BDT 5,152,165 and 71.76% respectively in 2011.

Total Asset Turnover Ratio of the selected Tannery Companies Enlisted in DSE

Total Asset Turnover indicates the efficiency with which the firm uses its assets to generates sales and the higher the firm's total asset turnover, the more efficiently its assets have been used. It has been observed from the table: 3 that among all the selected companies BATA has been more consistent throughout the study period to keep their Total Asset Turnover above 1.77 times and BATA has the highest Total Asset Turnover Ratio i.e. 1.89 in 2009 whereas LEGACY has the lowest ratio i.e. 0.29 in 2009.

Inventory Turnover Ratio of the selected Tannery Companies Enlisted in DSE

Inventory Turnover commonly measures the activity, or liquidity of the firm's inventory. From the table: 3 we can observe that among all the selected companies during the study period ADELCHI has the highest Inventory Turnover Ratio i.e. 4.20 in 2008 whereas LEGACY has the lowest ratio i.e. 1.22 in 2011.

Performance Evaluation of the Selected Tannery Companies Enlisted in DSE

This section appraises the performance of the selected Tannery Companies Enlisted in DSE, which will help to have an idea regarding the performance of the selected Tannery Companies Enlisted in DSE:

The total sales of the selected Tannery Companies and its growth pattern are shown in Table 5. During the selected period of time all the selected companies except APEXT in 2009 have experienced a positive growth. Among the selected companies ADELCHI has the highest

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total sales i.e. 9,499,257 (Thousands) in 2011. Though, the highest growth rate of total Sales was experienced by APEXT in 2011 i.e. 45.96%.

The table: 6 present the Export Sales of the selected Pharmaceutical Companies. In 2009 all the companies except LEGACY experienced a negative growth rate. Among the selected companies ADELCHI has the highest total sales i.e. 9,499,257 (Thousands) in 2011. But the highest growth rate of total Sales i.e. 45.96% in 2011 is experienced by APEXT. We also need to note the APEXT and LEGACY being 100% export oriented company the growth pattern for both total sales and export sales are the same. We also need to take note due to the global economic recession the growth rate of all the selected companies was the lowest or negative during 2009 and 2010.

The table: 7 show the Gross Profit Margin of the selected Tannery Companies. Among all the selected companies BATA is the only company that maintained the Gross Profit Margin above 30% throughout the selected time period. BATA has the highest Gross Profit Margin that is 37.02% in 2009 and APEXT has the lowest Gross Profit Margin that is 5.88% in 2007.

The Net Profit Margin of the selected Tannery Companies is presented in the table: 8. During the selected time period BATA is the only company that maintained the Net Profit Margin above 8% among all the selected companies. APEXT has the lowest Net Profit Margin that is 0.96% in 2008 whereas BATA has the highest Net Profit Margin that is 9.72% in 2008.

It is observed from the table: 9 that all the selected companies except APEXT have experienced positive growth in the Net Income. During selected time period the Net Income of APEXT fluctuated most, among all the selected companies BATA has the highest amount of Net Income i.e. BDT 580,617 (Thousands) in 2011 and LEGACY has the lowest amount of Net Income i.e. BDT 3,695 (Thousand) in 2007, and in 2009 Net Income of APEXT increase by 494.37%.

The table: 10 shows that among all selected the companies ADELCHI had the lowest Operating Expense Ratio in 2008 which is 2.25% whereas BATA had the highest Operating Expense ratio i.e. 49.55% in 2008. During the selected time period of 2007 to 2011 among all the companies, BATA was the only company that maintained a steady Operating Expense ratio whereas Operating Expense ratio of ADELCHI fluctuated most.

The Assets to Equity Ratio of the selected Tannery Companies is presented in the Table: 11. We can observe for the table that except ADELCHI all other companies are on average maintaining the Assets to Equity Ratio above 30%. APEXT has the highest Asset to Equity ratio i.e. 78.62% in 2010 whereas ADELCHI has the lowest Asset to Equity ratio i.e. 13.02% in 2007.

We can observe from the Table: 12 that throughout the selected time period ADELCHI is the only company that paid Bonus dividend. All the selected companies except LEGACY has paid cash dividend throughout the time period.

The table: 13 demonstrate the growth pattern of Total Assets. From the table we can observe that BATA is having a steady growth rate of Assets from 2007 to 2011, whereas ADELCHI has both the highest amount of Total Assets and growth rate i.e. BDT 7,180,041 (Thousands) and 53.52% respectively in 2009 and LEGACY has the lowest Total Assets i.e. 163,437 (Thousands) in 2007.

The Market / Book (M/B) Ratio is presented in the Table: 14. The M/B Ratio provides an assessment of how investors view the firm's performance. It relates the market value of the firm's share to their book strict accounting – value. From the table we can observe that

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among all the selected Tannery companies ADELCHI has the highest M/B Ratio i.e. 47.65 in 2008 and LEGACY has the lowest M/B Ratio i.e. 0.90 in 2007.

The Earning Per Share (EPS) is presented in the Table: 15. The firm's EPS is generally of interest to present or prospective stockholders and management. EPS represents the amount earned during the period on behalf of each outstanding share of common stock. From the table we see that during the selected study period all the selected Tannery Companies EPS and its growth rate fluctuated a lot. However, BATA and LEGACY are the only companies to not to experience a negative growth rate throughout the study period. Among the selected Tannery Companies ADELCHI have the highest EPS i.e. 225.81 in 2007 and ADELCHI also to experience the highest negative growth rate of EPS i.e. - 89.21 in 2010. However, APEXT has the highest positive growth rate of EPS i.e. 505.68% in 2007.

The Return on Equity (ROE) and Growth rate of ROE of the selected Tannery Companies are presented in the Table: 16. It is observed from the table that during the selected time period BATA is the only company which is consistently maintaining its ROE above 37.00%. However, ADELCHI has highest ROE i.e. 46.54% in 2007 whereas APEXT has the lowest ROE i.e. 3.78%. APEXT have the highest growth rate of ROE i.e. 420.92% in 2009 and LEGACY has the highest negative i.e. -47.66%. However, during the study period due to the fluctuation in the return none of the companies had a steady ROE growth rate.

From the Table: 17 we can see that the Return of Assets (ROA) of all the selected Tannery Companies was very fluctuating. Throughout the study period none of the selected companies had a steady ROA growth rate. Among the selected Tannery Companies BATA had the highest ROA i.e. 17.98% in 2008 and in 2009 APEXT had the highest ROA growth rate i.e. 512.89%.

TREND EQUATIONS OF SELECTED TANNERY COMPANIES

The summary trend of equation and r^2 of Total Assets Turnover Ratio of selected Tannery Companies are shown in the table: 18. The table reveals that BATA is the only company to experience a positive trend equation and the Goodness of fit of BATA and ADELCHI are high i.e. more than 0.50.

The summary of trend equation and r^2 of Inventory Turnover Ratio of selected Tannery Companies are presented in Table: 19. We can observe from the table that trend equation of BATA and APEXT are positive. However, the Goodness of fit of all the equations are high i.e. more than 0.60.

Table: 20 present the summary of trend equation and r^2 of Total Sales of selected Tannery Companies. The table reveals that except APEXT all the selected companies have positive the trend equation. The Goodness of fit of all the selected Tannery Companies' are high i.e. more than 0.850 except APEXT. In case of BATA it is very high i.e. more than 0.98.

Table: 21 present the summary of trend equation and r^2 of Export Sales of selected Tannery Companies. The table reveals that ADELCHI and LEGACY have positive the trend equation and the Goodness of fit of ADELCHI and LEGACY are high i.e. more than 0.80.

Table: 22 exhibit the summary of trend equation and r^2 of Cost of Goods Sold of selected Tannery Companies. The table reveals that among all the selected Tannery Companies, APEXT is the only company to experience a negative trend equation and the Goodness of fit of all the selected Tannery Companies are high i.e. more than 0.80 except APEXT.

Table: 23 demonstrate the summary of the trend equation and r^2 of Operating Expense Ratio of selected Tannery Companies. The table reveals that the trend equation of all the selected

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Tannery Companies are positive and except APEXT the Goodness of fit of all the selected companies are high i.e. more than 0.80. In case of LEGACY it is very high i.e. more than 0.98.

The summary of trend equation and r^2 of Net Income of selected Tannery Companies is exhibited in table: 24. The table reveals that the trend equation of all the selected Tannery Companies is positive except APEXT. Except APEXT the Goodness of fit of all the selected Tannery companies are high i.e. more than 0.80.

The summary of trend equation and r^2 of Retained Earnings of selected Tannery Companies is presented in the table: 25. It is reflected from the table that all the selected Tannery Companies have positive the trend equation. Except APEXT the Goodness of fit of all the selected companies are high i.e. more than 0.65.

The summary of trend equation and r^2 of Cash Dividend of selected Tannery Companies are exhibited in table: 26. The table reveals that except LEGACY all the selected Tannery Companies are experiencing a positive the trend equation and the Goodness of fit of all the selected companies except LEGACY and BATA are high i.e. more than 0.90. In case of ADELCHI, the Goodness of fit value is 1.000.

Table: 27 exhibit the summary of trend equation and r^2 of Asset to Equity Ratio of selected Tannery Companies. It is reflected from the table that the trend equation of all the selected Tannery Companies is positive and the Goodness of fit of BATA is very high i.e. more than 0.95.

The summary of trend equation and r^2 of Fixed Assets of selected Tannery Companies is presented in table: 28. The table reveals that the trend equation of all the selected Tannery Companies are positive and except APEXT and LEGACY the Goodness of fit of the rest of the companies are high i.e. more than 0.50.

The summary of trend equation and r^2 of Total Assets of selected Tannery Companies are exhibited in table: 29. The table reveals that except APEXT the trend equation of all the selected Tannery Companies are positive and the Goodness of fit of all the equations are high i.e. more than 0.80 except APEXT. In case of BATA it is very high i.e. more than 0.97.

The summary of trend equation and r^2 of Earning Per Share (EPS) of selected Tannery Companies is presented in table: 30. The table reveals that the trend equation of BATA, APEXT and LEGACY are positive and the Goodness of fit of all the selected Tannery Companies are high i.e. more than 0.80 except APEXT.

The summary of trend equation and r^2 of Price Earning (P/E) Ratio of selected Tannery Companies is presented in table: 31. The table reveals that except APEXT the trend equation of all the selected companies are positive. The Goodness of fit of BATA and LEGACY are high i.e. more than 0.50.

Table: 32 exhibit the summary of trend equation and r^2 of Return on Equity (ROE) of selected Tannery Companies. The table reveals that among all the selected Tannery Companies ADELCHI is the only company that has a positive trend equation. ADELCHI also is the solitary company having the Goodness of fit more than 0.50.

The summary of trend equation and r^2 of Return on Assets (ROA) of selected Tannery Companies is exhibited in table: 33. The table reveals that all the selected Tannery Companies except ADELCHI have positive trend equation and the Goodness of fit of ADELCHI and LEGACY are high i.e. more than 0.60.

FINDINGS, RECOMMENDATION AND CONCLUSION

Bangladesh has always been considered as having two natural comparative advantages over its competitors: the domestic livestock population and the low cost available labor that can help transform this raw material into products suitable for export. If the Total Asset

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Turnover and Inventory Turnover ratios are taken into account we can say that during the selected time period all the selected companies except LEGACY are doing fairly well. However, the global economic recession during the year 2009 and 2010 all the selected companies had a deep in the respective ratios.

It has been exhibited that the net income of all the selected Tannery Companies except APEXT has increased during study period of 2007 to 2011. As two of the selected companies are 100% export oriented, the global recession had a negative impact on the sales which ultimately affected the net income of those companies. It is also been exhibited that in 2011 the EPS of all the selected Tannery Companies except APEXT had a positive growth, which indicates that the profitability of companies is quite satisfactory. Thought the Return on Equity was quite unstable during the selected time period, all the selected Tannery Companies have declared dividend in the form of Cash, except LEGACY that did not pay any dividend in 2010 and 2011. It ensures a guaranteed return to the investors that helps them to have more confidence in this Industry and to stick to their investment.

I have tested sixteen trend equations for different activities of the selected Tannery Companies. Square of correlation coefficient (r^2) has also been tested for all the trend equations. Among those the trend value of Total Sales, Net Income, Cost of Goods Sold and Total Assets are positive for all the selected companies except APEXT. Except APEXT all the selected Tannery companies' r^2 of Total Seals, Net Income, Cost of Goods Sold and Total Assets are more than 0.80. However, the trend equation of Operating Expense, Retained Earnings, Asset to Equity Ratio, Fixed Assets and Price Earnings (P/E) Ratio of all the selected companies are positive. The r^2 of Retained Earnings of all the selected Tannery companies' except APEXT is more than 0.60. In case of Assets to Equity Ratio, the r^2 of all the selected Tannery companies' except APEXT is more than 0.50; the r^2 of Fixed Assets of BATA and ADELCHI is more than 0.50; Except ADELCHI and APEXT all the selected Tannery companies' r^2 of Price Earning (P/E) Ratio is more than 0.50. The trend value of Cash Dividend for all the selected companies except LEGACY are positive and the r^2 of Cash Dividend for ADELCHI and APEXT is more than .90. The trend value of Inventory Turnover Ratio for BATA and APEXT are positive. The r^2 of Inventory Turnover Ratio for all the selected companies is more than .60. The trend value of Export Sales for ADELCHI and LEGACY are positive. The r^2 of EXPORT Sales for ADELCHI and LEGACY is more than .80. It indicates that the future of the Tannery companies in Bangladesh is very bright.

From the above analysis it can be said that although the total Sales of all the selected Tannery companies have shown an increasing trend during the study period except in 2009 for APEXT, the Total Sales of LEGACY is not satisfactory in comparison to other selected companies. So, LEGACY needs to increase their total sales to match the pace of other companies and ADELCHI also needs to open more outlets to capture the local market which will also help them to reduce the dependency on export sales.

It has been observed that due to the global economic recession in 2009 the export sales of all the selected companies except LEGACY decreased. However, all the companies have managed to experience a good growth in the year 2011. APEXT and LEGACY being 100% export oriented their total sales growth rate and export sales growth rate are same. However, BATA and LEGACY should try to boost up their export sales compare to other selected companies. At the same time all the tannery companies need to find new market for exporting their goods so that they can capture more market share and reduce the dependency on the existing foreign customers.

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It is also been observed that all the companies except BATA has managed to keep their operating expenses in single digit. Despite of that the Net Profit Margin (Table: 8) of ADELCHI, APEXT and LEGACY are lower than that of BATA. It means all the companies have to increase their Sales to ensure a lower Operating Expense Ratio and a better Net Profit Margin.

The APEXT should try to keep the Cost of Goods Sold and operating Expenses either stable or need to decrease as the net income of the was very fluctuating during the selected study period, which ultimately will help them ensure a higher profit.

It is also been observed that due to fluctuation in net income none of the selected Tannery Companies had a stable Return on Equity and Return on Assets during the study period. For this all the selected companies need to try to ensure a stable rate of return by increasing the Net Profit and decreasing the expenses.

About 40% of the supply of hide and skin comes from animals slaughtered during Eid-Ul-Azha and most of the treading of the hide and skin are done through the seasonal business people. The government assistance is required to keep a close eye on these seasonal business people so that they cannot smuggle the hide and skin to the neighboring countries and at the same time the government also needs to ensure fair price for these hides and skins so that they are encouraged to sell the hide and skin to the local tannery companies. The government also should take initiative to provide lower interest rate bank loans to the tannery companies during the Eid-Ul-Azha so that they can purchase the hide and skin. As most of the tannery companies are small and medium scale, the government should assist the companies to get lower interest rate bank loans to import latest machineries which not only will help them to grow farther but also will help them to emerge as large scale company. Access to the latest technology will help the companies to increase the quality of the product along with the rate of production which ultimately will result into a repaid growth for the entire industry.

It quite confidently can be said that if the suggestions made in this paper are executed then there is a probability that the Tannery sector would be able to overcome its current problems and might able to contribute in the swift advancement of the economy of Bangladesh and the Tannery sector of Bangladesh would be able to create sufficient opportunities to occupy a prestigious position in the international arena.

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APPENDIX

Table: 1. The Capital Structure of the selected Tannery Companies

SL	Name of Company	Capital Structure in 2011	
		Authorized Capital	Paid-up Capital
1	BATA	200,000	136,800
	% of Authorized Capital	68.40%	
2	ADELCHI	500,000	112,500
	% of Authorized Capital	22.50%	
3	APEXT	500,000	152,400
	% of Authorized Capital	30.48%	
4	LEGACY	200,000	72,500
	% of Authorized Capital	36.25%	

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited.
** Figures are in Thousands BDT*
Note: US $1 = BDT 78.00

Table: 2. Debt Ratio of the selected Tannery Companies

SL	Name of Company	Debt Ratio in 2011	
		Total Assets	Total Debt
1	BATA	3,546,727	1,985,652
	Ratio %	55.99%	
2	ADELCHI	7,180,041	5,152,165
	Ratio %	71.76%	
3	APEXT	1,613,300	697,272
	Ratio %	43.22%	
4	LEGACY	330,041	179,765
	Ratio %	54.47%	

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited

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** Figures are in Thousands BDT, Note: US $1 = BDT 78.00*

Table: 3. Total Asset Turnover Ratio of the selected Tannery Companies

SL	Name of Company	Total Asset Turnover Ratio				
		2007	2008	2009	2010	2011
1	BATA	1.77	1.85	1.89	1.85	1.87
2	ADELCHI	1.57	1.73	1.67	1.48	1.32
3	APEXT	1.74	1.65	1.07	1.58	1.56
4	LEGACY	0.38	0.45	0.29	0.31	0.37

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited

Table: 4. Inventory Turnover Ratio of the selected Tannery Companies

SL	Name of Company	Inventory Turnover Ratio				
		2007	2008	2009	2010	2011
1	BATA	2.02	2.08	2.26	2.13	2.44
2	ADELCHI	3.67	4.20	3.66	2.61	2.88
3	APEXT	2.43	2.08	2.66	2.63	3.04
4	LEGACY	1.58	1.80	1.61	1.24	1.22

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited

Table: 5. Total Sales of the selected Tannery Companies

SL	Name of Company	Total Sales (BDT)				
		2007	2008	2009	2010	2011
1	BATA	3,976,388	4,623,312	5,141,035	5,663,091	6,647,846
	Growth %		16.27%	11.20%	10.15%	17.39%
2	ADELCHI	4,394,617	5,621,742	5,820,870	6,931,517	9,499,257
	Growth %		27.92%	3.54%	19.08%	37.04%
3	APEXT	2,535,432	2,580,774	1,625,358	1,723,639	2,515,867
	Growth %		1.79%	-37.02%	6.05%	45.96%
4	LEGACY	62,046	77,805	78,605	89,696	122,842
	Growth %		25.40%	1.03%	14.11%	36.95%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited
** Figures are in Thousands BDT*
Note: US $1 = BDT 78.00

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Table: 6. Export Sales of the selected Tannery Companies

SL	Name of Company	Export Sales (BDT)				
		2007	2008	2009	2010	2011
1	BATA	73,550	95,286	72,214	71,610	83,259
	Growth %		29.55%	-24.21%	-0.84%	16.27%
2	ADELCHI	4,131,024	5,073,735	4,953,814	5,553,194	7,496,037
	Growth %		22.82%	-2.36%	12.10%	34.99%
3	APEXT	2,535,432	2,580,774	1,625,358	1,723,639	2,515,867
	Growth %		1.79%	-37.02%	6.05%	45.96%
4	LEGACY	62,046	77,805	78,605	89,696	122,842
	Growth %		25.40%	1.03%	14.11%	36.95%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited
** Figures are in Thousands BDT*
Note: US $1 = BDT 78.00

Table: 7. Gross Profit Margin of the selected Tannery Companies

SL	Name of Company	Gross Profit Margin				
		2007	2008	2009	2010	2011
1	BATA	33.27%	34.45%	37.02%	36.12%	35.52%
2	ADELCHI	11.71%	11.70%	15.59%	15.75%	14.31%
3	APEXT	5.88%	6.44%	9.55%	15.56%	8.95%
4	LEGACY	30.30%	21.45%	23.34%	28.09%	26.54%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited

Table: 8. Net Profit Margin of the selected Tannery Companies

SL	Name of Company	Net Profit Margin				
		2007	2008	2009	2010	2011
1	BATA	8.17%	9.72%	8.74%	9.61%	8.73%
2	ADELCHI	3.85%	3.38%	3.63%	3.29%	2.75%
3	APEXT	1.06%	0.96%	9.03%	8.29%	3.85%
4	LEGACY	5.96%	4.89%	6.70%	9.19%	8.94%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited

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Table: 9. Net Income of the selected Tannery Companies

SL	Name of Company	Net Income (BDT)				
		2007	2008	2009	2010	2011
1	BATA	324,849	449,416	449,406	543,971	580,617
	Growth %		38.35%	0.00%	21.04%	6.74%
2	ADECHI	169,358	189,828	211,532	228,227	261,011
	Growth %		12.09%	11.43%	7.89%	14.36%
3	APEXT	26,761	24,697	146,792	142,853	96,843
	Growth %		-7.71%	494.37%	-2.68%	-32.21%
4	LEGACY	3,695	3,804	5,268	8,240	10,977
	Growth %		2.95%	38.47%	56.42%	33.21%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited
** Figures are in Thousands BDT, Note: US $1 = BDT 78.00*

Table: 10. Operating Expense Ratio of the selected Tannery Companies

SL	Name of Company	Operating Expense Ratio				
		2007	2008	2009	2010	2011
1	BATA	20.65%	20.58%	24.40%	22.82%	23.01%
	Growth %		-0.34%	18.52%	-6.47%	0.83%
2	ADELCHI	3.83%	2.25%	5.40%	7.63%	6.41%
	Growth %		-41.22%	140.21%	41.14%	-15.93%
3	APEXT	3.10%	3.84%	4.80%	4.27%	3.96%
	Growth %		24.05%	24.83%	-10.98%	-7.16%
4	LEGACY	4.93%	5.29%	7.68%	8.18%	6.57%
	Growth %		7.33%	45.26%	6.48%	-19.71%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited

Table: 11. Assets to Equity Ratio of the selected Tannery Companies

SL	Name of Company	Assets to Equity Ratio									
		2007		2008		2009		2010		2011	
		Asset	Equity	Asset	Equity	Asset	Equity	Asset	Equity	Asset	Equity
1	BATA	2,251,961	822,585	2,499,136	972,041	2,722,964	1,120,487	3,056,957	1,322,458	3,546,727	1,561,075
	Ratio %	36.53%		38.90%		41.15%		43.26%		44.01%	
2	ADELCHI	2,794,310	363,860	3,248,435	562,935	3,487,132	735,092	4,677,044	726,066	7,180,041	2,027,876
	Ratio %	13.02%		17.33%		21.08%		15.52%		28.24%	
3	APEXT	1,457,962	655,399	1,568,380	654,188	1,520,981	746,436	1,090,410	857,285	1,613,300	916,028
	Ratio %	44.95%		41.71%		49.08%		78.62%		56.78%	
4	LEGACY	163,437	51,492	173,955	53,160	270,808	140,629	286,215	141,619	330,041	150,276
	Ratio %	31.51%		30.56%		51.93%		49.48%		45.53%	

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited
** Figures are in Thousands BDT, Note: US $1 = BDT 78.00*

Table: 12. Dividend of the selected Tannery Companies

SL	Name of Company	Dividend									
		2007		2008		2009		2010		2011	
		Cash	Bonus	Cash	Bonus	Cash	Bonus	Cash	Bonus	Cash	Bonus
1	BATA	25.00	0.00%	22.00	0.00%	22.00	0.00%	25.00	0.00%	25.00	0.00%
2	ADELCHI	2.50	50.00%	3.00	0.00%	3.50	0.00%	4.00	0.00%	4.50	0.00%
3	APEXT	17.00	0.00%	17.00	0.00%	21.00	0.00%	25.00	0.00%	30.00	0.00%
4	LEGACY	0.50	0.00%	0.50	0.00%	1.00	0.00%	-	0.00%	-	0.00%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited, Note: US $1 = BDT 78.00

Table: 13. Total Assets of the selected Tannery Companies

SL	Name of Company	Total Assets (BDT)				
		2007	2008	2009	2010	2011
1	BATA	2,251,961	2,499,136	2,722,964	3,056,957	3,546,727
	Growth %		10.98%	8.96%	12.27%	16.02%
2	ADELCHI	2,794,310	3,248,435	3,487,132	4,677,044	7,180,041
	Growth %		16.25%	7.35%	34.12%	53.52%
3	APEXT	1,457,962	1,568,380	1,520,981	1,090,410	1,613,300
	Growth %		7.57%	-3.02%	-28.31%	47.95%
4	LEGACY	163,437	173,955	270,808	286,215	330,041
	Growth %		6.44%	55.68%	5.69%	15.31%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited
** Figures are in Thousands BDT*
Note: US $1 = BDT 78.00

Table: 14. Market / Book (M/B) Ratio of the selected Tannery Companies

SL	Name of Company	Market / Book (M/B) Ratio									
		2007		2008		2009		2010		2011	
		Market Share Price	Book Value	Market Share Price	Book Value	Market Share Price	Book Value	Market Share Price	Book Value	Market Share Price	Book Value
1	BATA	223.73	75.96	320.62	89.76	528.23	103.47	652.80	122.12	598.69	144.15
	Times	2.95		3.57		5.11		5.35		4.15	
2	ADELCHI	2,170.03	48.51	2,384.30	50.04	2,583.53	65.34	411.28	64.54	295.57	180.26
	Times	44.73		47.65		39.54		6.37		1.64	
3	APEXT	298.34	430.05	1,331.33	429.26	1,225.29	489.79	1,482.97	562.52	1,395.56	601.07
	Times	0.69		3.10		2.50		2.64		2.32	
4	LEGACY	6.40	7.10	19.10	7.33	33.80	19.40	61.13	19.53	44.99	20.73
	Times	0.90		2.60		1.74		3.13		2.17	

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited
Website of Dhaka Stock Exchange and Stock Bangladesh
Note: US $1 = BDT 78.00

Table: 15. Earning Per Share (EPS) of the selected Tannery Companies

SL	Name of Company	Earning Per Share (EPS)				
		2007	2008	2009	2010	2011
1	BATA	23.75	32.85	32.85	39.66	42.34
	Growth %		38.32%	0.00%	20.73%	6.76%
2	ADECHI	225.81	168.74	188.03	20.29	23.20
	Growth %		-25.27%	11.43%	-89.21%	14.34%
3	APEXT	17.56	16.21	98.18	93.74	63.55
	Growth %		-7.69%	505.68%	-4.52%	-32.21%
4	LEGACY	0.51	0.52	0.73	1.14	1.38
	Growth %		1.96%	40.38%	56.16%	21.05%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited
Website of Dhaka Stock Exchange and Stock Bangladesh
Note: US $1 = BDT 78.00

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Table: 16. Return On Equity (ROE) of the selected Tannery Companies

SL	Name of Company	Return On Equity				
		2007	2008	2009	2010	2011
1	BATA	39.49%	46.23%	40.11%	41.13%	37.19%
	Growth %		17.07%	-13.25%	2.56%	-9.58%
2	ADELCHI	46.54%	33.72%	28.78%	31.43%	12.87%
	Growth %		-27.55%	-14.66%	9.23%	-59.05%
3	APEXT	4.08%	3.78%	19.67%	16.66%	10.57%
	Growth %		-7.54%	420.92%	-15.27%	-36.56%
4	LEGACY	7.18%	7.16%	3.75%	5.82%	7.30%
	Growth %		-0.28%	-47.66%	55.33%	25.54%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited

Table: 17. Return On Assets (ROA) of the selected Tannery Companies

SL	Name of Company	ROA				
		2007	2008	2009	2010	2011
1	BATA	14.43%	17.98%	16.50%	17.79%	16.37%
	Growth %		24.66%	-8.22%	7.82%	-8.00%
2	ADELCHI	6.06%	5.84%	6.07%	4.88%	3.64%
	Growth %		-3.58%	3.81%	-19.56%	-25.50%
3	APEXT	1.84%	1.57%	9.65%	13.10%	6.00%
	Growth %		-14.21%	512.89%	35.74%	-54.18%
4	LEGACY	2.26%	2.19%	1.95%	2.88%	3.33%
	Growth %		-3.27%	-11.05%	48.00%	15.52%

Source: Compiled from different issues of Annual Report of Bata Shoe Company (Bangladesh) Limited, Apex Adelchi Footwear Limited, Apex Tannery Limited, Legacy Footwear Limited

Table: 18. Trend equation and r^2 of Total Asset Turnover Ratio

Name of Company	Yc = a + bx	r^2
BATA	1.7802 + 0.022 x	0.533
ADELCHI	1.7799 - 0.075 x	0.541
APEXT	1.6458 - 0.424 x	0.066
LEGACY	0.4052 - 0.0149 x	0.146

Table: 19. Trend equation and r^2 of Inventory Turnover Ratio

Name of Company	Yc = a + bx	r^2
BATA	1.9191 + 2.0077 x	0.698
ADELCHI	4.3609 - 0.3189 x	0.603
APEXT	2.0382 + 0.1775 x	0.639
LEGACY	1.8788 - 0.1287 x	0.647

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Table: 20. Trend equation and r^2 of Total Sales (Thousands)

Name of Company	Yc = a + bx	r^2
BATA	3295525.95 + 638269.47 x	0.983
ADELCHI	2997883.97 + 1151905.44 x	0.894
APEXT	2465092.99 – 89626.40 x	0.088
LEGACY	258.46 + 1334.85 x	0.862

Table: 21. Trend equation and r^2 of Export Sales (Thousands)

Name of Company	Yc = a + bx	r^2
BATA	80461.20 - 425.80 x	0.004
ADELCHI	3278715.30 + 720948.50 x	0.822
APEXT	2465093.50 - 89626.50 x	0.088
LEGACY	46153.90 + 13348.30 x	0.862

Table: 22. Trend equation and r^2 of Cost Of Goods Sold (Thousands)

Name of Company	Yc = a + bx	r^2
BATA	2209189.68 + 385333.47 x	0.960
ADELCHI	2728933.72 + 939456.49 x	0.855
APEXT	2348580.36 – 115041.07 x	0.135
LEGACY	34662.75 + 9737.01 x	0.830

Table: 23. Trend equation and r^2 of Operating Expense (Thousands)

Name of Company	Yc = a + bx	r^2
BATA	642692.26 + 175679.56 x	0.963
ADELCHI	(35805.33) + 128406.75 x	0.899
APEXT	80737.60 + 1684.20 x	0.045
LEGACY	1750.84 + 1324.80 x	0.980

Table: 24. Trend equation and r^2 of Net Income (Thousands)

Name of Company	Yc = a + bx	r^2
BATA	1871343171.90 + 314735206.70 x	0.972
ADELCHI	1217371.10 + 1020007.05 x	0.834
APEXT	1500394.80 -16729.40 x	0.016
LEGACY	111250.90 + 44546.78 x	0.932

Table: 25. Trend equation and r^2 of Retained Earnings (Thousands)

Name of Company	Yc = a + bx	r^2
BATA	(25447.32) + 56505.04 x	0.833
ADELCHI	130479.63 + 14670.52 x	0.944
APEXT	(7890.00) + 20650.40 x	0.351
LEGACY	(5465.12) + 2987.38 x	0.680

Table: 26. Trend equation and r^2 of Cash Dividend

Name of Company	Yc = a + bx	r^2
BATA	22.90 + 0.30 x	0.083
ADELCHI	2.00 + 0.50 x	1.000
APEXT	11.80 + 3.40 x	0.932
LEGACY	0.85 - 0.15 x	0.321

Table: 27. Trend equation and r^2 of Assets to Equity Ratio

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Name of Company	Yc = a + bx	r^2
BATA	0.35 + 0.02 x	0.974
ADELCHI	0.10 + 0.03 x	0.584
APEXT	0.36 + 0.06 x	0.421
LEGACY	(52.24) + 17.55 x	0.541

Table: 28. Trend equation and r^2 of Fixed Assets (Thousands)

Name of Company	Yc = a + bx	r^2
BATA	306142.00 + 81990.85 x	0.954
ADELCHI	(187241.79) + 305604.05 x	0.551
APEXT	151376.40 + 5975.40 x	0.143
LEGACY	90596.51 + 15088.62 x	0.477

Table: 29. Trend equation and r^2 of Total Assets (Thousands)

Name of Company	Yc = a + bx	r^2
BATA	1871343171.90 + 314735206.70 x	0.972
ADELCHI	1217371.10 + 1020007.05 x	0.834
APEXT	1500394.80 -16729.40 x	0.016
LEGACY	111250.90 + 44546.78 x	0.932

Table: 30. Trend equation and r^2 of Earning Per Share (EPS)

Name of Company	Yc = a + bx	r^2
BATA	21.09 + 4.40 x	0.926
ADELCHI	291.31 - 55.37 x	0.820
APEXT	6.85 + 17.03 x	0.460
LEGACY	0.15 + 0.24 x	0.923

Table: 31. Trend equation and r^2 of Price Earning (P/E) Ratio

Name of Company	Yc = a + bx	R^2
BATA	8.33 + 1.61 x	0.567
ADELCHI	10.38 + 1.24 x	0.255
APEXT	46.79 - 5.64 x	0.092
LEGACY	(49.83) + 16.90 x	0.923

Table: 32. Trend equation and r^2 of Return on Equity (ROE)

Name of Company	Yc = a + bx	r^2
BATA	0.4374 – 0.0097 x	0.210
ADELCHI	0.0674 – 0.0696 x	0.833
APEXT	0.0259 + 0.0259 x	0.323
LEGACY	0.0938 - 0.0039 x	0.101

Table: 33. Trend equation and r^2 of Return on Assets (ROA)

Name of Company	Yc = a + bx	r^2
BATA	0.1550 + 0.0037 x	0.169
ADELCHI	0.0704 - 0.0058 x	0.767
APEXT	0.0246 + 0.0199 x	0.395
LEGACY	0.0167 + 0.0028 x	0.619

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An Analytical Study on Spice Market in Dhaka City Using Consumer Preference

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ABSTRACT

The spice market is growing since consumers are showing reluctance to go for traditional systems of processing spices. Use of processed spices is increasing both in rural and urban areas. Consumers' growing awareness about hygienic spices and busy urban life has led to rise in branded spices consumption. The country's processed spice market is heating up as big business houses battle to win shares in the booming market. This is growing by around 15 percent a year. A leading conglomerate ACME is set to enter the market by the end of the year and another business group, PRAN, has already made its debut. SQUARE, ACI and BD Foods are other major players in the spice market. The broader objective of this report is to study the Spice market in Dhaka city through consumer preference. The specific objectives are to analyze the spice providers in the spice market of Bangladesh, to analyze the satisfaction level of Customers for using powder spice, to identify the problem of spice industry in marketing the product and find out some solutions to overcome these types of problem. This research is descriptive in nature. It has been tried to use both the primary and secondary sources of collecting information and some are to make the report presentable with as less abstraction as possible. The several approaches that are used for primary data collection are questionnaire survey, direct observation on consumer, opinion of different level of retail shop. For questionnaire survey, it has used non-probability convenience sampling. The total sample size for the study is 100 and all of the respondents are home users in Shyamoli area. From the survey it is found that maximum numbers of consumers keep Radhuni spice as their first choice. Pure spice comes after that. Radhuni is the market leader because of its quality and distribution intensity. The perceived quality of Radhuni is better than other brands. The packaging of spice is satisfactory. But the satisfaction related to the availability of the spice in the overall market is poor. The case of advertisement is also the same. So it is found that out of 4P`s (Marketing Mix) product strategy is good. But pricing, promotion and distribution strategy of spice are not satisfactory enough. In this modern and fast life when women want to save time and enjoy tasty, easier and hygienic spices, Spice provider make the best alternative for the consumers.

Keywords: Spice, Market, Consumer, Preference

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INTRODUCTION

The spice market is growing since consumers are showing reluctance to go for traditional systems of processing spices. Use of processed spices is increasing both in rural and urban areas, Consumers' growing awareness about hygienic spices and busy urban life has led to rise in branded spices consumption. The country's processed spices market is heating up as big business houses battle to win shares in the booming mark. This is growing by around 15 percent a year. A leading conglomerate ACME is set to enter the market by year-end and another business group, PRAN, has already made its debut. SQUARE, ACI and BD Foods are other major players in spice market.

SPICES AND ITS HISTORY

Spices are the aromatic parts of tropical plants traditionally used to flavor food, or the dried seeds or fruit of temperate plants used in the same way. Some of the substances we call spices come from the bark or roots of certain plants, but the majority are berries, seeds, or dried fruits. A spice is a dried seed, fruit, root, bark, leaf, or vegetative substance used in nutritionally insignificant quantities as a food additive for the purpose of flavor, color, or as a preservative that kills harmful bacteria or prevents their growth.

SPICES CAN BE GROUPED AS

- Dried fruits or seeds, such as fennel, mustard, and black pepper.
- Arils, such as mace.
- Barks, such as cinnamon and cassia.
- Dried buds, such as cloves.
- Stigmas, such as saffron.
- Roots and rhizomes, such as turmeric, ginger and galingale.

Herbs, such as bay, basil, and thyme are not, strictly speaking, spices, although they have similar uses in flavoring food. The same can be said of vegetables such as onions and garlic.
The earliest evidence of the use of spice by man was around 50,000 B.C. The spice trade developed throughout the Middle East in around 2000 BC with cinnamon and pepper. The Egyptians used herbs for embalming and their need for exotic herbs helped stimulate world trade. In fact, the word spice comes from the same root as *species*, meaning kinds of goods. By 1000 BC China and India had a medical system based upon herbs. Early uses were connected with magic, medicine, religion, tradition and preservation.

SPICES IN BANGLADESH

The country's processed spices market is heating up as big business houses battle to win shares in the booming market. This is growing by around 15 percent a year. A leading conglomerate ACME is set to enter the market by year-end and another business group, PRAN has already made its debut. SQUARE, ACI and BD Foods are other major players. The market is growing since consumers are showing reluctance to go for traditional systems of processing spices. Use of processed spices is increasing both in rural and urban areas, Consumers' growing awareness about hygienic spices and busy urban life has led to rise in branded spices consumption. The ACME will be the second entrant in the processed spices businesses in the year 2008. Earlier ACI Foods hit the market with its 'ACI Pure' brand.
Some companies also export spices to the Middle East, Europe and North America. A section of rural people are also showing interest in spices. Square, which entered the market

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with its Radhuni brand in 2001 now controls about 70 percent of about Tk 150 -160 crore branded spices market, according to industry insiders. It's really a big market because our (Bangladeshi people) food habit is spices based. But the market is still dominated by non-branded ones. According to stakeholders, the yearly market of both brand and non-brand spices is around Tk 4,000 crore with 2, 52,000 metric tons of spices are consumed every year. The domination of non-branded spices, in this situation new entrants company will fall. Any new entrant will help expand the overall branded spices market through campaign among consumers, the entry of more companies will help expand the market. A market without competition is always bad. Entry of new players will improve quality as well as the size of the market.

OBJECTIVES OF THE STUDY

- To analyze the overview of spice market and assess consumer preference in the perspective of Dhaka city, Bangladesh.
- To analyze the existing market condition of spice market in Bangladesh observing Dhaka City.
- To identify problems for marketing spices in Dhaka City.
- To evaluate the satisfaction level of consumers.
- To recommend some suggestions for the improvement of spice market in Bangladesh observing Dhaka City.

METHODOLOGY

This report is a descriptive type of research in nature and it administered by collecting both primary and secondary data. It has tried to use both the primary and secondary sources of collecting information and some are to make the report presentable with as less abstraction as possible.

Sources of data

In order to attain the objective of the study in this report all-necessary information are prepared by collecting both primary and secondary sources of data. These are:

Primary sources

Primary data collected directly to solve the customer problem through face-to-face interaction. It is the systematic collection of information directly from respondents using survey. Several sources of data collection are use to make this report. The source of data are-

- Questionnaire survey.
- Consumer study.
- Retailer's study.

Secondary sources

Some secondary data collected to make the report more concrete. These data has been collected from different books, newspapers, web site, Annual report of different spice providers and combination of all these sources; I am able to write this report.

- Books.
- Journals.
- Company annual reports.
- Newspapers.
- Internet (Websites)

Questionnaire Design

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This questionnaire developed with the combination of open-ended, close-ended and multiple-choice questions. For close ended questionnaire, multiple-choice question was used where the respondent will choose one option among several possible alternatives and for close-ended questions are used to write down the respondent any opinion, complain and feelings. The questionnaire was mainly use to find out the satisfaction level of package spice. Besides, I attempt to find out the main reason of use branded spice, monthly consumption of spice, attractive media of advertisement, favorite TV and Radio Channel, favorite advertisement of spice industry.

Sampling plan

The population of my survey is all of customer of powder spice. The first step of the sampling design is to define the study population. Due to time restriction and other limitations, the survey mainly focused on households. The sample element of this research is the individual consumer of powder spice of Dhaka City, Bangladesh. There is no concrete list or number of subscriber of the selected area of the population. In the data collection procedures, it is used non-probability convenience sampling.

Sample Size and Data collection

The total sample size for the study is 100 and all of respondent are home users. The questionnaire survey was administered in different household based on socio economic class A, B and C. Data collection area was Welcome super shop, Family world super shop, Shyamoli BDR shop, Shyamoli Kacha Bazar and so forth. Statistical tools and computer software are used for analysis and reporting.

JUSTIFICATION OF THE STUDY

One may expect alternative organisational structures of different marketing systems to differ in their efficacy in achieving different goals of marketing policies. Yet many spices development projects in Bangladesh in the past have been accompanied by the establishment of non-government marketing organizations without any evaluation of whether these would be the appropriate types of marketing systems under all sets of circumstances. Spice marketing organisations have usually taken the form of large-scale enterprises, normally charged with the responsibility over the collection, processing and distribution of powder spice products. In some countries, the government spice marketing organisations are also expected to have responsibility over the distribution of production inputs, especially agriculture based.

The establishment of private marketing organizations to accompany various development projects in Bangladesh in the past has usually been regarded as the best means of ensuring that the interests of both the producers and the consumers will be safeguarded. However, economic theory suggests that it is not necessary for governments to intervene in the marketing systems as traders in order to achieve the objective of maximizing the welfare of both the producers and the consumers. The theory basically suggests that governments should provide an economic environment that enhances the operation of the marketing systems to survive the industry. The basic premise is that the welfare of all the market participants will be ensured automatically if the marketing systems are operating efficiently. This line of argument draws on the classical laissez-faire policy which prescribes that the role of governments in marketing should be to provide those services and the infrastructure that the private sector cannot reasonably be expected to provide adequately and efficiently.

Spice marketing in many countries over the world is characterized by the existence of both formal (i.e. official or government) and informal (i.e. private or non-government) marketing

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systems. The informal marketing systems are sometimes referred to as traditional or parallel marketing systems in contemporary literature in order to emphasize the fact that these are the marketing systems in which governments do not substantially intervene, either directly through trading or indirectly through regulation.

Informal marketing systems may be either individually or cooperatively owned, but their most important feature is that they are non-government marketing organizations. Many countries in Asia have granted monopoly and/or monopsony power to government marketing organizations for certain key commodities, e.g. in the case of spice marketing in major urban areas in Srilanka and China. However, such moves have not, in practice, completely eliminated private domestic trade in such key commodities. In those cases where both government and non-government marketing organizations exist in the same country, the non-government marketing organisations may occupy different sections of the marketing chain relative to the government marketing organisations. However, there are some cases where the private marketing organisations sometimes operate in direct and often illegal competition with the government marketing organisations in the same area, in the same section or level of the marketing channel, and at the same time.

LITERATURE REVIEW OF THE STUDY

Falgun A. Kaneriya and Pacheri Bari[13] found that The Indian spice market has shown remarkable growth in spice and culinary herbs exports. Indian spices manufacturers are making substantial efforts to improve the quality of spices backed up by technological advancement in order to tap the international market. Advanced technologies such as carbon dioxide extraction, cryogrinding, encapsulation of spice oil is being undertaken to ensure high quality of spices and their derivatives. The spices market has not been severely affected by economic conditions. In fact, many categories of spices are considered recession-proof or counter-cyclical because the sales tend to rise in a sluggish economy. In a tardy economy, at-home consumption of food generally rises, with people trying to save money by avoiding costlier trips to restaurants, and cutting down on the consumption of ready meals. Europe, and some Asian countries continue to be the global centers for the production and processing of spices and culinary herbs. Some countries lead in the production of specific spices, such as India for cloves, China for ginger, Vietnam for pepper, and Indonesia for nutmeg and cinnamon. In the culinary herbs market, India is among the leading producers and exporters of raw herbs to the US, and European Union. Spices and its derivative products are used in food preservation, food flavoring, aromatherapy, beverages, personal hygiene products, industrial chemicals, pharmaceuticals, and feeds.

Mr. Peter J Buzzanel and Fred Gray[12] wrote an article on The Spice Market in the United states- Recent Development and Prospects. They found that The United States is the world's largest importer of spice as well as a growing producer. The U S imports more than 40 separate spices and produces over one third of its annual spice needs. Rising domestic use of spices reflects growing Hispanic and Asian populations, a trend toward the use of spices to compensate for less salt and lower fat levels in foods, and heightened popularity of ethnic foods from Asia and Latin America.

Ms. Indira[11] had a study on 'Indian cardamom handicapped by poor productivity', argues that unstable area and poor productivity are the major drawbacks of Indian cardamom. She substantiates the observation with a comparative analysis of the productivity of the major cardamom producing countries, India and Guatemala Export trends points out the dismal

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performance of Indian cardamom during the last decade and highlights the urgency of immediate steps to regain the global market share.

Paul H. Freedman[15] studies in the article Out of the East: Spices and the Medieval Imagination but **Reviewed by** William C. Crossgrove in **The Rise and Fall of Spices** that an enormous historical literature treats the medieval spice trade and its pivotal role in stimulating western Europeans to undertake deep-water exploration and establish colonial enterprises. But this literature is concerned primarily with the supply side, with how to circumvent Muslim and Venetian middlemen. Freedman proposes instead to focus on the demand side, on "why spices were so popular in the first place, why they were sufficiently sought after for traders to bring them to Europe from what seemed the farthest corners of the world" (p. 2). And this is what he does, especially in the first three chapters. Chapters 4 through 6 provide details on how the spice trade worked in the middle ages, how lack of knowledge of and control over their sources whetted Europeans' desire to eliminate the middlemen, and how voices raised against conspicuous consumption of spices had little effect on their use.

We have studied some papers to prepare this report. We have viewed website, journal and previously made report and book regarding spice industry and market. The spice trade developed throughout the Middle East in around 2000 BC with cinnamon and pepper. The Egyptians used herbs for embalming and their need for exotic herbs helped stimulate world trade. In fact, the word spice comes from the same root as *species*, meaning kinds of goods. By 1000 BC China and India had a medical system based upon herbs.

MAJOR FINDINGS

1. In our country women are the main users of spice because cooking is mostly done by them. There are males as well who also cook in the kitchen but the percentage of the female as user of spice is much higher than male. Though mainly women are the majority of using spice, the purchasing decision is taken by the male because in the maximum cases they are the chief wage earner of a family and they go to the market for shopping. That is why the recent advertisement of spices tries to create brand awareness both to the wives and husbands, who decide to purchase spices. From data analysis, female**: 96**% and Male: **04**%.
2. The average education level of the actual users is up to HSC. The income groups among the consumers use different spices according to their capability. Numerically shown the below table,

Education Level	Consumer %
S S C	14
H S C	42
Graduation	22
Post Graduation	18
Others	04

3. Maximum consumers use the powder packet spice. Because it saves time, has good quality and easy to use. From data analysis, Bata Spice users 19.67%, Powder package spice users 59.84%, loose spice users 20.49%.
4. There is only one giant market player (Radhuni) for spice market. So it is easy for other brand to reach the consumer and create market demand and good position in the market. Quality plays a major role in preferring powder spice. Because advertisement of different companies try to persuade consumers by focusing their quality of the

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products. The users' major influencing factor of spice about the brand preference is scent and taste of the spice. It happens because the scent & taste make a dish delicious. It is observed from the table

Brand Name	Users %	Reason
Radhuni	67.48	Quality, Brand Image, Taste
Pran	5.56	Availability
Arkue	4.07	Advertisement, mixed spice
BD	14.63	Scent, Color, price
Fresh	0	unawareness
Pure	7	Availability, price

5. Usually consumers of spice prefer to purchase spice from the shops near the home and kacha bazaars any time of the month. So the distribution intensity is very important for spice market.
6. In case of packaging, most of the consumers prefer Polly pack and Plastic jar. Most of the consumers use mixed spice occasionally. For this reason the prices of mixed spice is higher than regular spices.

Pack Categories	Users %
Polly	48.72
Plastic Jar	36.75
Box	14.53

7. Particular product focus is low due to having a lot of product in a group. Lack of Price tag or price identification on packaging is a major problem for Spice Industry. Pricing strategy should be considered very carefully. Because market leader Radhuni's price is reasonable than other. And the Square's product, Radhuni's position is very high to the consumers. They assume that it provides the best quality with good pricing.
8. Maximum numbers of consumers are aware of Radhuni spice and seem more attracted to it than any spices. Then the second choice is PRAN spice. Then come to the ACI Pure spice. The consumers preferred Radhuni spice rather than any other spices. Radhuni is the market leader for its quality and distribution intensity. The perceived quality of Radhuni is better than ACI.
9. Advertisements of Spice Industry are not satisfactory and customers' demand oriented except Radhuni. Advertisements that are given broadcasting are not telecasting. And telecast advertisements are not even up to the mark. It should be in customers' program schedule so that target group of customers can be familiar with the product.
10. Most of the consumer preferred the TV program recipes and some preferred magazine and both of preferred by some consumer. The consumers like to watch TV drama and news average 2-3 hours a day. So these two times are the main focusing time to promote the product to the customer. Most of the consumers like to see the recipe program mainly in the Siddiqa Kabir's recipe which is telecast in NTV. The TV advertisements and sponsored cooking related programs would give more promotional benefits for spices.
11. Most of the target consumers like to read 'The Prothom Alo' because it is now the most well known newspaper in our country. So advertisement in The Prothom Alo would give us more coverage.
12. Most of the consumer can recall the advertisement of any spice which they saw mostly in the TV. Because the spice ads are mainly given at the time when they usually watch TV drama and news. They also saw other advertisements than TV ads. However the

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advertisement of spice is more popular to the consumers. Numerically found from data analysis, 59% users can recall ad. of spice and 41% cannot recall ad.

13. The customers are user of mainly the chili spice and their second choice is turmeric. In case of cooking, mainly these spices are needed. So the customers use these two items regularly. Most of the customers use chilli spice and turmeric spice mainly for quality and taste of the spice.
14. Mainly the customers know about spice from the TV media. They possess nearly medium position (neither agree nor disagree) with the TV advertisements of spice. The advertisements are not so attractive to most of the customers. From here it can be said that the advertisement of Spice in TV media should be improved.
15. Most of the customers last consumed brand is Radhuni spice. The main differences between Radhuni spice & other spices quality, advertisement and availability. Other spice users first knew about spice from TV media but they can't recall any advertisement of spice.
16. From the data analysis this table is shown and got that most of the consumers are service holder and income level Tk 15,000-20,000.

Occupation	Consumer %
Service	70
Business	30

Income level (Tk)	Consumer %
> 30,000	**23**
20,000-30,000	**26**
15,000-20,000	**30**
10,000-15,000	14
5000-10,000	7
<5000	0

17. The perceived satisfaction rate related to spice availability and packaging is satisfactory. But the satisfaction rate related to availability and advertisement is low. So it is found that in the overall situation out of 4P`s (Marketing Mix) product strategy is good. But pricing, promotion and distribution strategy of Spice is not satisfactory enough.

RECOMMENDATION

Following suggestions can be given after an analytical study on spice market in Dhaka city through consumer preference:

1. Lot of opportunities and scopes are available in this segment for reaching spice products to the traditional, untouched and non users of the community. Significant development of technology and improvement of the life standard have made the spice product popular in the market. So it is a great opportunity for Spice Industry.
2. As spice is a convenient product and in the spice market there is only one giant player that is (Radhuni) in the market so other brand has to be the best by defeating Radhuni with the effective product and pricing strategy. Sponsoring cooking program and looking books to attract the house wives is a nice and effective way for other brand promotion.
3. The rate of working ladies has been increasing significantly and life standard has been improving with the development of technology. So spice providers have to ensure providing information about the benefits of processed spice and its usage and quality.

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They have to make the working ladies and housewives believe that spice provider can understand completely about their desires, wants and demands.

4. Spice Providers should take steps specifying their target group of different locations and zones. They have to promote their brand and their product according to the standards of life style.
5. Variety of spices would be helpful and attract customers to use in their daily cooking life and make them sure that through this product they will make their family happy.
6. Spice Providers has improved awareness about the using of spices for family's daily hygienic foods. For this, effective promotional tools should be developed and administrated.
7. Manufacturer has to improve focus on particular product so that customers can be well known about the product.
8. Price tag and identification and date of manufacturing and expiry on packaging should be ensured.
9. Advertisements of spice should be customers' demand oriented and focused on clearly about the basic needs.
10. Pricing strategy should be considered very carefully as it is a convenience product. Because of its absence price of the same product varies a lot in different markets. It should take cost plus pricing strategy.
11. Producers should keep and develop their distribution network according to market size and demand. Strong distribution network can help to reach the product to the consumers effectively and efficiently.
12. There should be more telecast advertisements in an efficient way. It should be in the customers' program schedule either the starting or at the ending or in the interval of drama, Bangle movies and cooking program. So that target group of customers can be familiar with the product.

CONCLUSION

The blessings of science have given us the light to enlighten the society and it contributes to make our daily life easy in all sectors. Because of consumers' growing awareness of hygienic, spices and busy urban life has led to rise in branded spices consumption. Thus spice which is a very essential and test enhancing item for preparing food has changed its traditional form into a more scientific and hygienic powder form to make the cooking easier and tasty. It not only increases the taste of foods but also enhances the art of cooking and brings a pleasant moment for housewives. The spice market is growing since consumers are showing reluctance to go for traditional systems of processed spices. So we should accept it positively to our daily life to get the opportunity to make our life easy and hygienic.

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APPENDIX I

CHARTS, AND FIGURES

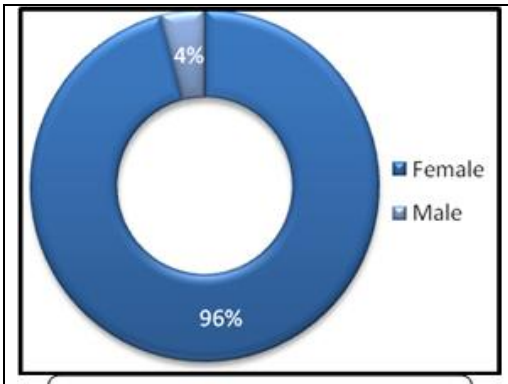

Figure - 1 : Gender identification

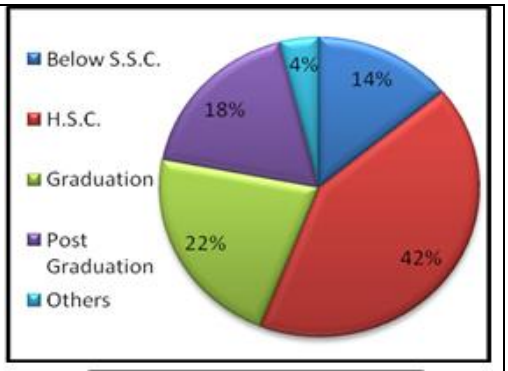

Figure - 2: Education level

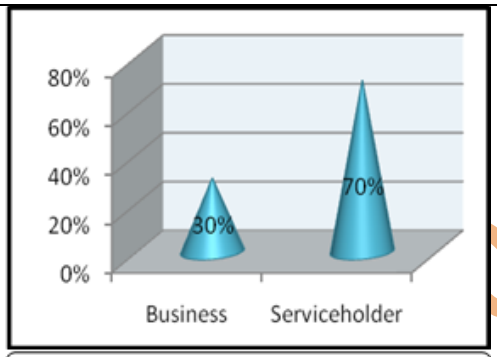

Figure - 3: Occupation of consumer

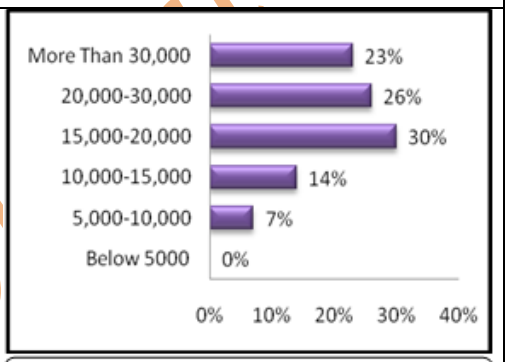

Figure - 4: Income level of consumer

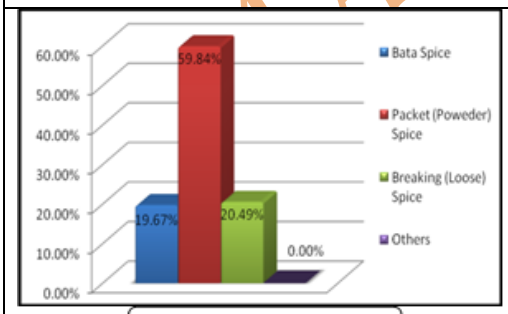

Figure - 5: Using types of spice

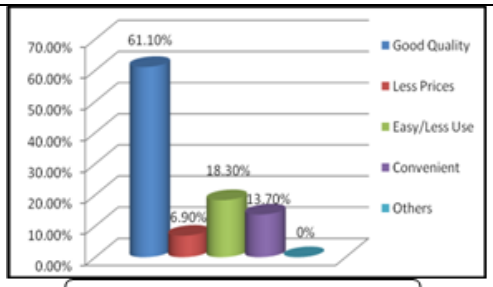

Figure - 6: Reason for using powder

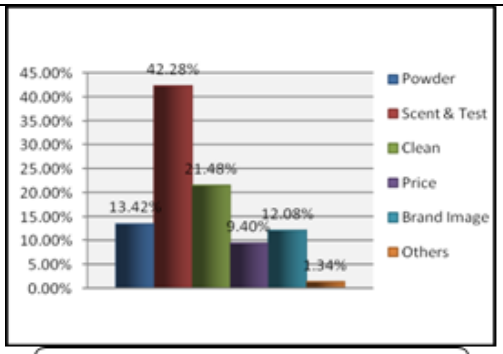

Figure - 7: Reason for preferring spices

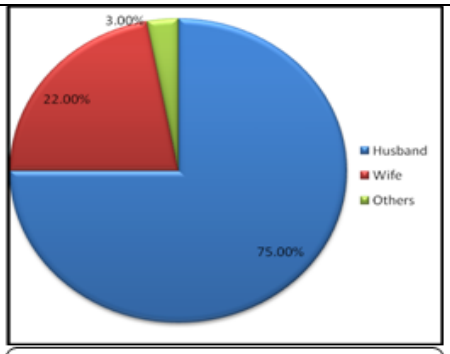

Figure - 8: Decision maker regarding purchase of spices

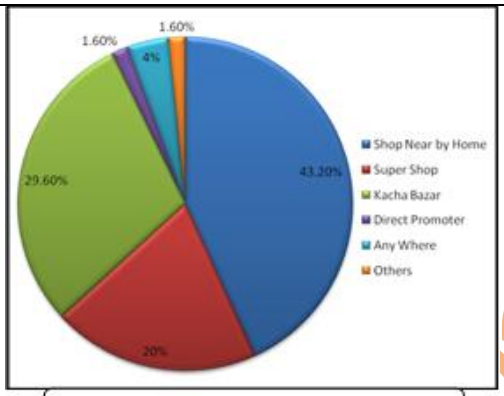

Figure - 9: Place preference regarding spice

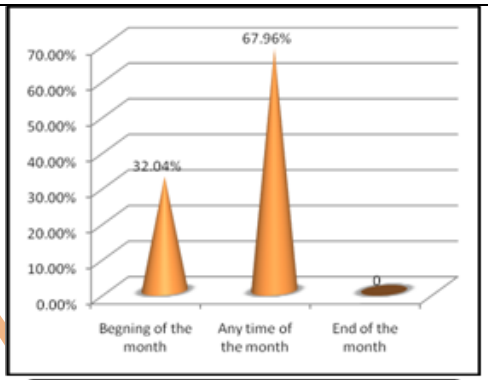

Figure - 10: Purchase timing of spice

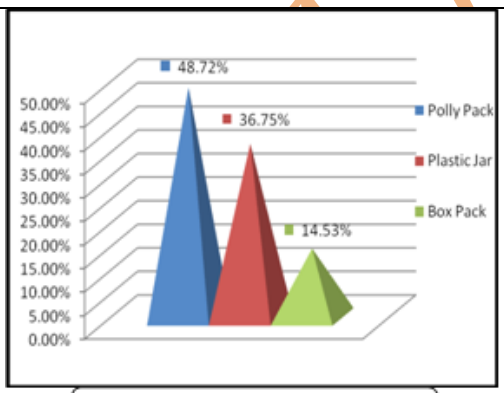

Figure - 11: Variation in packaging

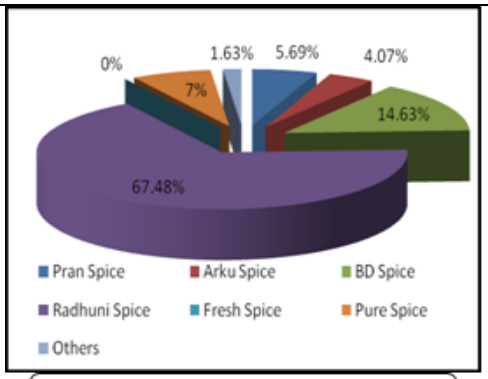

Figure - 12: Attractiveness of spice packaging

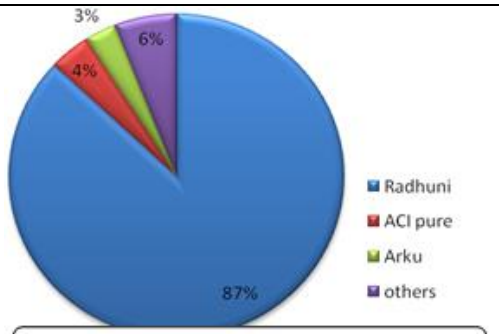

Figure - 13: Brand preference of spice

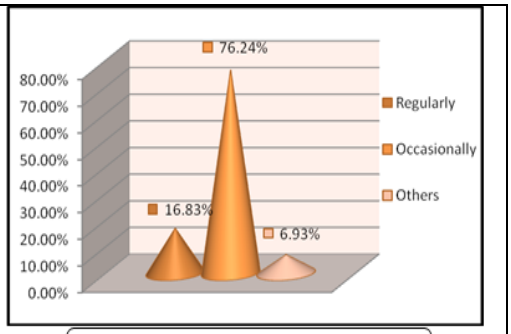

Figure - 14: Uses rate of mixed spice

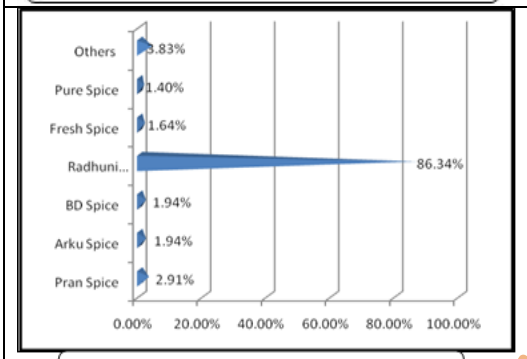

Figure - 15: Preferred Brand of consumer

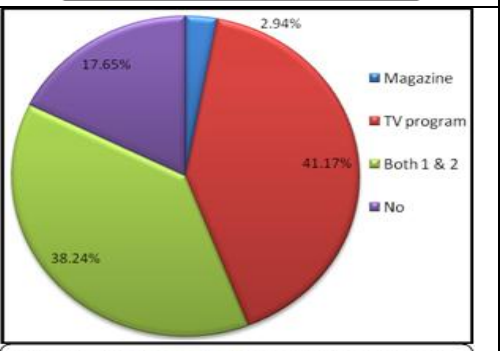

Figure - 16: Sources of information regarding recipes

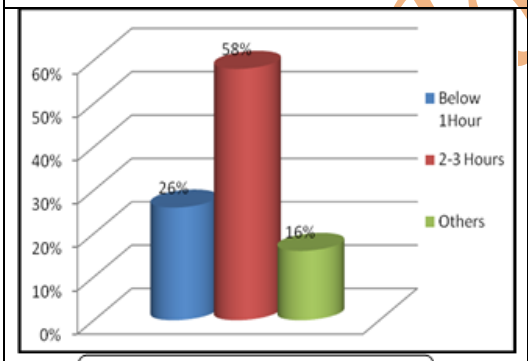

Figure - 17: Use of TV media

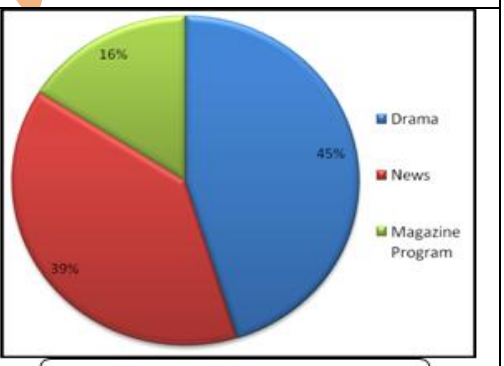

Figure - 18: Preferred programs

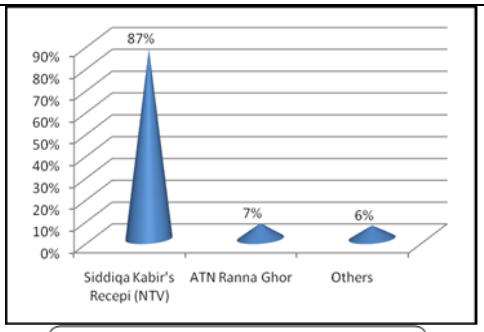

Figure - 19: Cooking programs preference in TV media

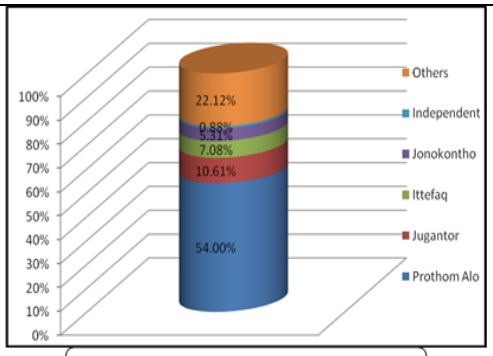

Figure - 20: Newspaper generally read

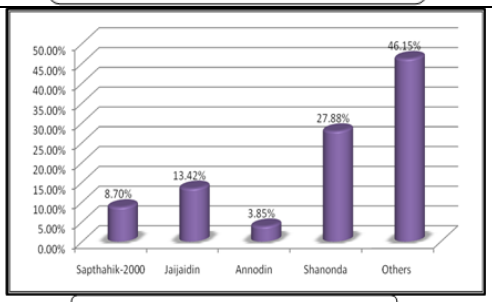

Figure - 21: Uses of magazine

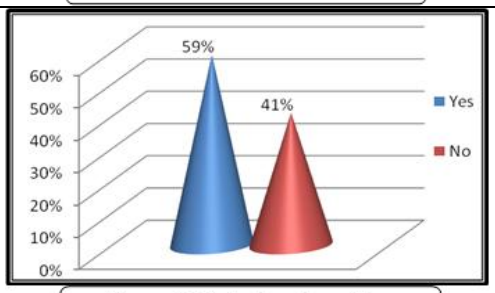

Figure - 22: Spice brand re-calling

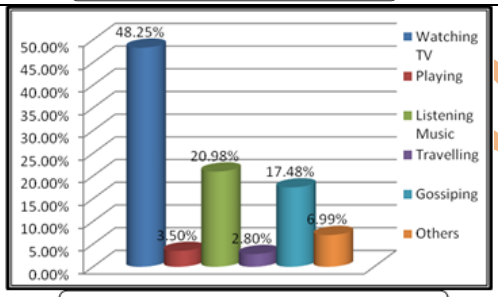

Figure - 23: Uses pattern of leisure time

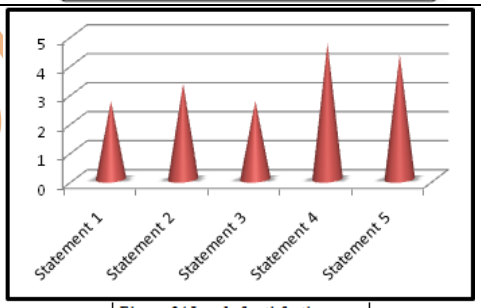

Figure-24 Level of satisfaction

A Comparative Performance Analysis of Conventional Banking and Islamic Banking in Bangladesh

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ABSTRACT

Commercial banks can be said to be the major contributor to the financial market mechanism in Bangladesh. Two forms of commercial banking systems are functioning here: conventional banking system and Islamic banking system. The two banking systems differentiate each other according to their compliance with different norms, values, beliefs and religious views while conducting business. Conventional banks follow borrowing and lending mechanisms while Islamic banks follow trading and investment mechanisms. Conventional banks provide and receive interest while receiving deposits and providing loans respectively. However, Islamic banks neither pay nor accept interest since it is prohibited in Islam. Rather they do business on profit and loss sharing concept. The purpose of this experiential study is to compare the performance of both the banking streams and to discover the superiority of any one or at least to find out which one is performing better than the other in which area(s). For the intended performance comparison, all the public limited conventional commercial banks and all the (except one) Islamic commercial banks have been included in the calculation of financial ratios for the years 2007 to 2011. The researcher has calculated six profitability ratios including Return on Equity (ROE), Return on Assets (ROA), Net Interest Margin (NIM), Cost to Income Ratio (COINR), Net Profit Margin (NPM) and Earning per Shares (EPS); four liquidity ratios containing Liquid Assets to Customer Deposits & Short Term Funds Ratio (LdCDSF), Loans to Deposits (LTD), Loans to Deposits & Borrowing (LTD&B) and Loans to Assets (LTA); four credit risk ratios comprising Capital to Assets Ratio, Common Equity to Assets Ratio (EQTA), Total Equity to Loan Ratio (EQL) and Non-Performing Loans to Loans (NPL). In addition to ratio calculation, the solvency of both the banking streams has also been calculated using a model called Bank-o-meter. The analysis concludes that conventional banks are dominating in profitability and liquidity whereas Islamic banks are leading in credit risk management and solvency maintenance.

Keywords: Conventional Banking, Islamic Banking, Performance Analysis, Financial Ratios, Bank-O-Meter, Profitability, Liquidity, Credit Risk, Solvency, Islamic Shariah

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1. INTRODUCTION

Ever expanding role of modern financial services has changed the way business is taking place in the market. Revolution in telecom sector duly utilized by financial sector has eliminated the physical presence of business and geographical location of markets to transact the business. Banking sector has become vital for development as well as smooth running of the economy of any nation of the planet. Till fourth quarter of 20th century, the whole financial sector worldwide was operating on interest basis which is contradicting with injunctions of Islam and a large number of world population (Muslims) were at unrest the prevailing system, which led to the development of interest free (Shariah compliant) banking. According to Islamic Shariah principles, fixed return on capital or the fixed return on transaction made against the capital is prohibited. Only such transactions or investments can be made which are in contracts of profit and loss sharing.

Bangladesh has a mixed banking system comprising nationalized, private and foreign commercial banks. Bangladesh bank is the central bank of the country and is in charge of monetary policies of Government and all commercial banks. After independence, the Government of Bangladesh initially nationalized the entire domestic banking system and proceeded to reorganize and rename the various banks. After that in nineteen eighties, privatization decision of commercial banks revolutionizes the overall banking system. At present, total banking system of Bangladesh consists of four state owned commercial banks (SOCBs), four specialized banks (SDBs), thirty private commercial banks (twenty three conventional banks and seven Islamic banks) and nine foreign banks (FCBs). Islamic banking system as a new paradigm started in Bangladesh in 1983 with the official start of "Ialami Bank Bangladesh Limited" which is the first Islamic bank in the South East Asia. After that, 6 more Islamic banks have been established in the country to reach the outcome of this welfare banking to the doorsteps of the people.

Several points make difference between Islamic and conventional banking system. These important points include prohibition of predetermined or fixed rate of return based transactions. Islamic banking system depends upon profit and loss sharing, owning and transaction of physical goods, participation in trading process, and also Islamic modes of finance are used for leasing and construction contracts. For the purpose of income generation, Islamic banks deal with assets management. The Islamic banks carefully manage involved risk in asset management with devotion to best exercise of corporate governance. It is clear that when bank is able to receive stream of Halal income, the depositors of banks ultimately receive the stable and Halal income. The interest is fixed amount that is charged over principal amount of loan or debt which is prohibited in Islamic Shariah. But gain on capital is appreciated by the Islamic Shariah. Islamic Shariah considers performance of capital when actual capital is rewarded. Islamic Shariah prohibit risk free return and trading, as in the Verse II: 275, of holy Quran that financial activities and transactions in the Islamic Shariah principles are real asset-backed, with an ability of value addition. Principles laid down in Islamic financial system are not only capable to provide a workable Islamic banking system, but also covers principles for all types of financial markets, instruments and other financial intermediaries.

Financial performance evaluation of banks is important for all stakeholders: owners, investors, debtors, creditors, depositors, bank managers, governments and regulators. Performance of banks gives directions to the stakeholders of decision making. For example, it gives decision to the debtor and the investor to make decision that either they should invest money in banks or invest somewhere else. Similarly, it flashes direction to bank managers whether to improve its deposit service or loan service or both to improve its

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finance. Regulatory agencies and government are also interested of financial performance for regulation purposes.

Rest of the study proceeds as follows: literature review is presented in section 2, followed by research objectives in section 3 and methodology in section 4. Section 5 discusses the measures of performance used in the analysis. Findings are presented in section 6 while section 7 concludes.

2. Literature Review

The performance of banks can be measured both by using qualitative and quantitative methods and techniques. Different variables and statistical techniques have been used for analysis by different studies and results are drawn from them aiming at performance evaluation. Banks performance can be measured in terms of profitability, growth, efficiency, liquidity, credit risk performance, and solvency. There is a general agreement in literature that Islamic banks are superior to conventional or mainstream banks in terms of their performance (Samad, 2004; Awan, 2009; Rosly and Abu Bakar, 2003; Safiullah, 2010). Keeping in view the importance of banking sector, different studies have been carried out for evaluating performance of banks.

The study conducted by Iqbal (2001) on the performance of conventional and Islamic banking used data for the years 1990-98 and numerous hypothesis and general perceptions about the practice of Islamic banking have been tested. The techniques used to evaluate performance of Islamic banks was both trend and ratio analysis. The performance of Islamic banks was compared with conventional banks that are the control group.

Islamic banking is interest free banking; making it compulsory to take active part in business profit and loss sharing. Islamic banks prefer to take less risk. Sheikh and Ali (2009), in their paper analysed the risk management procedures of Islamic banking by giving differential analysis of risk management based on unique characteristics. This paper has used ROE as a bench mark. A sample of two Islamic banks and two conventional banks was taken.

Studies have been carried out using different models for measuring the efficiency of banks. Percin and Ayan (2006) studied and evaluated the efficiency of commercial banks in Turkey using a Data Envelopment Analysis (DEA) and Malmquist Productivity Index (MPI) Methodologies. Akhtar (2010) also used Data Envelopment Analysis (DEA) and Malmquist Productivity Index (MPI) to see efficiency scores and productivity indices of banks in Saudi Arabia and concluded that technical inefficiency emerges from both scale as well as pure technical inefficiencies. The results on Malmquist Productivity Index (MPI) showed an improvement in average productivity of banks. The study also found that the major source of productivity gain was the efficiency change relative to technical change.

After studying performance of 43 Islamic and 33 conventional banks for the period 1990-2005 in 21 countries using Data Envelopment Analysis, Bader et, al., (2008), documented that there is no difference between the overall efficiency of conventional and Islamic banks which includes cost, revenue and profit efficiency. This study assessed the average and overtime efficiency of banks on their size, age, and region using static dynamic panels.

CLSA-stress test, CAMEL and Bank-o-meter are the models that are used in different studies conducted by various researchers to check the vulnerability and solvency of banks. Shar, et, al; (2010a) studied and evaluated the performance and efficiency of banking sector using Credit Leona's Securities Asia stress test (CLSA-stress test). This study enclosed the period of pre and post nationalization of state owned and commercial banks of Pakistan. By using adjusted and unadjusted stress test, it has been analysed that some banks are mediocre, under stress or sound

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in regard to the capital strength, assets quality, efficiency and liquidity. This study gauged solvency of individual banks. Shar, et, al; (2010) developed a model known as Bank-o-meter. Ability to predict which bank is defenceless to financial distress is of critical importance to investors, creditors, account holders and many other stakeholders. For this purpose a model was developed called 'Bank-o-mater'. To confirm the accuracy of Bank-o-meter, it was applied on individual banks during the period 1999-2002 for gauging the solvency of each bank in Pakistan and the results were compared with CAMEL and CLSA-stress test.

By applying CAMEL test, Jaffar and Manarvi (2011) examined and compared the performance of Islamic and conventional banks operating inside Pakistan during 2005 to 2009. A sample of 5 Islamic banks and 5 conventional banks were selected to measure and compare their performance. CAMEL test is a standard test to check the health of financial institutions and to determine the performance of banks. Different ratios were to evaluate each element of CAMEL. The study found that Islamic banks performed better in processing adequate capital and better liquidity position while conventional banks pioneered in management quality and earning ability. Asset quality for both streams of banking was almost the same; conventional banks recorded slightly smaller loan loss ratio showing improved loan recovery policy whereas, UNCOL ratio analysis showed a nominal better performance for Islamic banks.

The comparative study of performance of interest based and interest free banking in Bangladesh was done by Safiullah (2010). For this study, four conventional banks and four Islamic banks were selected. The time period for this study was 5 years from 2004 to 2008. Ratio analysis was conducted to gauge business developments, profitability, liquidity and solvency, commitment to economy and community, efficiency and productivity of both banking streams. Results showed that conventional banks were doing better than Islamic banks based on commitment to economy &community, productivity and efficiency. But in case of business development, profitability, liquidity and solvency, Islamic banks were performing better.

Ashraf and Rehman (2011) conducted a performance analysis of Islamic and conventional banking systems selecting two banks each from both the sectors for the years 2007-2010. They have used the profitability, liquidity, credit risk and asset activity ratios for the comparison. They have found out less effective performance of Islamic banks because of increased operating cost and inefficient management.

Profitability is another measure to determine the performance of banks. Javaid, Anwar and Zaman (2011) gave the analysis of the determinants of top 10 banks' profitability in Pakistan over the period 2004-2008 using the Pooled Ordinary Least Square (POLS) method to examine the impact of assets, loans, equity, and deposits on one of the major profitability indicators, return on assets (ROA). This study focused on international factors only. The empirical results showed that these variables have a strong influence on the profitability. However, the results depicted that higher total assets man not necessarily lead to higher profits due to diseconomies of scales. Study also found that higher loans contribute towards profitability but their impact is not significant. However, equity and Deposits have considerable impact on profitability.

Hanif, Tariq, Tahir and Momeneen (2012) also conducted a comparative performance analysis based on 22 conventional banks and 5 Islamic banks there in Pakistan. For the comparison, they have divided the key performance indicators into external and internal bank factors. Internal factor analysis includes the measure of performance in terms of profitability, liquidity, credit risk and solvency based on some financial ratios. They have found out the superiority of conventional banks in terms of profitability and liquidity and of Islamic banks in terms of credit risk management and solvency maintenance. And their

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customer survey results show, location and Shariah compliance of Islamic banks and the wide range of products and services of conventional banks satisfy the customers most.

The Islamic banking system is quite a new inauguration in the banking industry compare to the existing conventional banking system and it is showing really good performance, sometimes even better performance than the conventional banking system. Soit has become essential to conduct researches and discover how much is the future potentiality of this banking industry and is there any scope for converting the whole banking industry in Bangladesh into Islamic banking system or not. To do this, the past performances of both the banking industry must be analysed. So it is pertinent to study a comparative performance of well established (conventional banking) and newly introduced (Islamic banking) to uncover the strengths and weaknesses of each stream. This performance analysis has been done before in Bangladesh by other researchers selecting some banks from both the streams as sample. But the researcher felt the need for an unbiased and highest possible accurate comparison based on all the conventional and Islamic commercials banks listed in Dhaka Stock Exchange. Having that intention, the researcher has decided to conduct this research covering all 23 listed conventional banks and 6 out of 7 listed Islamic banks. The researcher has skipped the ICB Islamic Bank Ltd. in the analysis because of its extreme poor performance which affects the industry performance very badly and may lead to wrong decision about Islamic banking industry.

3. Purpose of the Study

The purpose of this study is to conduct comparative performance evaluation of Islamic & Conventional banking sectors in Bangladesh in order to document the results of each sector during period under review. This study will help in channeling resources in future including deposits, finances, investments and other banking services. In summary following are the major purposes of this study:

1. To find out the comparative profitability of the banking streams.
2. To find out the relative liquidity position of the banking sectors.
3. To find out the relative credit risk of the banking segments.
4. To find out the comparative solvency state of the banking streams.

4. Methodology of the Study

Interest based conventional banks and interest-free Islamic banks both are accounting for the economic development of Bangladesh. For conducting the study, all the twenty three conventional banks and six out of seven Islamic banks listed in Dhaka Stock Exchange have been selected. The study period is five years from 2007 to 2011. The study is based on the secondary data which are extracted from the financial statements of the banks presented in the annual reports. For analyzing the financial performance of the selected banks, financial ratios of each of the twenty nine banks have been calculated separately for all the mentioned years.

Review of related literatures show that performance measure is a complex process. So for better and sound comparison of the performance of Islamic and conventional banks, the researcher has used some measures of differences in performance in terms of profitability, liquidity, credit risk and solvency. Solvency of the banks has been measured by using "Bank-o-meter" model developed and tested by Shar, et, al; (2010).

5. Discussions on the Measures of Performance

Performance evaluation is a complicated process because assessment interaction is involved between the environment, internal operations and external activities. To measure the

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financial performance of banks, financial ratios are usually used. The financial ratios generally provide a better and broader understanding of the bank's financial situation. The banking ratios the researcher has used for the comparison of financial performance of Islamic and conventional banks are discussed below in brief:

5.1 Profitability Ratios

Profitability is one of the widely used performance indicator to measure the performance of any business because it is the ultimate test of managements operating effectiveness and success of the business. Like all other businesses, banks earn profit when their income is more than their expenses. Profitability ratios depict banks' overall performance and efficiency. Variables the researcher has used for gauging profitability are:

5.1.1 Return on Equity (ROE)

ROE approximates the return that the stockholders (owners) earn from investing their capital in bank. ROE is of great concern to the investors and shareholders. ROE measures the efficiency of banks in making profits from every unit of shareholders equity/bank capital [(Gul, Irshad and Zaman (2011)]. Potential investors look for ROE before investing in a bank so it is important for a bank to have a higher ROE. Higher the ROE, more efficient the bank's performance is. If the ROE of a bank is relatively low compared with other banks, it will tend to decrease the bank's access to new capital needed to expand and maintain a competitive position in the market. A low ROE may limit a bank's growth because regulations require that assets be (at a maximum) a certain number of times equity capital.

Return on Equity (ROE) = Net Income after Taxes/Total Equity Capital

5.1.2 Return on Assets (ROA)

ROA is primarily an indicator of managerial efficiency. It measures the ability of management to utilize the real and financial resources of the bank to generate return. ROA has been used in a lot of studies to measure the performance of banks. (Samad, 2004). [see, Ben Naceur (2003) and Alkassim (2005) as cited by Javed, et. al; (2011)].

Return on Assets (ROA) = Net Income after Taxes/Total Assets

5.1.3 Net Interest Margin (NIM)

NIM measures how large a spread between interest revenues and interest costs management has been able to achieve by close control over earning assets and pursuit of the cheapest sources of funding. Higher the NIM, more efficient the bank's performance is.

Net Interest Margin (NIM) = Interest Income from Loans and Security Investments - Interest Expense on Deposits and on other Debt Issued/Total Earning Assets

5.1.4 Cost to Income Ratio (COINR)

COINR assesses the bank's efficiency in producing income. According to Tripe (…..) Cost to Income Ratio is defined as non interest costs excluding bad debts and doubtful expenses, divided by total of interest income and non-interest income. COINR depicts the income generated per taka cost incurred. Lower the COINR, better the bank's performance.

Cost to Income Ratio (COINR) = Total Cost/Total Income

5.1.5 Net Profit Margin (NPM)

NPM is the percentage of revenue remaining after all operating expenses, interest, taxes and preferred stock dividends (but not common stock dividends) have been deducted from a bank's total revenue. NPM reminds that banks can increase their earnings and returns to their stockholders by successfully controlling expenses and maximizing revenues. Stockholders look at this ratio closely because it shows how good a bank is at converting revenue into profits available for them.

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Net Profit Margin (NPM) = Net Income after Taxes + Extra Ordinary Income or Expense/Total Operating Revenue.

5.1.6 Earning per Shares (EPS)

EPS represents the portion of a bank's earnings, net of taxes and preferred stock dividends which is allocated to each share of common stock outstanding. It is very important to the stockholders because it tells them how much net income the bank earned for each common stock they own.

Earning per Shares (EPS) = Net Income after Taxes and Preferred Stock Dividends/Common Equity Shares Outstanding

5.2 Liquidity Ratios

Liquidity ratios measure the short-term ability of a bank to pay its maturing obligations and to meet unexpected needs for cash. Liquidity tells the capability of a bank to convert its assets into cash at the face value and meet the demands of customers, borrowers and depositors at the time they need it. Maintaining liquidity in all circumstances is one of the major challenges that banks face. Liquidity is a prime parameter of banking risk. Faced with liquidity risk, a bank may be forced to borrow emergency funds at excessive cost to cover its immediate cash needs, reducing its earnings. In order to assess liquidity, following ratios were used:

5.2.1 Liquid Assets to Customer Deposits and Short Term Funds Ratio (LdCDSF)

According to Samad (2004), LdCDSF is a deposit run off ratio. This ratio shows the percentage of deposit and short term funds that are available to meet the sudden withdrawals. The higher the LdCDSF, the more liquid the bank is.

Liquid Assets to Customer Deposits and Short Term Funds Ratio (LdCDSF) = Cash in Hand and in Banks/Total Deposits & Borrowings from Others

5.2.2 Loans to Deposits (LTD)

This ratio measures how much of the deposited money, the bank has used to provide as a loan. It is also used to calculate a bank's ability to cover withdrawals made by its customers. If the ratio is too high, it means that banks might not have enough liquidity to meet any unforeseen fund requirement. It the ratio is too low, banks may not be earning as much as they could be.

Loans to Deposits (LTD) = Total Loans and Advances/Total Deposits

5.2.3 Loans to Deposits & Borrowing (LTD&B)

This ratio depicts the percentage of total deposits and borrowings that are entrenched into non-liquid asset. The higher the LTD&B, the higher is the chance bank face liquidity risk.

Loans to Deposits & Borrowing (LTD&B) = Total Loans and Advances/Total Deposits and Borrowings

5.2.4 Loans to Assets (LTA)

LTA shows the percentage of loans that are rooted in assets. The net loans to asset ratio measure the net loans outstanding as a percentage of total assets. The higher this ratio, the lower is the bank's liquidity and the bank is tied up in loans. The higher the ratio, the more risky a bank is to higher defaults.

Loans to Assets (LTA) = Total Loans and Advances/Total Assets

5.3 Credit Risk Ratios

Credit risk is defined by State bank of Pakistan in Risk Management Guidelines for commercial Banks and DFIs as "Credit risk is the risk arises from the potential that an obligor is either unwilling to perform on an obligation or its ability to perform such obligation impaired resulting in economic loss to the bank." Hence, credit risk is the risk of

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loss that arises from a borrower's or counterparty's inability to meet its obligations. For any financial institution, measuring and managing credit risk is very important.

5.3.1 Capital to Assets Ratio

Capital to Assets is the ratio of bank capital and reserves to total assets. Capital and reserves include funds contributed by owners, retained earnings, general and special reserves, provisions and valuation adjustments. Total assets include all non financial and financial assets. This ratio measures whether a bank has sufficient capital to support its assets. As a general rule, the higher the ratio, the more sound the bank. A bank with high Capital to Assets Ratio is protected against operating losses more than a bank with a lower ratio, although it depends on the relative risk of loss at each bank.

Capital to Assets Ratio = Total Shareholders' Equity/Total Assets

5.3.2 Common Equity to Assets Ratio (EQTA)

This ratio shows common equity as a percentage of total assets. EQTA provides percentage protection required to meet the expense by banks to its investment in asset. It shows the overall shock captivating capacity of a bank for possible expected or unpredicted loan asset losses. The superior the ratio of EQTA, the larger is the capacity for a bank to soak up the assets losses (Samad, 2004).

Common Equity to Assets Ratio (EQTA) = Common Equity/Total Assets

5.3.3 Total Equity to Loan Ratio (EQL)

EQL shows the total equity capital as a percentage of total net loans. EQL provides equity as a cushion to take in or adjust loan losses faced by a bank. The higher the ratio of EQL, the higher is the capacity for a bank in absorbing loan losses.

Total Equity to Loan Ratio (EQL) = Total Equity/Total Loan

5.3.4 Non-Performing Loans to Loans (NPL)

This ratio indicates the percentage of nonperforming loans or doubtful loans to total loans that a bank has on its books. This ratio also assesses the quality of assets or loans of the bank. The lower the ratio of NPL, the better is the asset/credit performance of the bank.

Non-Performing Loans to Loans (NPL) = Non-Performing Loan/Total Loan

5.4 Measuring Solvency

The ability to predict weakness and reliability of banks in financial distress is of vital importance to central banks, creditors and to equity investors. When a bank goes insolvent, creditors often lose portion of principal and interest payments, while equity can potentially lose all of their investment (Shar, et, al; 2010). To measure solvency of banks, the researcher has used a model known as Bank-o-meter developed by Shar, et, al (2010). Bank-o meter has a quality that it uses minimum parameters and gives more accurate results on solvency of banks. Shar, Shah and Jamali, 2010; used following parameters in this model:

S = 1.5*CA+1.2*EA +3.5*CAR+0.6*NPL+0.3*CI+04*LA

Where 'S' stands for solvency

CA stands for Capital to Assets Ratio

EA stands for Equity to Assets Ratio

CAR stands for Capital Adequacy Ratio

NPL stands for Non-Performing Loans to Total Loans Ratio

CI stands for Cost to Income Ratio

LA stands for Loan to Assets Ratio

$50 < S < 70$

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All banks having 'S' value greater than 70 are solvent and termed as super sound banks, while those banks having 'S' value below 50 are not solvent. The area between 50 and 70 is defined as gray area because of the susceptibility to error classification (Altman, 1968 as cited by Shar, et, al; 2010).

6. Empirical Results and Analysis

Results of financial analysis are presented in Table 1 covering four core areas of profitability, liquidity, credit risk and solvency through simple sectorial averages for both streams of banking.

Table 1: Financial Performance of Islamic Vs Conventional Banking

Performance Measures	Conventional Banks	Islamic Banks	Comments
Profitability			
Net Profit After Taxation (million)	1480.34	1573.87	Conventional Banking is doing better in profitability
Return on Equity (ROE)	20.09%	17.36%	
Return on Assets (ROA)	1.54%	1.39%	
Net Interest Margin (NIM)	4.99%	3.34%	
Cost to Income Ratio (COINR)	20.01%	14.90%	
Net Profit Margin (NPM)	21.55%	28.28%	
Earning per Shares (EPS)	30.27	21.36	
Liquidity			
Liquid Assets to Customer Deposits & Short Term Funds Ratio (LdCDSF)	12.36%	14.45%	Conventional Banking is dominating in liquidity management
Loans to Deposits (LTD)	84.36%	90.98%	
Loans to Deposits & Borrowing (LTD&B)	81.33%	86.96%	
Loans to Assets (LTA)	68.55%	74.85%	
Credit Risk			
Capital to Assets Ratio	7.93%	7.74%	Islamic Banking is doing better in credit risk management
Common Equity to Assets Ratio (EQTA)	3.24%	4.58%	
Total Equity to Loan Ratio (EQL)	11.54%	9.93%	
Non-Performing Loans to Loans (NPL)	4.47%	2.45%	
Solvency	89.54	93.63	Islamic Banking is dominating in solvency management

The above table resulting from the calculations presents that Net Profit After Taxation in case of Islamic banks (1573.87 million) is higher than that of conventional banks (1480.34 million). This indicates more profit earning capability of Islamic banks compared to conventional banks. The ROE, ROA, NIM, COINR, NPM and EPS are the financial measures that depict the profitability of Islamic banks and conventional banks. ROE of conventional banking sector is 20.09% and of Islamic banking sector is 17.36% which depicts that conventional banks are more efficient in generating profits from every unit of shareholders equity capital. ROA of conventional banking sectors is 1.54% which is a little higher than Islamic banking sector (1.39%)and this indicates that assets of conventional banks are capable of yielding somewhat more return than of Islamic banks. The spread between interest revenues and interest costs as measured by NIM (Net Interest Margin) of conventional banks is 4.99% and of Islamic banks is 3.34%. This indicates, the managements of conventional banks are more efficient in increasing the interest income from loans and

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other security investments and in decreasing interest expense on deposits and on other debts by pursuing cheaper sources of funding. It also indicates, conventional banks also have more control over the earnings assets. COINR (Cost to Income Ratio) of conventional banks is 20.01% which is higher than Islamic banks having COINR of 14.90%. Lower COINR of Islamic banks indicates that, Islamic banks are performing better than conventional banks because they are more efficient in generating income per Taka cost incurred, as compared to conventional banks. NPM (Net Profit Margin) shows the superiority of Islamic banking sector again because this sector seems more efficient in converting its revenues into profits available for the stockholders by successfully controlling expenses. According to EPS (Earning per Shares), again conventional banking sector is leading, because this sector can ensure 30.27 Taka per share of common stock to the stockholders whereas Islamic banking sector can ensure 21.36 Taka per share of common stock. Overall the researcher can say, though Islamic banking stream is having more efficiency in earning profits and converting more of the revenues into profits by controlling expenses, but in all other profitability measures, conventional banking sector is prominent. Hence in profitability, conventional banking stream is performing better in comparison to Islamic banking stream.

Four different indicators (LdCDSF, LTD,LTD&B, LTA) are used to measure the liquidity risk of portfolios of Islamic and conventional banking. LdCDSF (Liquid Assets to Customer Deposits and Short Term Funds Ratio) shows that Islamic banking sector is more liquid as compared to conventional banking sector as this ratio is higher for Islamic banking (14.45%) than that of conventional banking (12.36%). This shows that Islamic banks reserved more liquid assets to meet unexpected and sudden withdrawals as compared to conventional banks. LTD (Loans to Deposits) ratio shows that Islamic banking stream has used more of the collected deposits to provide as loans which might have ensured higher earnings for this banking stream but from the liquidity perspective, Islamic banking sector is lagging behind conventional banking sector. From this perspective, conventional banking sector is showing more ability to cover withdrawals made by customers and to meet any unforeseen fund requirement. LTD&B (Loans to Deposits and Borrowing Ratio) of Islamic banking sector is 86.96% while that of conventional banking sector is 81.33%. Higher LTD&B of Islamic banking sector shows that Islamic banks face more liquidity risk than conventional banking sector providing more of the deposits and borrowed funds as loans. LTA (Loans to Assets Ratio) of Islamic banking sector is 74.85% while LTA of conventional banking sector is 68.55%. Higher ratio of Islamic banking sector shows that this sector is tied up in loans and has lower liquidity as compared to conventional banks. So, conventional banks are more liquid as compared to Islamic banks. Overall, conventional banking stream is dominating in liquidity management.

Credit risk of both banking sector is depicted by Capital to Assets Ratio, EQTA, EQL and NPL. It depicts from Table-2 that Capital to Assets Ratio of conventional banking (7.93%) and of Islamic banking (7.74%) is quite closer. This indicates two banking streams have almost equal protection against operating losses having sufficient capital to support their assets. However, conventional banking stream is proving somewhat more strength in this case. EQTA (Common Equity to Assets Ratio) of Islamic banking sector is 4.58% while EQTA of conventional banking sector is 3.24% providing evidence that Islamic banks have more capacity of absorbing asset losses as compared to conventional banks. This ratio also shows that Islamic banks have more capacity to absorb potential expected and unexpected loan asset losses as compared to conventional banks. EQL (Total Quality to Loan Ratio) of conventional banks (11.54%) is high as compared to EQL of Islamic banks (9.93%) which depicts that conventional banking is more proficient in absorbing loan losses as compared to Islamic banking sector. NPL (Non-Performing Loans to Loans) of

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Islamic banking sector (2.45%) is lower than conventional banking sector (4.47%). This clearly shows that the quality of assets or loans of Islamic banks is better than conventional banks. Credit risk performance of Islamic banking sector is better than credit risk performance of conventional banking sector. Overall better performance of Islamic banking in credit risk management is depicted in this study.

To gauge the solvency of each banking sector, the researcher has used Bank-o-meter developed by Shar, et, al; (2010).According to the model the analysis shows, both conventional and Islamic banking streams are solvent and can be termed as super sound banks as both are having 'S' value greater than 70. However, Islamic banking sector is quite more sound and solvent having solvency of 93.63 as compared to conventional banking sector having solvency of 89.54.

In this study the researcher has not only traced out which banking medium is performing ahead of other but the researcher has also traced out that which of the banks in each banking stream is performing better than all others in terms of profitability, liquidity, credit risk and solvency. Following Table 2 gives a glance of the leading banks in terms of profitability, liquidity, credit risk and solvency.

Table 2: Leading Banks in Each Banking Stream

Performance Measures	Leading Conventional Banks	Leading Islamic Banks
Profitability		
Net Profit After Taxation (million)	National Bank Ltd.	Islami Bank BD Ltd.
Return on Equity (ROE)	AB Bank Ltd.	SJIBL Ltd.
Return on Assets (ROA)	National Bank Ltd.	EXIM Bank Ltd.
Net Interest Margin (NIM)	Brac Bank Ltd.	SJIBL Ltd.
Cost to Income Ratio (COINR)	Southeast Bank Ltd.	SJIBL Ltd.
Net Profit Margin (NPM)	National Bank Ltd.	SJIBL Ltd.
Earning per Shares (EPS)	UCBL	Islami Bank BD Ltd.
Liquidity		
Liquid Assets to Customer Deposits & Short Term Funds Ratio (LdCDSF)	DBBL	Islami Bank BD Ltd.
Loans to Deposits (LTD)	Rupali Bank Ltd.	Social Islami Bank Ltd.
Loans to Deposits & Borrowing (LTD&B)	Uttara Bank Ltd.	Social Islami Bank Ltd.
Loans to Assets (LTA)	Rupali Bank Ltd.	Social Islami Bank Ltd.
Credit Risk		
Capital to Assets Ratio	Eastern Bank Ltd.	EXIM Bank Ltd.
Common Equity to Assets Ratio (EQTA)	Standard Bank Ltd.	Social Islami Bank Ltd.
Total Equity to Loan Ratio (EQL)	Eastern Bank Ltd.	Social Islami Bank Ltd.
Non-Performing Loans to Loans (NPL)	Prime Bank Ltd.	SJIBL Ltd.
Solvency	Standard Bank Ltd.	SJIBL Ltd.

In case of profitability, National Bank Ltd. has been proved to be the best performer from conventional banking sector. From Islamic banking sector, SJIBL Ltd. has been demonstrated to be the top player. In liquidity management, Rupali Bank Ltd. has shown best performance from conventional banking stream. Same happens with Social Islami Bank Ltd. from Islamic banking stream. From credit risk management perspective, Eastern Bank Ltd. from conventional banking sector and Social Islami Bank Ltd. from Islamic banking sector are evidencing their best performances. In managing solvency, Standard Bank Ltd.

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from conventional banking stream and SJIBL Ltd. from Islamic banking stream have performed best. Overall Performance of SJIBL Ltd.is at top followed by Social Islami Bank Ltd. and Islami Bank BD Ltd. from Islamic banking stream while in case of conventional banking, competition is quite high since there is variability in top performers according to different performance measures. However, National Bank Ltd. is at top followed by Rupali Bank Ltd., Eastern Bank Ltd. and Standard Bank Ltd. from conventional banking stream. Out of fourteen financial ratios, SJIBL Ltd. topped in six followed by Social Islami Bank Ltd. topped in five while Islami Bank BD Ltd., EXIM Bank Ltd., Rupali Bank Ltd., Eastern Bank Ltd. and Standard Bank Ltd. topped twice during the study period.

The researcher's intention was to do the analysis covering all twenty three conventional banks and all seven Islamic banks listed under Dhaka Stock Exchange, but after accumulating the financial statement ratios and calculating the selected ratios, the researcher has discovered quite bad performance of one Islamic bank named ICB Islamic Bank Ltd. This bank's average Net Profit After Taxation for the years 2007 to 2011 was -6686.40. Other profitability ratios were also negative like ROA was -5.72%, NPM was -230.42%. LdCDSF was very poor comparing other Islamic banks. It also provided more than 100% loan out of the deposited money according to LTD ratio. Capital to Assets Ratio and EQL were also negative. For all these reasons, the researcher became bound to skip ICB Islamic Bank Ltd from the consideration for the sake of the entire analysis. Otherwise, the researcher might have come up with wrongly negatively biased findings in case of Islamic banking industry which could lead the researcher to wrong decisions about the comparative performance of two streams of banking.

7. Conclusion

Banks and financial institutions are contributing in the economic development of Bangladesh through exploring different lucrative economic segments in the form of investment and lending. Banks of our country play roles from conventional and Islamic perspective. Islamic banks are operating based on Islamic Shariah and principles that do not support interest based banking whereas conventional banks are in favor of interest and conventional rules and regulations. So, a comparative performance analysis of interest-based conventional banks and interest-free Islamic banks of Bangladesh is very rational and time demanded study. From that ground, this extensive data based study has been undertaken to make out the comparisons.

For the comparative performance study, the researcher constructed two portfolios of two streams of banking to perform the analysis and document the findings in the form of sectorial averages. On the basis of results, it can be concluded that in terms of profitability and liquidity management, conventional banking stream is performing better than Islamic banking. However under credit risk management and solvency maintenance, performance of Islamic banking is better than conventional banking sector, which shows the strength and soundness of this banking stream. Sharia compliance is the only difference of Islamic banking with conventional banking. It is the unique selling proposition for this industry and any weakness on this front can jeopardize its very existence. Islamic banking is comparatively a new established stream of banking in Bangladesh which captured little market share as compared to conventional banking. This could be the reason for lesser profitability and liquidity of this stream of banking, however sound credit risk management and solvency indicates the strength and future potential of this newly established business sector in Bangladesh. Islamic banking sector should now try to concentrate more on the welfare being of the poor and dispute people rather than only on profit oriented sectorial development. Though conventional banks are now fully converting or opening windows of Islamic banking but their

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main focus should be given on both social and economic development of Bangladesh. Alongside conventional banks should come forward in order to enhance rural financial market rather than only urban development through their superior performance in different arena. Finally, the result of the research should be interpreted with great caution since previous researches differ substantially across different estimation procedures. The researcher has used only some selected profitability, liquidity and credit risk ratios to analyze the performance of the banks. So, further study should use all the measures of profitability, liquidity and credit risk for a complete understanding of the financial performance of the conventional banking and Islamic banking systems of Bangladesh.

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Using Internet for Product Marketing

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ABSTRACT

In this paper we discuss product marketing using the Internet, particularly the use of Internet for product promotion and new consumer processes. Internet advertising, virtual store-fronts, and virtual communities are explained with examples and our views. We then present new consumer processes on the Internet and show how they enhance the fulfillment of the consumer purchase needs and also support interactive marketing. We discuss the challenges of measuring Web advertisements and close the chapter with a summary of our views on Internet and marketing.

Keywords: Product marketing; Product promotion; Web Advertisements; Virtual Communities; Increasing Returns; Consumer Processes; Interactive Marketing.

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1. INTRODUCTION

Marketing, whether to consumers or to business, has a well defined purpose in most organizations. That purpose is to create exchanges that satisfy consumer and organizational goals (AMA, 1985). As marketing strategy is constructed to address a particular product/market, two tasks must be performed by elements of the marketing mix: the communications task and the operating task (Park et al., 1987). The communication task can be thought of as "information" primarily conveyed through promotion, price, the product label and package. This information is used to position the product in the market and to inform and/or persuade present or potential customers. The operating task "is to remove barriers to transactions or exchanges so that customers who perceive the product as being capable of satisfying their needs and preferences can engage in a transaction with minimum effort" (Park et al., 1987). These barriers center around a) product accessibility, b) product availability, c) owning/using the product, d) correct perception and recall, and e) differential utility. The operating task has traditionally been implemented so that the transaction is enhanced by having the right product or service at the right place at the right time with the right service and the customer can take possession. A marketer, to execute these communication and operating tasks, uses one or more channels. In this paper, we examine the emergence of a new channel, the Internet, particularly its impact on consumer marketing and how it affects some of the marketing tasks. We discuss two important aspects of consumer marketing that the Internet is capable of transforming; (1) the communication process, and (2) the consumer need fulfillment through new consumer processes. We start with explaining the marketing functions and the effect of Internet on these functions. In section 3, we discuss the Internet communication model and advertising on the Internet. This is followed by a discussion on the use of virtual store-front and virtual communities as

marketing channels. Section 6 introduces the new consumer processes on the Internet and the implications for marketing. We close the chapter by looking at the challenges of measuring the marketing efforts on the Internet.

2. The Marketing Functions and the Internet

The domain of marketing will, with rare exceptions, include at a minimum the following functions. These are the activities that need to take place to create exchanges that satisfy consumer and organizational goals. While there is no universal agreement on the exact designation of these activities, there is general agreement on the following as necessary (Churchill et al., 1995).

1. ***buying*** - ensuring that enough units of product are available to meet consumer demand
2. ***selling*** - using advertising, personal selling, and sales promotion to match goods and services to customer needs
3. ***transporting*** - moving goods from point of production to a location convenient to customers
4. ***storing*** - warehousing products until needed for sale
5. ***standardization and grading*** - ensuring that products meet established quality- and quantity-control standards or size, weight, and other variables
6. ***financing*** - providing credit for customers
7. ***risk taking*** - assuming the uncertainties that result from developing and distributing goods and services customers may purchase in the future
8. ***information gathering*** - collecting information about customers, competitors, and resellers to use in making marketing decisions.

The ultimate objective of all marketing efforts is to persuade the consumer to accept a product or service as the solution to her needs and then allow the consumer to take possession of the product or service.

The interactions between the marketer and the consumer thus involve the flow of products and information as shown by the simplified representation in Figure 1.

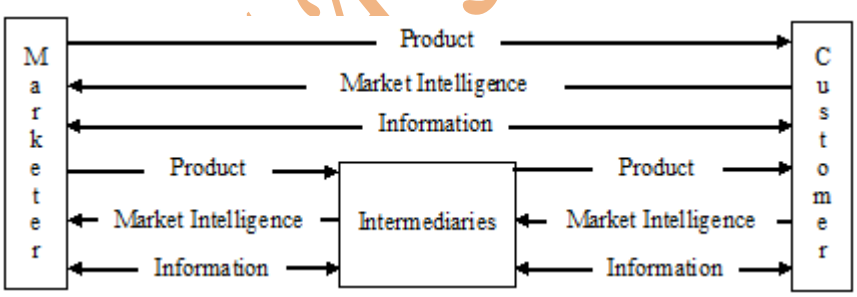

Figure 1 Information and Product Flow between Marketer and Consumer

3. Internet Advertising

As the Internet was transformed in the 80s from a "research only network" to allow commercial activities, organizations realized that the sheer number of users connected to the network and the very low cost of reaching out to them, made the Internet an attractive medium for advertising. Almost all media planners now consider the Internet as a viable

advertising vehicle and almost all marketers agree. (IAB, 1997) cites the following reasons for considering the Internet in the media plan of the marketer.

- Television audiences are migrating to the Internet and this trend is expected to continue. A Forrester Research Inc. (http://www.forrester.com) report in the summer of 1997 says that about 78% of PC users took time from television viewing to spend on computers.
- The Internet is the fastest growing medium in history. The Web reached 50 million users in just four years, while it took the television 13 years and the radio 38 years to reach this milestone.
- On-line advertisement revenues are expected to reach $9 billion by 2002.
- The users of the Internet have the demographics which are a marketer's dream – young, well-educated, and earning high incomes.
- The current younger generation, which is familiar with Internet technology, will be the future consumer generation, making the Internet an excellent communication medium.

Though most organizations are using the Web for advertising their products and services, the following categories are seen more on the Web.

- **Digital products:** Products that can be delivered over the network like software packages and information packets.
- **Products where search costs can be reduced:** Products such as cars and services such as travel, which require more information, search prior to purchase.
- **Products with assured quality:** Books and music CDs
- **Well known branded products:** Visa credit cards
- **Products where time and location are crucial:** Flowers

Surveys show that the profile of the Internet users is shifting towards that of average consumers. When this happens, the following product categories have the best potential for advertising over the Internet in the future.

- Products where all related services can be brought together: Real estate, travel, hotel, medical and restaurant services
- Products which can be customized by the consumer: Apparel, financial services, and software

3.1 The Internet Communication Model.

The Internet can be viewed as a many-to-many communication medium, unlike the one-to-many model of the traditional mass media, as illustrated in Figure 2 (Hoffman et al., 1996). The model suggests that the primary relationship is between the consumer and the media on the one hand, and between the firm and the media on the other. Hence, the media becomes a major factor in determining what the consumer sees and how she sees it. In this model, the media does not just transmit the message from the sender to the receiver, but allows the environments to be created and experienced (Steuer, 1992). Thus new forms of interactions emerge between the consumer and the Internet, and between the firm and the Internet. From the consumer's perspective, we can describe some of the interactions as below:

1. Consumer can gather information about products and services, communicate with other consumers and firms for related products and services, and sometimes complete transactions. As the Internet session is a self selected environment of the consumer, the promotion message will be more effective. Internet is also capable of providing an experiential environment to the consumer through virtual reality interfaces thus allowing the consumer to experience some of the features of products before making the purchase decision.

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2. Consumer can provide feedback content about the product, to the firm and to other consumers. A positive feedback becomes a good promotion for the marketer. A shrewd marketer can even exploit a negative feedback by solving the consumer's problem and showing the commitment of the organization to satisfying consumer needs.
3. Consumer can add "collective content" to the medium through discussion forums like the virtual communities. These discussion forums are rich sources of feedback about the organization and its products and should be closely monitored by the marketer to identify the needs of the consumers.

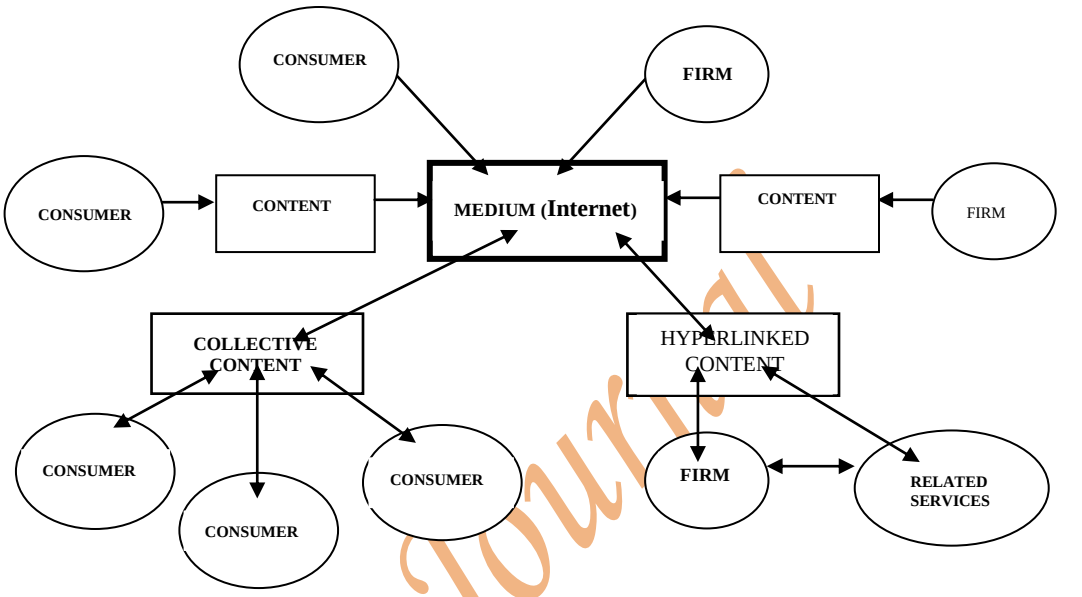

Figure 2. Internet Communication Model

3.2 Media Characteristics of The Internet

The Internet is unlike any other traditional media. The two-way communication capability and the information processing power of the connected computers make the Internet an ideal medium for marketers to reach out and build interactive relationships with consumers on a global basis. The key characteristics of the Internet that aid in this process of relationship building are:

1. ***Interactivity:*** Internet is an interactive medium. The interface can be customized to continuously reflect the interests of the consumer and the appropriate choices offered by the firm. A consumer who sees an Internet advertisement can interact with the advertiser, seek more information, test the product and proceed to place order for the product. The consumer can also have access to the feedback of other consumers who had used the product, to make better informed decisions. Interactivity helps the marketer to establish a dialogue with each consumer.
2. ***Rich and realistic experience:*** Internet is a rich medium capable of text, image, audio and video content which can make the interaction experience of the consumer more engaging. With virtual reality, now beginning to be available on the Internet, experiential content like 3-dimensional viewing is also possible thus providing the most realistic experience to the consumer. Bandwidth is still a problem and currently limits this rich experience.

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3. ***Aggregation of services:*** The Internet allows aggregation of different services, coordinated and hyper linked by the seller of the product or service. This gives the consumer access to all the necessary information to make a better purchase decision.
4. ***Global access:*** The Internet gives the firm a potentially global consumer base. But this feature could be a mixed blessing, as claims made on the Internet could now be challenged by virtually anyone from any corner of the globe. Marketers also need to be sensitive to the cultural and social characteristics of the target audience when trying to exploit the global accessibility of the Internet.
5. ***Targetability:*** Internet advertisers can focus on users from specific nations or geographical regions, computer platforms, as well as by time of day. Internet audience can be targeted based on demographics, psychographics (life-style characteristics) and technology demographics.
6. ***Tracking:*** Marketers can track how users interact with their brands and learn what is of interest to their customers.
7. ***Deliverability and Flexibility:*** Internet advertisement is delivered in real time 24 hours a day, and 7 days a week. Advertisements over the Internet can be launched, updated or canceled immediately. An advertiser can follow the progress of the response and make appropriate changes to the campaign.

3.3 Types Of Internet Advertisements

An Internet advertisement is typically placed on the Web page of a Web site. (Novak et al., 1996) classify Web advertisement sites into three major categories: (1) sponsored content site such as Hotwired and ZD Net, (2) sponsored search agents and directories such as Yahoo!, Excite and InfoSeek, and (3) entry portal sites such as Netscape and Microsoft. In 1996, the above three categories had 55%, 36% and 19% respectively of the total Web advertisements (Jupiter, 1996). From the advertiser's point of view, AOL is currently a very attractive Web site because of its very high membership. Increasingly, the Web pages of search engines and entry portals are becoming very popular Web advertisement spots. Web advertisements can be grouped into two major classes – the pull advertisements and the push advertisements which are discussed in the following sections.

4. Virtual Store-front

A store is not just a place for commerce, but an appealing social environment experienced by the consumer. People like to walk by brilliantly lit display windows with artfully decorated product displays. Usually there is no immediate pressure to purchase, but just the curiosity to see and know about products. But recent surveys show that consumers may be spending less time visiting shops to learn about products. Catalogs are convenient, but in most cases, it may require a visit to the actual stores. This is where a virtual store-front come in. With a few clicks of the mouse, an Internet user can visit a virtual store, find all that she needs about any product and make the purchase online.

5. Virtual Communities

A virtual community (or on-line community) is a group of Internet users who share a specific area of interest. The members of virtual communities exchange freely their ideas, experience and other information related to the specific topics of interest discussed in the community. The usual modes of exchange are discussion forums on specific topics, bulletin boards and chats. In the discussion forums, the community organizer provides the topics for

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discussion and members comment on the topic or ask questions to be answered by other members. Thus, members of the virtual community for cancer patients discuss and exchange their feelings, and how they are coping with the tragic disease. Members of the on-line bookstore Amazon.com ("Amazon.com Community") post their own reviews and are even offered prizes for the best book recommendation.

5.1 Building Virtual Communities

Communities are built around what people care about. For example, Seniornet is built around the needs of senior citizens live a quality life. (Hagel et al., 1997) propose a four step process for building and nurturing virtual communities. Figure 6 presents the idea, but reflects our perception of it as a continuous process.

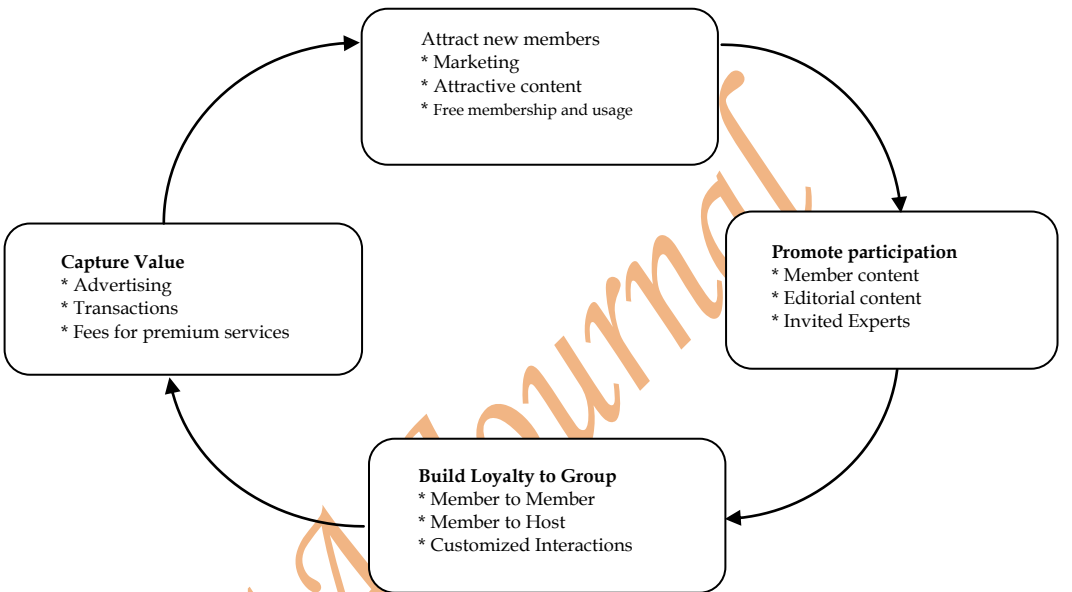

Figure 6. Building virtual communities

5.2 Benefits of virtual communities

Though virtual communities are set up to provide a forum for communication among consumers, the very nature of these communities offers excellent commercial opportunities to the sponsor as well as other vendors who choose to participate in these communities.

Some of the benefits to consumer members are:

1. Ability to identify and interact with other members of similar interests without constraints of time and space and reduced search costs;
2. Access to a broad range of information about a product or service, including information from competing vendors, and thus better purchase decisions;
3. Economic benefits like special price, customized offers and better service;
4. Being part of a powerful bargaining group that can influence important marketing decisions; and

The benefits to sponsor organization are:

1. Aggregation of consumers, leading to reduced search costs and better targeting of products and services;
2. Building a positive frame of mind, in the member, towards the sponsor through content and editorial surrounding.
3. Community loyalty of members, which can be exploited to sell a range of products and services;
4. Disintermediation possibility because of direct contact with consumers; and
5. Global reach at much lower costs.

The benefits to vendors who participate in the virtual community are:

1. Target group with well known demographics and interests;
2. Effective response rate to any promotion efforts;
3. Reduced search cost of target customers; and
4. Global reach at much lower costs.

5.3 Product promotion on virtual communities

Virtual communities present an excellent opportunity for marketers to exploit the "network externalities' effect. The key to promotion on the virtual community is the critical mass of members that can be reached. Marketers start by building a loyal constituency of consumers through advertisement on discussion forums, sponsorship of discussions, providing links to experts in specific areas for free consultation, and use of knowledge from other forums to honestly counsel community members. The well defined nature of the community then helps the product promoters to better target their messages.

Marketers may also open discussion forums to specifically attract new members with the profile of interest. For example, Toyota (http://www.toyota.com) sponsors a discussion forum on "Gardening" in its virtual community of car users. Through this forum, Toyota is probably hoping to attract members who are interested in gardening, and fit the profile suited to sell its "Family Vans". Related discussion forums are ways to increase the breadth of the discussion and thus attract members who may not be currently interested in the products, but may have the profile to be buyers in the future. The real benefits of the Internet will be exploited when marketers use the interactive capabilities of the new medium and build a personal community environment for the consumer member, understand each consumer as an individual in addressing promotional messages, provide all related services at a single point, and make the virtual community a truly worthwhile place for the consumer to visit. The Internet may have its greatest impact on the operating task of the marketing function and remove barriers to exchanges by fundamentally transforming the consumer need fulfillment process. In the following section, we will discuss how Internet changes these marketer-to-consumer relationships and its effects on interactive marketing.

6. Internet and New Consumer Processes

A consumer process is a collection of tasks or steps that a consumer goes through to achieve a goal, usually the satisfaction of a need. For example, the consumer process of buying a home may include visiting real estate agents, driving around neighborhood, obtaining a mortgage and homeowners insurance, and getting inspections. Most of the consumers, particularly those in a high involvement purchase, undergo a level of stress in this process as they engage in the tasks of information gathering, analysis, negotiations, purchase and

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post-puchase consumption or use. While undergoing the purchase process, these consumers typically experience the following needs (Champy, 1997).

1. ***Knowledge:*** Having access to specialized information and feedback about the product or service.
2. ***Interaction:*** Fulfilling the need to communicate with the provider of goods or services.
3. ***Networking:*** Connecting to and interacting with other consumers with similar consumption needs or experiences.
4. ***Sensory experiences:*** Using sensory input such as sight and sound to arrive at a purchase decision.
5. ***Ubiquity:*** Having all that the consumer needs at the time and place of consumer's convenience (rather than at the provider's convenience)
6. ***Aggregation:*** Bringing together a number of related and required services at a convenient location.
7. ***Customization:*** Tailoring products to consumer's needs rather than adjusting needs to available product ranges.

6.1 Internet Interface and Virtual Reality

To the consumer, the entire purchase and fulfillment process is an experience. Marketers can make it memorable for the consumer by providing a personal and realistic experience in which to undergo the process. Virtual reality is one of the important technologies that has the capability to provide this rich experience to the consumer. Virtual shops equipped with virtual reality can enable consumers to "walk through virtual shopping aisles, examine and use the virtual product, and talk to virtual salespeople". Virtual reality is currently available through the now widely accepted standard called VRML (Virtual Reality Markup Language). This standard is supported by both Netscape and Microsoft Internet browsers and provides 3-dimensional visualization on the Internet. More sensory capabilities are expected to be added in the future enabling the Internet to provide the full potential of virtual reality. For the marketer, virtual reality is useful to design more effective Internet promotion campaigns as the product features can be presented more realistically. Consumers can have a better feel for the product and experience the effects of the product features. Virtual reality can also be used to educate and possibly train a consumer about how to use a product in order to experience the full potential of the product. An educated and knowledgeable consumer will be in a better position to appreciate the product features and thus will have a positive experience when using the product. This will invariably lead to favorable feedback from the consumer for the product.

6.2 Internet and Interactive Marketing

Interactive marketing is defined as the "process of being able to deal with customers by creating individual relationship, managing market size of one and addressing each in terms of its stage of development" (Blattberg et al., 1991). It has always been the dream of marketers to be able to establish a dialogue with each consumer and position the organization to serve the needs of the consumer. For effective relationship building, marketers have looked to several methods of collecting feedback about consumers and their buying habits. Most of these approaches have been indirect, expensive and rarely available at the level of individual consumer. Now, the Internet interface is capable of providing the marketer with just that kind of information useful in addressing each consumer personally in a most effective and inexpensive way.

Understanding The Consumer

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The Internet provides various ways to collect information about consumers in order to know them better. Consumers frequently fill out forms on the Web to have access to Web site services. Further, during their on-line shopping, they provide several inputs regarding the products, quantities, and other preferences which can be captured and stored by the interface in files like the "cookies" and "session logs". These details can be used by the marketer to tailor the promotion message or product offering to the needs of the particular consumer. For example, a consumer who has recently asked for maternity benefits to be added to her health insurance, can be provided specific promotion and offers related to pre-natal care. In addition, the details of her location and family can be used to give her a specific deal at a nearby store. This consumer information can be constantly tracked to offer the benefits related to baby care in future. As standards of consumer data capture and code of ethics are developed and accepted, personal details of the consumer and her purchase habits can be used by the marketer to benefit both the consumer and the business.

7. Measurement of Internet Advertising

The ultimate effectiveness of any marketing channel can be measured by the extent to which the channel influences a consumer to purchase a product or service. For example, the effectiveness of the Internet as a promotion channel can be judged by how well the intended message and persuasion have been perceived by the consumer, as reflected in the consumer's response. The Web, as a marketing channel on the Internet, needs measures of advertising effectiveness in order to help managers plan their media investments. In fact, the successful Web sites all provide audience measurements, with many of the measurement data supported by third party sources (Fitzgerald, 1998). Realizing the importance of audience measurement, research has recently turned towards development of new tools and methodologies to measure Web advertisements. Our focus in this section will be the discussion of some of the current measures, the challenges and the future trends in Web advertising measurement.

Web Advertising Measurement Terminology

The measurement typically used for traditional advertising is the cost of reaching an audience (cost per thousand, abbreviated as CPM), based on circulation for print media and projected viewing audience for television (Zeff et al., 1997). Being a new medium with new capabilities, the Web has spawned new measurement terms. We give below brief definitions of some of the popular terms used in Web advertising (Zeff et al., 1997; Novak et al., 1996).

1. ***Hit:*** A hit is a record of each time a file is requested from a server. If a Web page consists of eight graphics as well as text, nine hits would be recorded each time that Web page is requested.
2. ***Request:*** A request is a connection to an Internet site that successfully retrieves content.
3. ***Visit:*** A visit is a series of requests made by one user during a specified time period. If a user stops making request for a given period of time, the next request is counted as another visit.
4. ***Unique visitor:*** A visitor who could be identified by information provided through a registration form or some other identification system.
5. ***Exposure:*** It is the number of times a visitor to a site is exposed to a particular advertisement. An exposure is counted each time an advertisement is delivered by a Web server.
6. ***Reach:*** This is the total number of unique visitors exposed to a Web advertisement.
7. ***Click-through:*** This is a count of the mouse-clicks on a "hot-linked" advertisement such as a banner or button. This is also called as the "Page Information Requests".

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8. Summary and Discussion

In this paper, we examined the capabilities of the Internet as a marketing channel and how this new channel can be exploited by marketers to effectively reach their message to the consumer. We also saw new consumer processes supported by the Internet and the challenges of measuring the effectiveness of this new channel. The ultimate objective of all marketing efforts is to allow the consumer to take possession of the product or service that satisfies her/his needs. This includes the process of informing, persuading and removing all barriers for the consumer to possess the product or service. The Internet does not alter this ultimate objective. What the Internet does alter is the specific implementation of the various elements of the marketing mix directed toward the objective. While doing this, the Internet, as a computing network and an interactive two-way communication channel, provides marketers with new capabilities not available in traditional channels. These capabilities allow the marketers to (1) understand their consumers better, (2) communicate their message to the consumers more effectively, and (3) provide new services in fulfilling the needs of the consumers. Having said this, it is to be noted that most organizations are still not clear of the impact of Internet strategies on their bottom line. As the organizations struggle with the changing consumer preferences, new technology, and the inadequacies of the traditional channels in achieving their objectives, the introduction of the Internet as a potential channel has created both excitement and anxiety among the marketers. For instance, the projected Web advertisement revenues of $9 billion by 2002 represents a tiny fraction of the overall advertisement revenues. A top executive of a leading consumer organization says that "the Web has the potential to be a dramatically more effective way for us to communicate with the people who buy and use our products" (Mand, 1998). While the same executive is concerned that the current state of the Web is not effective enough to really deliver the persuasive brand sell of other media, he also thinks that the eventual use of the Internet as an advertising medium is inevitable. Brand building over the Internet is another area of concern of the marketers. While marketers like to capitalize on the reach and interactivity of the Internet to build online brands, the strategies that work in traditional media do not work so well on the Internet (Neuborne, 1998). According to a recent survey, banners, based on the billboard concept and the most popular Web advertising model used by marketers, are "looked at" by only 9.1% of online users (Maddox, 1998). But marketers also know that there is enormous potential on the Internet, with the current generation, which is comfortable with the technology, growing into the consumer generation. Brand building efforts for this generation may have to consider, among other issues, consumer participation in the marketing efforts and replacement of the perception driven advertising models with experience driven interactive models. Also the Internet may be used with other marketing channels to build information flow and synergy among the product marketing efforts. We can categorize the barriers to significant exploitation of the Internet as a marketing channel as follows:

1. Limitations of the Internet in its current state such as limited band width, server capabilities and communication interface standards;
2. Lack of measurement standards that can give confidence to the marketers to shift to Internet; and
3. Absence of new business models that go beyond banner advertisement on the Web.

The communication capabilities of the Internet are being addressed by many government, research and corporate agencies. The measurement issues are also expected to be addressed and standards established to enable marketers to evaluate the benefits of the new media. But, only a few organizations have shown the willingness to develop new business models for the Internet and even here most of the efforts have been in digital products such as

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software and services. We feel that marketers, while realizing that the Internet does not change their basic objective of serving the consumers, should evaluate their traditional consumer models and find new ways to establish a closer relationship with their consumers. We attempt to provide a framework to understand some of the ways in which the Internet can serve as a marketing channel. But, much more issues have to be addressed to develop and use new Internet marketing models as electronic commerce continues to advance and impact the marketing function.

9. Conclusion

The competitive advantage of any organization is derived from the long term relationship that it has built with its consumers. As consumers increasingly take control of their need fulfillment process, marketers should evaluate the value that they can add to this fulfillment process to benefit both the consumer and the organization. In this chapter, we show how the Internet can be used by marketers to build and manage this close relationship with their consumers.

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Environmental Challenges to South Asian Countries

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ABSTRACT

Introduction: Growing environmental pollution and its impact on human beings and other living organisms are the major issue confronting the world economy. There is worldwide movement to control expanding pollution and lessening its negative effects. The economists have made extensive studies to measure the impact of environmental pollution on economic development.
Objective: The objective of this study to investigate into the causes of environmental pollution and its impact on economic development in South Asia and policy initiatives taken by different stakeholders to reduce its negative effects.
Research Problem: The research problem of this study is to investigate "Environmental Challenges to South Asian Countries and their impact on their economies and societies". The author has analyzed socio-economic impact of environmental degradation in South Asian countries.
Methodology: The methodology of the study is descriptive in nature because it mostly involves the description of environmental issues and suggesting the ways how they can be solved? However, different statistical techniques such as time series and panel data analysis have been used to measure socio-economic impact of environmental degradation.
Data and Source: The author has used secondary data in this study because it was not possible to collect primary data due to geographical constraints. Most of the data was taken from World Bank, IMF,Asian Development Bank, Indian Ministry of Environment and Forests, United Nations Environment Program, Economic Survey of Pakistan, relevant research journals and books.
Findings: The findings of the study are robust because the author has found that both developed and developing countries are responsible for environmental degradation. The advanced countries are using excessive recourses to produce surplus goods while the developing countries are exploiting their natural resources under compulsion to feed their growing population. Policy failure has been noted at both ends due to their divergent economic interests. The author suggest that its viable solution is to give market price to environmental resources and impose tax on the industries responsible for producing pollution in order to discourage them to produce environmental hazards and force them to opt environmental clean technologies, besides creating general awareness in the masses.

Key Words: South Asia, environmental hazards, degradation, deforestation, Air pollution, water borne diseases, Climatic changes, natural disasters.

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INTRODUCTION

South Asia is an important region of the world. It is the most populous region of the world. India, Pakistan and Bangladesh are three main countries located in this region. Their combined population is around 1.53 billion, which is 22.83 percent of world. These countries have been confronting environmental problems like other countries of the world.

South Asia is a rich region in natural resources; however, the region's vulnerability to the negative effects of climate change has increased lately. Taking notice of such emerging concerns the South Asian Association for Regional Cooperation, known as SAARC, has started taking steps to towards environmental concerns of the region. The 16th SAARC Summit was held in 2010 under the theme of "Towards a Green and Happy South Asia" as rightly selected theme by the host Bhutan. Before and during the Summit India stressed on the futuristic approach of SAARC and gave full support to the cause of climate change. The region also saw its first regional agreement on environment during this Summit. A statement on climate change entitled as the Thimpu Statement on Climate Change was also adopted during this Summit. In this Statement The concern over environmental issues of the region was articulated in South Asia earlier also but nothing concrete has come up till date to rescue the region. The Conveners of this session want to make a humble attempt to compare the SAARC's efforts to protect environment with the UN's and to draft a new agreement for the future actions in the region based on the lessons taken from the other international and regional documents on climate change and environmental protection. However, collective efforts have so far not any fruitful result because of political conflicts among the members of SAARC countries. However, individual efforts are being made to reduce environmental degradation and we will discuss them in detail in this study.

LITERATURE REVIEW

Poverty is one of the main causes of environmental problems. South Asia, which is the most populous region of the world, is facing high level of poverty, resulting excessive use of resources to meet the needs of growing population. In this review, we have intended to analyze various factors including poverty that are responsible for environmental degradation. Similarly, we have intended to investigate what different researchers have made observations about different factors, causing environmental degradation in South Asia.

Duraiappah (1996) contends that there is much controversy surrounding the poverty-environmental degradation nexus. He argues that poverty is a major cause of environmental degradation and if policy makers want to address environmental issues, then they must first address the poverty problem. He also argues that a direct link between poverty and environmental degradation is too simplistic and the nexus is governed by a complex web of factors. He highlights the important role institutional and market failure in encouraging agents from various income groups to exhibit unsustainable activities which in turn forces some of the agents to fall into poverty.

A large number of studies held loggingas responsible for unsustainable deforestation in many parts of Asia and South America. For example,Somanathan (1991) cites commercial timber interests driven by government policies as the principal incentive for deforestation in the Himalayas. Along similar lines Anderson (1989) asserts in his study that logging was the primary cause of unsustainable deforestation in many parts of Central Africa and Southeast Asia while Repetto (1990) attributes commercial logging as the number one agent for unsustainable tropical deforestation. An econometric study by Cropper and Griffiths (1994) supports, to a certain extent, the argument that logging may have been a primary force

responsible for deforestation activities by finding a significant correlation between the price of timber and the rate of deforestation for South Asia. A case in point is Goodland (1991), who cites cattle ranching and unplanned settlement as the main causes of unsustainable deforestation.Westoby(1991) and Cruz (1990) argue that shifting cultivators, agricultural and pastoral encroachment in the wake of logging trails were the major causes of deforestation.
Davidson (1993) cites conversion of forests for cattle ranching as well as the cultivation of cashcrops as responsible for 50% of the deforestation in the tropics. She argues that conversion,although driven primarily by market and consumption demands, was to a large extent encouraged by government policies. The author argues that in many cases, governments, driven by the need toservice foreign debts, implemented policies which encouraged, first, the felling of trees for timberexport followed by, second, the cultivation of cash crops or cattle ranching, as major sources offoreign exchange.Mink (1993) and a FAO study (1993) conclude that agricultural expansion driven primarily by population pressures was the principal cause for tropical deforestation in the past. Again, population pressures as well as government policies which provided incentives for people to move into these areas played a large part in converting large tracts of forest lands into permanent agricultural lands.
There is a large body of literature which states that population growth which is caused by poverty isa prime cause for environmental degradation. Rather than introduce another dimension in theanalysis, we capture population effects through the R1 link. For example, if poverty causes highpopulation growths which in turn cause environmental degradation, then the link between povertyand environmental degradation is captured with our present framework.The policy prescription oferadicating the poverty to avert the environmental degradation.It is estimated that tropical forests provide some source of livelihood for approximately 140 millionpeople. However, the loss of non-timber products and services of forests are difficult to value asmost of the items do not have a market price. Jodha (1991) documents 15 uses and services thatcommon property resources (CPR) provide to village communities in India and how these CPRresources serve as a critical buffer during droughts or other natural disasters. Jodha(ibid) estimates
42 to 57 percent of sustenance income derives from CPRs during droughts. A similar observation isnoted by Kadekodi (1995) who documents the subsistence as well as the buffer roles non-timberproducts play for the low income groups in the Palamau district in India. Southgate (1988), Mink (1993), Repetto (1989), and Mendelson (1994) allcite the lack of secure land tenure as the primary reason for poor farmers to cultivate their landexcessively to exhaustion; for the simple reason that they have no vested interest in preserving anasset which they do not own.Another similar form of soil exhaustion occurs when certain nutrients are taken from the soil but arenot replenished naturally or artificially with fertilizers (Mortimore 1989). This is especially commonwhen a homogenous crop, usually a cash crop, is grown repeatedly on the same piece of land. Thistrend has been especially common in developing countries where governments react to world pricesof cash crops and initiate policies which encourage cultivation of these crops. For example, in India, large tracts of the Western Ghats were cleared for coffee and rubber when the prices of these twocrops rose. The incentives given by governments to encourage farmers to cultivate these cash cropsranged from fixed high prices to easy access to forest lands. However, the institutional support interms of fertilizers, access to credit as well as to technology was not provided and the small farmerswho were lured by the promises of quick profits were then faced with declining yields as the landslost their productivity. These poor farmers either had to sell the land and become landless peasantsor encroach on new forest land (Graff

1993,Bandyopadhyay 1987). The main groups whobenefited from the conversion were the large farmers who had access to the necessary resources forthe successful cultivation of cash crops. (Oodit1992).Oodit (1992) states that salinity has reduced the yield of major crops by 30% in the 15 million hectares of irrigated land in Pakistan. In Bangladesh, the salinization of agricultural lands forced many farmers to pursue fishing as an alternative vocation. However, the massive increase in the number of fishermen resulted in over-fishing and the fishery sector has been to a large extent depleted to extinction (Atiur 1995).At the global level, 22 countries are presently facing severe water shortages while a further 18 are inthe danger of facing shortages if fluctuations to the present rainfall patterns occur (World Bank1992). At the regional level, the water shortage issue takes on a more important dimension as thewater shortages in regions within a country can have significant economic and social impacts acrossthe country. It is estimated that approximately 2 billion people live in areas with chronic watershortages and the numbers are expected to increase, with increasing demand for water caused bygrowing populations and economic activity (UNFPA 1991, Davidson 1992). Although water shortage is a major threat, water contamination and pollution poses a moreimmediate serious problem. Access to safe drinking water is still considered a luxury for many indeveloping countries (Mink 1993). The UNEP (1995) study estimates 1 billion people with noaccess to running water while 1.7 billion do not have access to sanitation facilities. In the past,

human waste was deposited in natural systems but with increasing populations, the load of humanwaste has far exceeded the natural systems absorption and cleansing rate. Therefore, withoutmodern sanitation systems to help relieve the natural systems, it is only logical for the naturalsystems, including water, to become degraded.

Water contamination also comes in the form of industrial and agricultural pollutants. The cheap andeasy alternative of dumping industrial and agricultural effluent in water systems in-lieu of expensivecleaning systems has made water systems an easy target for waste dumping. Oodit (1992) cites the expansion of irrigation systems as well as the industrial demand for water asbeing the two main reasons for water shortages in developing countries. A UNEP study (UNEP1995) estimates that 95% of water use in developing countries is for the agricultural sector.

Excessive pumping of groundwater for irrigation, assisted by the introduction of electric pumps aswell as the lack of a well-defined water property rights, have caused withdrawal rates to exceedregeneration rates of the various water systems (Shah 1993). This is clearly evident in the Indianstate of Maharashtra where bore holes were being continuously dug to provide irrigated water tosugar cane plantations but each bore hole was going dry within a year of drilling(UNEP 1995).One of the main pollutants for water contamination in the developing countries is human waste. Highrural-urban migration rates have placed existing inadequate and antiquated sanitation and wastedisposal facilities in cities in many developing countries under stress. By and large, the watercontamination problem caused by human waste is an urban problem and has been largely ignored inmany developing countries because policymakers do not recognize slums as legal entities. The statusof illegality then relinquishes policy makers of any obligation to provide adequate sanitation facilities.

The second contributor to contaminated water is dumping of industrial waste. Similar to humanwaste, if industrial waste is dumped in amounts excessive to the cleansing rate of the systems, it canonly result in an accumulation of waste to toxic levels as well as the deterioration of the water systemof its cleansing properties. It is estimated that 40 of Malaysia's major rivers are polluted byindustrial and agricultural waste, while 54 out of 78

rivers in China are clogged with industrialpollutants (Davidson 1992).A third form of water contamination comes from fertilizers and pesticide run-off from the agriculturalsector. The Green Revolution technology relied heavily on the use of fertilizers and pesticides forincreasing crop yields. However, a factor which was overlooked by the experts is the contaminationof the groundwater system as these substances eventually find their way into this crucial water supplywhich experts estimate takes 14,000 years to replenish (UNEP 1995).One of the major problems associated with polluted water is the spread of diseases.
The WorldHealth Organization (2011) highlights four forms of diseases caused by water pollution from human andanimal waste: waterborne, water-washed, water-based, and water-related. It is estimated that 4
million children die from diarrhea, a water-borne disease, each year and is a leading cause of childand infant mortality. Davidson (1992) extends the estimate across all age groups and estimates25,000 people a day or 9 million a year die from diariah.The World Bank estimates that 1.3 billion people, most of them in developing countries, live in townor cities which do not meet minimum WHO standards for Suspended Particulate Matter (SPM).
This statistic covers only outdoor air-pollution. If the coverage is extended to include the 400 to700 million(mostly rural women and children) people who are exposed to unsafe levels of indoorpollution, we have approximately two fifths of the world population, most of them located indeveloping countries, who do not enjoy the basic right to clean air while UNICEF estimates 12.4 million deaths annually due to dirty water and sanitary conditions.One of the prerequisites for modern economic growth is energy and one of the primary sources ofenergy is the burning of fossil fuels. Coal, which is one of the cheapest fossil fuels and also the most abundant is considered to be the most polluting of the fossil fuels. It emits CO2 which by itself is nottoxic but is a significant greenhouse gas when left to accumulate. Coal also emits large amounts ofparticulates and is a significant source for SPMs. Another growing and potentially important futuresource of SPMs is vehicular emission. The rising trend of affluence within developing countries hascaused a rising demand for gasoline based transport systems. Many developing countries do notlegally prohibit the use of lead based gasoline for vehicles nor restrict emissions of SPMs.
The most important negative externality arising from air-pollution, indoor or outdoor, is healthdeterioration. Indoor pollution arising from biomass based cooking and heating stoves is known tobe a primary contributor to respiratory problems. It is estimated that 300,000 to 700,000 deathscan be prevented if SPM concentrations can be held to WHO standards (World Bank 1992).Other indoor pollution related impacts are lower productivity among adults and mental retardationamong children. It is estimated that urban centers which have SPM levels above the WHOstandards lose an equivalent of 0.6 to 2.1 working days per year for every adult in the labour forcedue to respiratory related illness (ibid). Furthermore, the medical cost burden on the economy canalso be staggering. The low incomegroups are the hardest hit by health deterioration. A day lost due to illness implies a day's loss ofwages as well as the possibility of job loss. The lack of health insurance as well as labour laws toprotect workers further increase their sufferings. The main causes cited in the above literature review for environmental degradation can be summarized as under:-

1. Poverty.
2. Air Pollution.
3. Government policies.
4. Unemployment.
5. Greed to increase income by excessive use of natural resources.

6. Contamination of water resources.
7. Use of chemicals.
8. Limited economic opportunities.
9. Population growth.
10. Urbanization

RESEARCH METHODOLOGY

The study relates to the description of environmental issues in South Asia and search for their viable solution. For this purpose, there is no need to used regression analysis or mathematical modeling. The author selected main indicators of environment to explain environmental problems.

OBJECTIVES OF STUDY

The main objectives of the study are to investigate into the environmental situation in South Asia. It also include in the objectives to probe whether environmental pollution is increasing in this region, if it is increasing, how it is affecting human beings and other living organism.

Main Research Problem

The research problem of this study is to investigate "Environmental Challenges to South Asian Countries and their impact on their economies and societies". The author has analyzed socio-economic impact of environmental degradation in South Asian countries.

SAMPLE

Environmental problem is an international issue and all countries whether they are developed or under-developed are facing this problem equally. The developed and underdeveloped countries are working collectively or individually to control environmental hazards. We have selected South Asian countries as sample to assess the problem of environmental pollution.

DATA AND SOURCE

In this study the author has mostly used the secondary data taken from World Bank, IMF, Asian Development Bank, Ministry od Environment and Forest, INDIA, Economic Survey of Pakistan, relevant journals and books.

SELECTED VARIABLES

The variable selected to measure the environmental problems are as follows:

- Air Pollution.
- Water Pollution.
- Emission.
- Soil Erosion
- Deforestation.
- Urbanization.
- Poverty.
- Chemical Wastes.
- Hospitals wastes.
- Electronic wastes

STATISTICAL TECHNIQUES

The Author has used time series and panel data analysis techniques to assess situation of environmental pollution and its effects. As changes in environmental indicators were clearly visible the author felt no need to use regression analysis or mathematical modeling.

WHAT IS ECOSYSTEM?

UNEP annual Report 2011 states that "Human well-being depends on the health of ecosystems. An ecosystem is a dynamic complex of plants, animals, microorganisms and their nonliving environment, of which people are an integral part. The benefits that we derive from nature and rely on every day, from timber and food to water and climate regulation, are all ecosystem services. Our Earth's ecosystems have been degrading rapidly.Most attempts so far have targeted particular sectors – such as water or agriculture – rather than looking at these collectively. But everything that lives in an ecosystem is dependent on the other species and elements that are also part of that ecological community. If one part of an ecosystem is damaged or removed, it has an impact on everything else. The UN ecosystems approach is an integrated strategy for managing land, water and living resources that recognizes the strong linkage between ecosystem services and human well-being. It ensures that these essential services, and the systems that support them, are correctly valued, protected and managed.

In 2005, the UN Millennium Ecosystem Assessment examined a group of 24 ecosystem services and found that 15 were being degraded or used unsustainably. This decline in services disproportionately affects the world's most disadvantaged and vulnerable people. And as these problems, unless addressed, will substantially diminish the benefits that future generations obtain from ecosystems, they are a rising barrier to sustainable development.The Ecosystem Management sub-programme focuses on six of the 15 ecosystem services in decline listed by the Millennium Ecosystem Assessment: climate regulation, water regulation, natural hazard regulation, energy, freshwater and nutrient cycling. These are prioritized based on the seriousness of the degradation, the potential impacts on human well-being, and the implications for sustainable development.

WHAT IS A GREEN ECONOMY?

UNEP annual report (2011) defines a green economy as one that it improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive.Practically speaking, a green economy is one whose growth in income and employment is driven by public and private investments that reduce carbon emissions and pollution;enhance energy and resource efficiency, unemployment. Launching 2011 Report, the UN Secretary General, Ban Ki Moon said: "The UNEP Green Economy report challenges the myth that there is a trade-offbetween the economy and the environment. With smart public policies, governments can grow their economies, generate decent employment and accelerate social progress in a way that keeps humanity's ecological footprint within the planet's carrying capacity."

WHAT IS SUSTAINABLE DEVELOPMENT?

There is close link between environment and sustainable development which is used in the broad perspective and the overall development of human beings without any distinction. The World Conservative Strategy initiated by the United Nations Environment Programme (UNEP),the world wide Fund for Nature (WWF) and international Union for Conservation of Nature (IUCN), provided the platform for international debate on sustainability. The most noteworthy step towards sustainable development is the publication of an international report titled "Our Common Future" by World Commission on Environment

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(WCED) in 1987. This is commonly known as "The Brundtland Report ".The report defined sustainable development as "Development that meets the needs of the present, without compromising the ability of future generations to meet their own needs".

According to this report, the major objective of development should be to ensure the satisfaction of human needs and aspirations of a material kind. It emphasized the fact that over exploitation of resources may compel human societies to compromise their ability to meet the essential needs of their people in future. Settled agriculture, the diversion of watercourses, the extraction of minerals, the emission of heat and noxious gases into the atmosphere, commercial forests, and genetic manipulation, were all mentioned in the report as examples of human intervention in natural system during the course of development. It called upon all countries to adopt the objective of sustainable development as the overriding goal and test of national policy and international cooperation.

Three Earth Summits were held under the auspicious of United Nations Conference on Environment and Development (UNCED) in 1992, 1997, 2002 and 2012. Over 170 countries participated in these Summits renewed their commitment to sustainable development aiming at " giving special attention to the worldwide conditions that pose severe threats to the sustainable development of the people, which include: chronic hunger; malnutrition; foreign occupation; armed conflict; illicit drug problems; corruption; natural disasters, communicable diseases, in particular HIV/AIDs, malaria and tuberculosis".

After these Summits, the sustainable development has become a universal theme to describe the amalgamation of environmental opportunities and human wisdom.

Different Nature of Sustainable Development

The development has different nature which deals with the welfare of human being and its ultimate goal is his amelioration. The sketch of different nature of developments is given below:-

- Spiritual Development- It deals with the religious and moral values.
- Human Development- It deals with Society and social structure.
- Economic Development- It deals with the Economy and Economic System.
- Political Development- It deals with the Government and political system.
- Cultural Development - It deals with the Culture, Customs, Traditions and norms.
- Ecological Development- It deals with the Nature (Environment).

How to Achieve Sustainable Development?

There are certain mandatory conditions and requirements to achieve the objectives of sustainable development. These conditions can be met by giving empowerment to the following sections of society.

- Women
- Children
- Youth
- Indigenous people and their communities.
- Non-governmental organization
- Local authorities
- Workers and trade unions
- Business and industry.
- Farmers.

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- Scientific and technological organizations.

Now we briefly review the individual environmental challenges being faced by South Asian Countries

ENVIRONMENTAL CHALLENGES TO INDIA

In India the increasing economic development and a rapidly growing population that has taken the country from 300 million people in 1947 to more than one 1.19 people IN 2012 is putting a strain on the environment, infrastructure, and the country's natural resources. Industrial pollution, soil erosion, deforestation, rapid industrialization, urbanization, and land degradation are all worsening problems. Overexploitation of the country's resources be it land or water and the industrialization process has resulted environmental degradation of resources.

India's per capita carbon dioxide emissions were roughly 3,000 pounds (1,360 kilograms) in 2007, according to the study. That's small compared to China and the U.S., with 10,500 pounds (4,763 kilograms) and 42,500 pounds (19,278 kilograms) respectively that year. The study said that the European Union and Russia also have more emissions than India. India is among the world's worst performers when it comes to the overall environment. We rank 125 of 132 countries. Even Pakistan and Bangladesh are less polluted than we are. A study released earlier this year by the environmental research centres of Columbia and Yale showed that India was at the bottom of the heap when it came to air pollution.

Air Pollution

India has the worst air pollution in the entire world, beating China, Pakistan, Nepal and Bangladesh, according to a study of World Economic Forum held in Davos in 2011. Of 132 countries whose environments were surveyed, India ranks dead last in the 'Air (effects on human health)' ranking. The World Health Organization estimates that about two million people die prematurely every year as a result of Air pollution, while many more suffer from breathing ailments, heart disease, lung infections and even cancer. Fine particles or microscopic dust from coal or wood fires and unfiltered diesel engines are rated as one of the most lethal forms or air pollution caused by industry, transport, household heating, cooking and ageing coal or oil-fired power stations.

There are four reasons of air pollution in India that are under;-

1 .Emissions from vehicles.
2. Thermal power plants.
3. Industries and
4. Refineries.

The problem of indoor air pollution in rural areas and urban slums has increased. CNG is not without environmental drawbacks say a new Central Pollution Control Board study on January 05, 2011. The study says burning CNG has the highest rates of potentially hazardous carbony emissions. The study also made a case for regulating CNG and other fuels for methane emissions. Methane, a greenhouse gas, is a key contributor to climate Change. Among the study's finds were that retrofitted CNG car engines emit 30% more methane than original CNG engines. Almost all CNG car engines in India are retrofitted.

One major study in September 2011 found that components of diesel exhaust including particulate matter can cause biologic responses that are related to Asthma this exposure is associated with the inflammatory and immune responses involved in asthma.

Studies conducted in various parts of the world have revealed a strong link between type 2 diabetes and cardiovascular diseases and continuous exposure to ultra fine particulate

matter present in the air. Particulate matter in the air which is very fine and is less than 2.5 microns in size is called PM2.5 and has been known to cause diabetes and cardiovascular diseases. Diesel engine exhaust fumes can cause cancer in humans and belong in the same potentially deadly category as asbestos, arsenic and mustard gas, World Health Organization (WHO) experts said on June 15, 2012. Outside of Europe and India, diesel engines are almost entirely confined to commercial vehicles. German carmakers are trying to raise awareness for diesels in the United States, where the long distances traveled on highways suit diesel engines.

India's environmental problems are exacerbated by its heavy reliance on coal for power generation. "More than 80 per cent of energy is produced from coal, a fuel that emits a high amount of carbon and greenhouse gases." . According to IMF chief Christine Lagarde on July 10, 2012 , pollution from coal generation plants causes about 70,000 premature deaths every year in India.On May 26, 2011 the Haryana State Pollution Control Board has ordered closure of 639 polluting industrial units in 2010-11 and directed the highly polluting industries to set up continuous online monitoring stations to ensure compliance of standards of air emissions. The Government has launched prosecution against 151 polluting units in the Special Environment Courts in Faridabad and Kurukshetra, and made 9,239 units install pollution control devices.

According to a study published in the journal Environmental Science and Technology (EST) in the first week of October 2010, almost 8,000 people will die due to aircraft pollutants this year, and 3,500 of them would be from India and China. A recent report by MIT researchers says that the harmful pollutants emitted by an aircraft at an altitude of 35,000ft are fatal for people. The report says that nitrogen and sulphur oxides emitted by aircraft at 35,000ft combine with other gases in the atmosphere to create noxious particulate matter.Vehicle emissions are responsible for 70% of the country's air pollution. The major problem with government efforts to safeguard the environment has been enforcement at the local level, not with a lack of laws. Air pollution from vehicle exhaust and industry is a worsening problem for India. Exhaust from vehicles has increased eight-fold over levels of twenty years ago; industrial pollution has risen four times over the same period. The economy has grown two and a half times over the past two decades but pollution control and civil services have not kept pace. Air quality is worst in big cities like Kolkata, Delhi, Mumbai, Chennai, etc. According to the Society of Indian Automobile Manufacturers, India's auto production has doubled from 7 million units in fiscal year 2004 to over 14 million units in year 2010 largely on the back of a buoyant domestic market. Over 700 million people in India suffer from high levels of indoor air pollution affecting women and young children as 75 per cent homes use biomass fuel like wood, crop residue and dung cakes.

River Water Pollution

Contaminated and polluted water now kills more people than all forms of violence including wars, according to a United Nations report released on March 22, 2010 on World Water Day that calls for turning unsanitary wastewater into an environmentally safe economic resource. According to the report -- titled "Sick Water?" -- 90 percent of wastewater discharged daily in developing countries is untreated, contributing to the deaths of some 2.2 million people a year from diarrheal diseases caused by unsafe drinking water and poor hygiene. At least 1.8 million children youngerthan 5 die every year from water-related diseases. Fully 80 percent of urban waste in India ends up in the country's rivers, and unchecked urban growth across the country combined with poor government oversight means the problem is only getting worse. A growing number of bodies of water in India are unfit for human use, and in the River Ganga, holy to the country's 82 percent Hindu

majority, is dying slowly due to unchecked pollution. New Delhi's body of water is little more than a flowing garbage dump, with fully 57 percent of the city's waste finding its way to the Yamuna. It is that three billion liters of waste are pumped into Delhi's Yamuna (River Yamuna)each day. Only 55 percent of the 15 million Delhi residents are connected to the city's sewage system. The remainder flush their bath water, waste water and just about everything else down pipes and into drains, most of them empty into the Yamuna. According to the Centre for Science and Environment, between 75 and 80 percent of the river's pollution is the result of raw sewage. Combined with industrial runoff, the garbage thrown into the river and it totals over 3 billion liters of waste per day.

Municipal Wastes

India's urban population slated to increase from the current 330 million to about 600 million by 2030, the challenge of managing municipal solid waste (MSW) in an environmentally and economically sustainable manner is bound to assume gigantic proportions . The country has over 5,000 cities and towns, which generate about 40 million tonnes of MSW per year today. Going by estimates of The Energy Research Institute (TERI), this could well touch 260 million tonnes per year by 2047. Municipal solid waste is solid waste generated by households, commercial establishments and offices and does not include the industrial or agricultural waste. Municipal solid waste management is more of an administrative and institutional mechanism failure problem rather than a technological one. Until now, MSW management has been considered to be almost the sole responsibility of urban governments, without the participation of citizens and other stakeholders. The Centre and the Supreme Court, however, have urged that this issue be addressed with multiple stakeholder participation. Cities in India spend approximately 20% of the city budget on solid waste services.

Electronic Wastes

India produces about 3,80,000tonnes of e-Waste per annum, which includes only the waste generated out of television sets, mobile phones and PCs, a major chunk of which comes from organizations. E-waste produced in India includes over 100,000 tonnes from refrigerators, 275,000 tonnes from TVs, 56,300 tonnes from personal computers, 4,700 tones from printers and 1,700 tonnes from mobile phones. The un- organized recycling sector which fails to practice eco-friendly e-Waste recycling methods release large amount of toxic chemicals. The toxic gases and the large volume of Electronic Waste Adds environmental Pollution in India. India imports almost 50,000 tonnes of e-waste yearly. It generated 330,000 tonnes of e-waste in 2007 and the number is expected to touch 470,000 tones by Pollution due to e-Waste.

Greenhouse Gas Emission

India emits the fifth most carbon of any country in the world. At 253 million metric tons, only the U.S., China, Russia, and Japan surpassed its level of carbon emissions in 1998. Carbon emissions have grown nine-fold over the past forty years. In this Industrial Age, with the ever-expanding consumption of hydrocarbon fuels and the resultant increase in carbon dioxide emissions, that greenhouse gas concentrations have reached levels causing climate change. Going forward, carbon emissions are forecast to grow 3.2% per annum until 2020. To put this in perspective, carbon emissions levels are estimated to increase by 3.9% for China and by 1.3% for the United States. India is a non-Annex I country under the United Nations Framework Convention on Greenhouse gases and climate Change, and as such, is not required to reduce its carbon emissions. An historical summary of carbon dioxide (CO_2) emissions from fossil fuel use in India is increasing rapidly and causes global warming. All inhabitants of our planet have an equal right to the atmosphere, but the industrialized countries have greatly exceeded their fair, per-capita share of the planet's atmospheric resources and have induced climate change. The most developed countries

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possess the capital, technological and human resources required for successful adaptation, while in the developing countries, a large proportion of the population is engaged in traditional farming, that is particularly vulnerable to the changes in temperature, rainfall and extreme weather events associated with climate change.According to the UN Framework Convention on Climate Change and the Kyoto Protocol , the most industrialized countries are mainly responsible for causing climate change. Thus equity requires that they should sharply reduce their emissions in order to arrest further climate change and allow other countries access to their fair share of atmospheric resources in order to develop

ENVIRONMENTAL CHALLENGES TO PAKISTAN

Pakistan like other similar developing countries is facing threat of depletion of ozene layer, global warming, natural resources degradation and environmental pollution. The people are continuously migrating from rural to urban areas due to low crop yields, lack of alternate employment opportunities and environmental degradation due to water-logging/salinity, deforestation and desertification. The productivity of soil is being lost due to water-logging, salinisation and sodcity. It is estimated that 38 percent of Pakistan's irrigated land is water logged,14 percent is saline and the application of agricultural chemicals has increased by a factor of almost 10 since 1980.Water-loggind and salinity have affected about 14 million ha, while deforestation and overgrazing affected 11 and 24 million ha, respectively. Similarly, salt build-up in the soil is estimated to have reduced crop yield by 30 percent. Wind erosion is another factor affecting millions of hectare lands. Pakistan only have 0.01 percent of forest per capita as compared to world average 1 percent and the legally protected land area is less than 5 per cent of the total land mass. Pakistan has 4.01million hectares covered by forests, which is equivalent to about 5% of total land area. Eighty five percent of this is a public forest, which includes 40% coniferous and scrub forests on the northern hills and mountains. The balance is made up of irrigated plantations and river rain forests along major rivers on the Indus plains, mangrove forests on the Indus delta and trees planted on farmlands. Though Forest resource is meager it plays an important role in Pakistan's economy by employing half a million people, providing 663 thousand cubic meters of timber that constitutes one-third of country's energy need, supporting about 30 million herds of livestock, which contributes more than US$ 400 million to Pakistan's annual export earnings. However, forest is being lost every year, and Baluchistan's juniper forests, unique in the world, continue to be cut beyond their capacity to regenerate. Under Millennium Development Goals of Forestry sector Pakistan has planned to increase forest cover area from existing 5% to 5.7% by 2011 and 6% by the year 2015. This implies bringing an additional 1.051 million hectares land area under forest. Per Capita water availability in Pakistan has been decreasing at an alarming rate. In 1951, per capita availability was 5300 cubic meters, which has now decreased to 1105 cubic meter just touching water scarcity level of 1000 cubic meter. The productivity of fresh water is also decreasing due to losses in the movement of water from canal heads to the croplands. The Table 1 highlights this fact.

Table 1: Per Capita Water Availability

Year	Population (Million)	Availability (m 3)
1951	34	5300
1961	46	3950
1971	65	2700
1981	84	2100
1991	115	1600

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2001	141	1200
2013	181	850
2025	221	669

Source: State of Environment Report, 2005

The existing water resources are under threat due to rapid degradation, soil erosion, deforestation and untreated discharge of municipal and industrial wastes to rivers and other water bodies. The study conducted by Pakistan Council of research in Water Resources reveals that water in many cities of Pakistan is unsafe for human consumption due to both bacterial and chemical contamination. It also reveals that water table has been decreasing at a rate of 10 feet every year, which is also affecting the quality of water.

The water scarcity is also growing in all South Asian countries. Table 2 shows falling water resources in South Asian countries including Pakistan.

Table 2: Deterioration of Water Resource in South Asia Fresh water resources per capita (CUM)

Country	2002	2004
Afghanistan	-	-
Bangladesh	783	754
Bhutan	111632	106062
India	1202	1167
Maldives	98	93
Nepal	7768	7454
Pakistan	362	345
Sri Lanka	2631	2575

Source: World Bank Database, 2006

The above table shows that water resources are continuously deteriorating in all countries of South Asia. India has reportedly built about 48 water reservoirs to conserve water and to use it for irrigation purpose. Pakistan could not build even a single water reservoir since 1970 due to lack of resources and external political pressure. The Municipal institutions have lacked resources and technical capacity to accommodate the needs of increasing urban population. The collection of waste by Municipalities is quite irregular and limited to certain influential areas. The growing use of disposable items and packaging material proliferating environmental pollution and increasing the amount of solid waste.

According to Pakistan Council of Research in Water Resources (PCRWR), the majority of the population in the country is exposed to the hazards of drinking unsafe and polluted water from both surface and ground water sources. As derived from the National Water Quality Monitoring Programme carried out by the PCRWR, the 4 major contaminants in drinking water sources of Pakistan were bacteriological (68 percent), arsenic (24 percent), nitrate (13 percent) and fluoride (5 percent). Similarly, the five years trend analysis has revealed that out of a total 357, only 45 water sources (13 percent) were found "safe" and the remaining 312 (87 percent) were "unsafe" for drinking purpose. In Pakistan about 68 percent of the drinking water consumption is from groundwater for both urban and rural areas.

According to an estimate, the urban areas of Pakistan generate more than 60,000 tons of solid waste, out of which 60 percent is left uncovered in open places or drains in the waterways creating serious health hazards. Industrial base of Pakistan is rapidly expanding and its share in GDP has grown to 26 percent in 2006 from 22 percent in 2000.The number of textile, leather, sports, surgical, papers and food processing industries have grown rapidly,

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emitting more and more toxic affluent into the air and water. The industrial sector uses about 525 types of chemicals and dyes/colour in different processing industries. Their processing generates wastes causing contamination of soil and poses potential risk to public health and damage the fertility of cropland.

In Pakistan only 3 percent of total industrial units treat their waste while the rest are discharged untreated into rivers, lakes, canals and sea. Dumping of untreated industrial waste has caused contamination of surface and ground water resources, threatening aquatic life to the dangerous level. About 47 percent population is still without access to safe drinking water and 70 percent is without sanitation facilities. Water borne disease account for 20 to 30 percent of infant deaths in the country. The data given in Table 1 shows infant mortality rate in different countries of South Asia, indicating high mortality rate in Pakistan and low mortality rate in Sri Lanka. During a period of 1990-2004 the mortality rate was drastically fallen in Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka while in Pakistan it was reduced nominally as is shown in Table 3.

Table 3: Infant Mortality Rate in South Asia
(Infant Mortality rate under 5 (per 1000)

Country	1990	1995	2000	2004
Bangladesh	149	120	92	77
Bhutan	166	133	100	80
India	123	104	94	85
Maldives	111	86	60	46
Nepal	145	120	95	76
Pakistan	130	118	108	101
Sri Lanka	32	25	19	14

Source: World Bank Database, 2006

Thermal source of energy is another cause of air pollution and the share of installed capacity of thermal power in electricity generation is 12434 MW as compared to 6493 MW of hydel power in Pakistan. Hospital wastes management is also a serious problem due to use of disposable instruments such as needles, syringes and other similar items. Around 250,000 tons of medical waste is produced annually from all types of health center facilities in Pakistan. The major public, private and laboratories in the cities produce 3 tons of wastes every day. Most of this, around 75 percent,comes from government hospitals and is dumped into the containers of City Government, threatening the lives of citizens because the risk of diseases like diarrhea,dysentery,cholera,typhoid, hepatits,malaria,etc, have increased to much an extent. As average Pakistan uses 5 syringes per year making annual demand about 750 million syringes. Pakistan imports 250 million syringes and 500 million syringes are produced locally in unsafe manner. This type of waste has bad effect on land, air, plants and human health. Some hospitals and Municipalities burnt their wastes in improper way that produces large amount of toxic gases. There is no institution to measure the level of these emissions which cause air pollution.

Like many other South Asian Countries, Pakistan also faced many natural disasters in past. But it faced the worst ever earthquake of its history measuring 7.6 on the Richter scale resulting the loss of about 100,000 lives and elimination of hundreds of towns and villages. The latest estimate reveals that between 3.5 million people were affected by this disaster. About 86 percent of total housing stock was either damaged or destroyed in Azad Kashmir

and 36 percent in NWFP.Hospitals, schools, government and private buildings were badly damaged. Even after 8 months, many dead bodies have not been recovered from the rubble especially in the isolated mountainous areas. The organic and demolition wastes are causing large scale incidence of diseases.

High Population Density

Almost all South Asian countries are high population growth rate and their population is increasing rapidly. The growing population is creating scarcity of food, land and other consumer goods. Among South Asian countries, India, Pakistan and Bangladesh are more populous countries. Majority population of these countries is living in their rural areas, which lacks necessary amenities. The density of rural population of these countries is shown in the Table:

Table 4: Rural Population Density in South Asia (sq Km arable Id)

Country	1990	1995	2000	2001	2002	2003
Bangladesh	914	1172	1225	1248	1275	1297
Bhutan	502	500	531	706	723	740
India	389	423	458	465	471	475
Maldives	3996	4684	5260	5361	5472	5576
Nepal	761	830	907	910	924	937
Pakistan	366	398	434	438	444	503
Sri Lanka	1535	1650	1706	1650	1638	1659

Source: World Bank Database, 2006

Environmental Legislation

During the last decade, Pakistan has made diligent progress in the institutional strengthening and capacity building of policy and planning institutions, environmental awareness and the promulgation of environmental legislation. Pakistan Environmental Protection Act, 1997(PEPA) was the major step to check growing pollution and laid down foundation for a clean environment. The PEPA targets the protection, rehabilitation and improvement of the environment so that pollution can be controlled for sustainable development. The Act covers the following areas:

- Air Pollution.
- Water Pollution
- Land Pollution
- Noise pollution.
- Solid Waste.
- Pollution caused by vehicular emissions.

The Act empowered the Federal Government to implement National Environmental Quality Standards (NEQS), and also develop the environmental standards for quality of air, water and land under section 6(1), while under section 24 of the Act; High Courts have been empowered to deal with the environmental cases. Separate Ministries at Federal and Provincial levels have been set up to implement environmental policies. Pollution-spreading industries are being relocated from urban areas to specific remote areas. Environmental tribunals have been set up. The energy sector has introduced lead-free petrol and since July 2002, all refineries in the country are supplying lead-free petrol and promoting clean fuels including CNG.

National Environmental Action Plan (NEAP) that was initiated in 2001 after the approval of Pakistan Environment Protection Council and UNDP funded has got roots. The initial

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Environmental Examination (IEE) and the Environment Impact Assessment (EIA) have already been made mandatory for public sector development projects. One of the major achievements of NEAP-SP during 2005-06 was preparation of the country's first ever "National Environmental Policy 2005", which has been approved by the Federal Cabinet. The policy objectives are to address the core sect oral and cross-sect oral issues like

(a). Water management and conservations. (b). Energy efficiency and renewable.
(c). Agriculture and livestock, (d). Forestry and plantation,
(e). Biodiversity and protected areas, (f) Climate change, air quality and noise
(g). Waste Management (h). Population and environment (i). Gender and environment.
(j). Health and environment (k). Trade and environment (l). Poverty and environment and
(m). Environment and local government.

An action plan is being implemented to bring down emissions of air pollutants gradually within the safe limits through promoting unleaded gasoline, low sulphur fuel oil/diesel and gradual switching of power plants and vehicles to natural gas/CNG. Promoting energy-efficient and clean technologies will bring emission levels well within admissible limits of 114,000 Gigagrams (Base year 1994 level for developing countries) and greenhouse gases (GHGs).

Following ratification of the Kyoto Protocol in 2006 Pakistan has established the "Designated National Authority" (DNA) for Clean Development Mechanism (CDM) in the Ministry of Environment. National Operational Strategy for CDM has been approved by the Federal Government. Pakistan has enhanced budgetary allocations for the environmental sector for the period 2005-2010 to ensure environmental sustainability.

Development of CNG Sector in Pakistan

The government is promoting the use of CNG on large scale to reduce pollution level. ON June ,2011 there were 3331 CNG stations operating all over the country while total number of CNG vehicles were 27,40,000, making Pakistan CNG's fleet the largest inAsia.The vertical growth of CNG stations and CNG vehicles can be assessed from the following table.

Table 5: Growth of CNG Sector,1999-2006

As on	CNG Stations (No.)	Converted Vehicles (No.)
December 2000	150	120,000
December 2001	218	210,000
December 2002	360	330,000
December 2003	475	450,000
December 2004	633	660,000
December 2005	835	1,050,000
December 2006	1,190	1,300,000
16th May, 2007	1,450	1,400,000
February 2008	2,063	1,700,000
December 2009	3,051	2,000,000
June 2011	3,331	2,740,000

Source: OGRA, Ministry of Petroleum & Natural Resources

ENVIRONMENTAL CHALLENGES TO BANGLADESH

Bangladesh is located in the Tropical zone of South Asia. It has the world's highest rainfall, which affects the topography of the territory and the location of economic activities. The country is spread over an area of 143,988 km with population of 150 million (2012). Much of the country territory is partly submerged or subject to flooding during the rainy season and cultivation of rice and jute employs a very large portion of the workforce. Female share in the labour force is 42 percent (1997). Bangladesh is the most densely populated agricultural nation in the world as well

as the poorest and least developed in Asia, with 2000 per capita GNP of only $380, a life expectancy of 61 years and a literacy rate for women of under 30 percent. Despite high speed of urbanization process, over three quarters of the population still lives in rural areas, most engaged in subsistence farming. In addition to its vulnerability to frequent monsoons and other natural disasters,the Bangladesh economy suffers from structural constraints such as poor transportation and communication facilities, which persist despite attempts by policy makers to remove them. Agriculture accounts for approximately one-quarter of both GDP and exports. The relative high dependence of on agriculture has not allowed Bangladesh to absorb its rapidly growing labor force or generate a sufficient flow of foreign exchange earnings. Despite all these constraints Bangladesh has achieved a highly respectable average real rate of per capita GDP growth of 3.2 percent in the 1990-2000 period. Bangladesh is among those countries of South Asia where pollution is the main problem. According to a World Bank survey report conducted by a team headed by SusmitaDasgupta in July,2003 it was found that more than 47% of farmers in Bangladesh were using more pesticide than they needed to protect their crops. With only 4 percent of farmers are formally trained in pesticide use or handling and 87% freely admitting that they used little or no protective measures while applying pesticides. Over use of fertilizers is potentially a very threatening problem to the farmers' health as well as environment. As many as 54% of the pesticides traders themselves health symptoms associated with pesticide poisoning and 92% admitted that they do not use protective measures while handling pesticides. The report conclude that "This problem is hardly confined to Bangladesh, over use and other pesticide-related problems are common in developing countries. The report suggested that there is urgent need to actively promote safe pesticide use and hygienic practice among the people handling these substances". The population density in the rural areas in 1990 was 914 persons per square km which was increased to 1297 persons per square km in 2003. The access to water and sanitation in the urban areas in 1990 was 55 percent which was decreased to 51 percent in 2004 while only 12% rural population was availing the same facilities in 1990 which were increased to 35% percent population. It means that huge urban and rural population is still deprived of water and sanitation facilities which are imperative for good health. The availability of fresh water resources per capita 783 (cum) which was declined to 754 (cum) in 2004 However, Bangladesh has made substantial improvement in reducing children under 5 mortality rate from 149 per 1000 in 1990 to 77 per 1000 in 2004 and irrigated land area which was 30% cropland in 1990 ,now has jumped to 56% in 2003. In order to reduce the severity of environmental problem, Bangladesh has framed environmental policy focusing to achieve sustainable development through effective poverty reduction. It has also made commitment to achieve the "Millennium Development Goals" of halving poverty by 2015. The use, production and marketing of polythene shopping bags have been banned. Environment-polluting two stroke three wheelers have been replaced by environment-friendly CNG driven vehicles since January 2003. Aged-old public transport vehicles have started withdrawing from Dhaka city. Various polluting industries are being relocated with proper affluent treatment plants. Different measures have been taken to save rivers from pollution. A large scale plantation programmed has been launched to bring at least 20% of total landmass of the country under forest cover by 2015. A plan to plant at least 10 million coconut trees in the coastal areas of Bangladesh has been executed by 2006.

CLIMATIC CHANGE AND NATURAL DISASTERS

The growing environmental pollution throughout world has been causing climatic change, rising seas level, warming climate and causing natural disasters in the form of earthquakes,

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floods, hurricanes, etc, all over the world, posing serious threat to human being. The frequency of natural disasters has increased considerably over the past thirty years. The number of such events in 1960s was 16 and in 1980s they were 70. About 800,000 people were killed during draughts during 1974-84 all in developing countries (OFDA,1987). The number of extreme climatic events (floods, hurricanes, windstorms and droughts) were 89 during 1990s (Munich Re 2001). The increased frequency of natural disasters coincides with increasing concentration of population and assets in disaster prone urban areas which leads to growing economic losses. Some of the major natural disasters and resulting human losses are tabulated in the following table:

Table 7: Major Natural Disasters

Year	Country	Death
Jan 23, 1556	Shaanxi,China	830,000
Nov 1, 1755	Lisbon, Portugal	80,000
Aug 17, 1906	Valparaiso, Chile	20,000
Dec 28,1918	Missina,Itlay	70.000
Dec 16, 1920	Ningxia-Gansu,China	200,000
Sept 1, 1923	Kanto,Japan	143,000
May 22, 1927	Tsinghai, China	200,000
Dec 26, 1939	Erzincan,Turky	32,700
May 31, 1966	Peru	66,000
July 27, 1976	Tangshan,China	242,119
Dec 7, 1988	Armenia	25,000
Jan 17, 1995	Kobe,Japan	5,402
Jan 26, 2001	Gujrat,India	20,085
Dec 26, 2003	Southern Iran	31,000
Dec 26, 2004	Tusunami-Smatra,Indian ocean	283,160
Onto 08, 2005	Kashmir-NWFP,Pakistan	150,000

Source: Gurenko (2004), World Bank database.

These natural disasters have caused substantial economic and financial loss, exerting negative impact on the economies of respective countries. The following table shows the volume of economic loss.

Table 8: Economic Loss due to Natural Disasters

Events (year) (In US$ billion)	Country	Economic loss	Insurance loss as % of economic loss
Earthquake (1992)	Northridge,USA	43.00	47%
Floods (1997)	Poland	3.50	6%
Hurricane (1999)	Honduras	3.00	6%
Earthquake (1999)	Izmit,Turkey	22.00	5%
Winter storm (1999)	France	6.20	100%
Earthquake (2001)		0.60	2%
Tsunami (2004)	India, Indonesia, Sri Lanka,etc.	7.00	N.A
Earthquake (2005)	Pakistan	5.00	N.A

Source: World Bank,/Ministry of Finance, India & Pakistan

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FINDINGS AND RESULTS

Environmental degradation is an international issue and all countries whether they are developed or under-developed are facing this problem. The developed countries are coping with this problem in a better way by shifting their wastes and environmental hazards to underdeveloped countries. They are also using environmental clean technology. They have know-how, resources and technology to deal with environmental degradation. But they are using excessive resources to produce surplus goods and services and in this way they are generating more pollution. However, they cannot slow their economic growth just for environmental cleanliness has it will not only affect their economies but also the economies of less developed countries. All South Asian countries are under-developed and most populous. In order to feed their growing population, they will have to produce more consumer goods, in order to provide shelter they will have to construct more houses, in order to provide health care they will have to build more hospitals. Similarly, they will have to accelerate their economic growth because they need more resources for their economic development. Their cities are expanding due to migration of population from rural to urban areas and this process is creating multi-dimensional problems including sanitation, education and health services for them. To solve these problems is an uphill task. Similarly, industry is expanding rapidly in these countries and most of the industries are labour-intensive that are producing primary products. Poverty and income inequality are two major issues of these countries. All these factors are pollution-drivers and the governments of these countries are facing tradeoff between economic growth and environmental degradation. They don't have resources and technology to cope with the problems of environmental degradation. Border conflicts and political differences among South Asian countries prevent them to evolve a common or joint strategy to cope with environmental degradation.

POLICY RECOMMENDATIONS

The policy implications for environmental challenges need anintegrating strategy on the part of South Asian countries to deal with environmental degradation. Similarly, advanced countries should help poor countries how to control growing environmental problems. The SAARC countries should settle their political issues through peaceful means and cut their defense expenditures. This will help to release resource for development and environmental projects.

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